

THE LOCAL GOVERNMENT RESPONSE
TO THE BASIC EDUCATION PROGRAM:
EQUITY, SPENDING, AND LOCAL TAX EFFORT



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FOREWORD

Education funding is one of the most significant expenditures by state and local governments. It is a historically intergovernmental enterprise. In every state except Hawaii, responsibility is shared, and the preponderance of funding shifts back and forth between the two levels of government from time to time. When state funding formulas change and funding increases, local governments typically slow their revenue increases. Likewise, when state funding flows level out as they typically do, local funding increases often begin to rise faster in an effort to make up at least some of the difference in the state's lower rate of increase.

This was the case when Tennessee's main school funding formula, the Basic Education Program or BEP, was phased in through the mid-1990s. The state is now in the process of phasing in the BEP 2.0, although this year's revenue shortfalls have temporarily stalled the planned increases. This report's look back at the response of local governments to the phase in of the original BEP formula leads us to believe that many of them will return to slower rates of increase as state funding picks back up.

The analysis presented in this report focuses on the "flypaper effect," the extent to which state dollars "stick" to the program targeted. Clearly, state funds earmarked for specific local programs are spent on those programs; the audit process sees to that. But do the local dollars that were being spent on those programs remain with them? This report, produced under a grant by the TACIR to the University of Tennessee's Center for Business and Economic Research, found that when you look at constant dollars per student, local funds did not always remain with schools as the BEP formula was phased in.

This does not mean that local funding was cut. It means that increases did not keep pace with the increase in inflation and with the increase in the student population. The Department of Education enforced the state's maintenance of effort requirement throughout the phase in period, but that mandate ensures only that local governments do not reduce actual funding in total. This mandate allows funding per student to decline, and it allows inflation-adjusted funding to decline. When that happens, the state funding is said not to "stick" in accordance with the "flypaper," which would be the schools in this case.

Does it matter that the state funding might not "stick"? That depends on the purpose of the increase in state funding. In the main, the answer is yes, it matters. In nearly all cases, increases in state funding for local governments are intended to procure genuine improvement in local programs. If local funding increases fall below the rate of inflation or decline in comparison with the targeted population to be served, then genuine

improvement is difficult. Local effort may be said to have shifted to other local programs, which may include tax relief. Whether this is proper depends on whether that is one of the express goals of the increase in state dollars.


One of the driving forces behind Tennessee's Basic Education Program was to improve equity in funding, something that was driven by a lawsuit brought by something in the neighborhood of 70 school systems. Those school systems won that lawsuit. Tennessee's supreme court found the prior funding formula unconstitutional because it did not ensure "substantially equal educational opportunity for all students" regardless of which school system they attended. Taxpayers could not provide equal opportunity in all school systems with the same level of effort because the state's funding scheme did not make up the difference. Areas with richer tax bases could provide a better education for their children with lower tax rates than areas with poorer tax bases. The supreme court ruled that inequity unconstitutional and laid responsibility for remedying the problem at the feet of the state legislature.

The legislative remedy was initially formulated and presented by Governor Ned McWherter in 1991. The proposal was discussed for two years before it was adopted. During that time, there was some discussion of equity among taxpayers. Many in the legislature argued that the problem was really a local one, that some school systems lacked funding because their local governments kept tax rates low. There is little doubt that that was the case in some areas of the state. At the same time, however, there were other areas with equally low tax rates that were able to spend more on their schools because their tax bases were so much larger when compared with the number of students in their schools.


Was remedying that taxpayer inequity a goal of the original BEP formula? It is hard to say for certain, but while some legislators declared that low tax rates in some areas were the cause of underfunded schools, others argued that other areas with poor tax bases imposed higher rates on residents and still could not match the spending of wealthier areas. To the extent that remedying that inequity was a goal of the BEP formula, it could be expected that some of the increase in state funding would accrue to the benefit of local residents in the form of lower local tax rates. We do not know whether or to what extent this was actually the case, but given the possibility that some degree of improvement in taxpayer equity was appropriate, reduced effort in areas of high effort and low tax bases would not be improper.

As things stand today, overall funding for Tennessee's schools still compares poorly to national averages and most other states, and as this report illustrates, some inequities remain. The state legislature has adopted an enhanced formula, dubbed BEP 2.0, and

has begun to phase in new state funding for it. The effects of the new formula remain to be seen, especially in light of the current downturn in the economy and consequent shortages in state and local revenues. But the effort will continue, and this report offers valuable insight into how to evaluate the local response to that effort. It is our hope that the new state funds will stick to our schools and that we will see the improvement that our students deserve. The economic vitality of our state and the quality of life of its residents depend on it.



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EXECUTIVE SUMMARY

Education spending in Tennessee is the largest programmatic area of the state budget and will account for 48 cents of every state tax dollar collected in the 2008-09 fiscal year. Local governments also spend a large share of their tax receipts in support of education. The state substantially increased its commitment to elementary and secondary education in 1992 with the introduction of the Basic Education Program (BEP). When fully funded in the 1997-1998 school year, new BEP revenue surpassed \$2.0 billion.

This report examines several aspects of the BEP system that prevailed prior to the changes that were implemented through BEP 2.0 in the 2007 legislative session. The first two major sections of the report provide background and context to support the analysis that follows. Considered are student spending and achievement patterns across the states, the wave of school finance reform initiatives that began with the landmark case of *Serrano v. Priest* in California, and equity and adequacy challenges to state school finance mechanisms.

The last three sections of the report analyze some of the important effects of the BEP system. The first area of focus is the effect of new BEP dollars on equity in spending and revenue per pupil following implementation of the new program. This issue is especially important since a reduction in spending disparities was a primary objective of the BEP. Five different measures of equity are considered including the Federal Range Ratio, the 90/10 Ratio, the coefficient of variation, the Gini coefficient, and Theil's T-statistic. The findings are consistent across the various equity measures and show that overall spending equity and revenue equity were enhanced by the influx of BEP funds. At the same time, there was a growing disparity in the local per pupil contribution for education across school districts. Such disparities could arise from changes in effort or tax capacity across local school districts. The rising local disparities have not been large enough to offset the influence of rising state financial support through the BEP.

Total state funding for the Basic Education Program (BEP) is now more than \$3.6 billion (fiscal year 2008-09).

Growth in state funding through the BEP formula appears to have lead to diminished new local funding for schools.

The second topic analyzed is the way in which local funding for education and local tax effort responded to the injection of BEP grants. It is conceivable that local governments chose to reduce their support for current education spending once they received larger grants from the state. In practice this response was constrained by the state's maintenance of effort requirement; however, the maintenance of effort requirement was in terms of *nominal* aggregate spending. This means that over time school districts had the flexibility to reduce the growth of aggregate *real* (i.e. inflation-adjusted) spending and *real* spending per pupil. In addition, enrollment growth could have led to a decrease in nominal per pupil spending even though aggregate education spending was maintained. This issue was analyzed using a statistical technique called multivariate regression. This tool allows the researcher to control for a range of factors that affect education spending at the local level, while at the same time isolating the independent effect of the BEP. Revenue collections at the federal, state, and local level are controlled for in all regressions. These figures include capital outlay, but do not include major construction expenses such as new classrooms or schools.

While the focus of the analysis is the change in current per pupil spending and revenue due to BEP implementation, these results must be tempered by the fact that the analysis has not fully accounted for all school construction expenditures. The findings indicate that the BEP caused the local real revenue contribution in support of elementary and secondary education to diminish over time both by the phase in and by the longer-term influence of the BEP. Additional analysis using regression methods indicates that the independent effect of the BEP was to reduce local tax effort. These findings may or may not be consistent with the legislated intent of the BEP. Moreover the results do not fully account for all capital spending targeted to elementary and secondary education.

The third and final component of the analysis considered the cost differential factor (CDF) within the BEP formula and its influence on local spending. Like the BEP itself, it is possible that CDF funds accommodated the displacement of local funds for education. This question was also explored using regression

analysis, allowing for isolation of the independent effect of the CDF on the local revenue contribution controlling for other factors. The results show that districts that received the CDF in each year since the BEP was implemented raised overall real education spending, but they did so by less than the amount of their CDF allocation. On the other hand, there was no appreciable increase in spending on the part of districts that received the CDF in only some years.

Since the implementation of the BEP, overall spending on education in Tennessee has increased substantially. In addition, the disparity in spending across school districts has lessened. On balance the evidence presented in this report indicates that the BEP achieved these primary objectives. The introduction of BEP 2.0 in 2007 began a new era for school finance in Tennessee. The effect on spending and equity will need to be examined in the years ahead in order to gauge the consequences of the policy reforms.

INTRODUCTION

Education spending in Tennessee will consume 48 cents of every state tax dollar collected in the 2007-08 fiscal year, making education the largest programmatic area in the state budget. Education spending also consumes a significant share of local government revenue, adding further to the taxpayer's support of education. Tennessee increased its commitment to elementary and secondary education in 1992 with the initial phase in of the Basic Education Program (BEP). When fully funded in the 1997-1998 school year, BEP revenue surpassed \$2.0 billion in support of public schooling.

The state legislature changed the BEP formula in 2007 in ways that significantly alter the funding mechanism. There are four major changes to the BEP under the new plan, known as BEP 2.0:

- First, the way in which fiscal capacity is measured has been changed. In the past, fiscal capacity was determined by a statistical regression equation. This method was criticized especially for its perceived lack of transparency. BEP 2.0 uses a less complicated method that is based solely on property and sales tax revenues.
- Second, the state share of instructional funding has been increased from 65% to 75%.
- Third, the Cost Differential Factor (CDF) has been eliminated. Funds previously provided to districts with high labor costs via the CDF have been reallocated toward funding the increased state share of teacher salaries.
- The last major change reflected in BEP 2.0 is also related to teacher compensation: BEP 2.0 increases the target unit cost of Tennessee teachers to \$40,000. In addition, the teacher pay unit-cost amounts must be reviewed annually.

This report examines the BEP system that prevailed prior to the changes implemented via BEP 2.0 in the 2007 legislative session. For context, the first section is a review of student spending and

The accountability component of BEP 2.0 requires new funds to be used to correct weaknesses that are identified in school improvement plans. Even if a local legislative body chose to reduce own-source support for education, new BEP funds would remain focused on remedying the identified deficiencies.

achievement patterns across the states. Next is a discussion of the school finance reform initiatives that began with the landmark case of *Serrano v. Priest* in California. This section discusses both equity and adequacy challenges to state school finance mechanisms, as well as legal challenges to the funding system in Tennessee.

The last three sections of the report analyze some of the important effects of the BEP system. First is the effect of new BEP dollars on student equity, as measured by per pupil current spending across school districts. This is a follow-up to work by the Tennessee Advisory Commission on Intergovernmental Relations in 2003 (Roehrich-Patrick and Green, 2003). The results generally indicate that overall spending and revenue equity were enhanced by the BEP. Second is the way in which local funding responded to the phase in of state funds in support of the BEP. The findings indicate that while current spending increased significantly, the local inflation-adjusted contribution in support of elementary and secondary education was diminished over time both by the phase in and by the longer-term influence of the BEP. The final section focuses on the CDF and its influence on local spending. The results show that districts receiving the CDF in each year since BEP implementation raised overall inflation-adjusted education spending, but did so by less than the amount of their CDF grant allocation. On the other hand, there was no appreciable increase in current spending on the part of districts that received CDF in only some years.

EDUCATION SPENDING AND STUDENT ACHIEVEMENT

Education spending in the U.S. exceeds the budget for nearly all other spending programs, excluding national defense. The National Education Association (NEA) estimates that total primary and secondary school expenditures in the U.S. were more than \$519.1 billion during the 2005-2006 school year.¹ Given a national estimate of average daily attendance of 45.9 million, this translates

¹Current expenditures are estimated by NEA to be around \$439.5 billion.

into spending of about \$9,576 per student.² The state of Tennessee lags the national average in school spending considerably with average per pupil spending of \$7,625 (based on 2006 estimates of average daily attendance). Based on these figures, Tennessee currently ranks 43rd out of the 50 states (plus the District of Columbia) in current per pupil education expenditures. Per pupil expenditures for primary and secondary schools nationwide range from a low of \$5,791 (Arizona) to a high of \$17,545 (District of Columbia).

Tax revenues that support this spending come from all levels of government within the U.S. The NEA estimates that total revenue receipts for public primary and secondary education exceeded \$498.0 billion in 2006. This figures breaks down to \$45.3 billion, or 9.1%, from the federal government, \$237.0 billion, or 47.6%, from state governments, and \$215.7 billion, or 43.3%, from local governments. Revenues for education spending in the state of Tennessee for the 2005-2006 school year can be broken down as follows: \$796.0 million, or 11.5%, from the federal government, \$3.1 billion, or 44.8%, from the state government, and \$3.0 billion, or 43.7%, from local governments.

Based on 2006 data, the median public school revenue per student in average daily attendance in the U.S. was \$10,851. As was the case with per pupil expenditures, Tennessee trailed the national average with per pupil revenues of \$8,032. This figure ranks 49th out of the 50 states plus the District of Columbia. Tennessee's standing can be attributed to lower than average per pupil local and state tax revenues.³ Per pupil revenues nationwide during the 2005-2006 school year ranged from \$7,494 (Utah) to \$16,204 (District of Columbia).

The level of federal government expenditures has increased dramatically in recent years, mostly due to the passage of the No Child Left Behind (NCLB) Act of 2001. In 1995, the federal

²All figures from this section can be found in the following source: NEA, *Rankings and Estimates: 2006*, available at www.nea.org

³The lower revenues reflect both lower capacity and effort. Tennessee's spending in 2006 was 79.6% of the national average. Per capita personal income in Tennessee relative to the nation—one measure of relative capacity—stood at 89.3% in 2006. On balance, the state's spending relative to the nation's falls well below the state's relative capacity.

government only provided 6.9% of total public education funding in the U.S. By 2006 this percentage had grown to 9.1% (NEA, 2006). The proportion of revenues received from governments nationwide has remained relatively constant during the same ten year period (47.6% in both 1995 and 2006). The proportion of revenues from local sources, however, has decreased from 45.6% in 1995 to only 43.3% in 2006.

States are allowed, through NCLB, to administer the achievement test of their choosing. They may also choose where to set the bar. In other words, they determine what level of achievement is considered to be passing, or proficient. In some states, the 70th percentile may be the bar to indicate passing, whereas the bar may be set as low as the 40th percentile in other states. Because of the tremendous variation in state achievement standards, it is not practical to compare NCLB achievement levels across states. The National Assessment of Educational Progress (NAEP), also known as “the Nation’s Report Card,” is the only nationally representative and continuing assessment of what America’s students know and can do in various subject areas. Tests are conducted periodically in reading, math, science, writing, U.S. history, civics, geography, and the arts. The results for any given state are based on public school students only. The main NAEP assessment is usually administered by the state in grades 4 and 8.⁴

Tennessee typically performs below average on all NAEP assessments. Between 1990 and 2005, Tennessee almost always ranked in the bottom 20% of states on both 4th and 8th grade math and reading assessments (Grissmer and Flanagan, 2006). Tennessee has also seen below average gains in NAEP test scores. In 2005, Tennessee ranked 42nd out of 50 states and the District of Columbia on the NAEP 8th grade mathematics test. Tennessee’s 8th grade students fared better in reading in 2005, ranking 35th out of the 50 states plus Washington, D.C.⁵ Historically, Tennessee students have performed better in science than in math and reading according to the NAEP assessments.

⁴*The Nation’s Report Card*; National Center for Education Statistics; U.S. Department of Education; <http://nces.ed.gov/nationsreportcard/faq.asp>

⁵*NAEP State Comparisons*; National Center for Education Statistics; U.S. Department of Education; <http://nces.ed.gov/nationsreportcard/nde/statecomp/index.asp>

In addition to low NAEP assessment results, Tennessee is often criticized for the low standards that are set for student achievement. According to the state administered test (the TCAP) in 2003, 80% of fourth graders were proficient in reading; however, based on NAEP results, only 26% were proficient. Some states, including Tennessee, create the appearance of having high levels of proficiency by setting low achievement standards. *Education Next* recently awarded Tennessee with the “Cream Puff Award” and gave the state’s achievement standards a grade of F (Peterson and Hess, 2006). The weaknesses in Tennessee’s standards have been widely recognized across the state. In response to these concerns, the state has joined the American Diploma Project and will introduce higher standards in high schools.

Table 1 presents the grades given by *Education Next* to all of Tennessee’s bordering states. Tennessee is the only state that receives a grade of F in all categories, although North Carolina also receives an overall grade of F. Tennessee, North Carolina, and Texas have the lowest proficiency standards in the country, while Maine, South Carolina, Missouri, and Wyoming have standards that closely match those associated with the NAEP.

TABLE 1: Strength of State Proficiency Standards

State	4th Grade		8th Grade		Overall Grade
	Math	Reading	Math	Reading	
Arkansas	B	B+	B	C	B-
Georgia	D	F	D-	F	D-
Kentucky	-	C	B-	-	C+
Mississippi	F	F	D+	C-	D-
Missouri	B	-	A	-	A
North Carolina	D-	D-	F	F	F
Tennessee	F	F	F	F	F
Virginia	-	-	D-	C-	D+

SCHOOL FINANCE REFORM

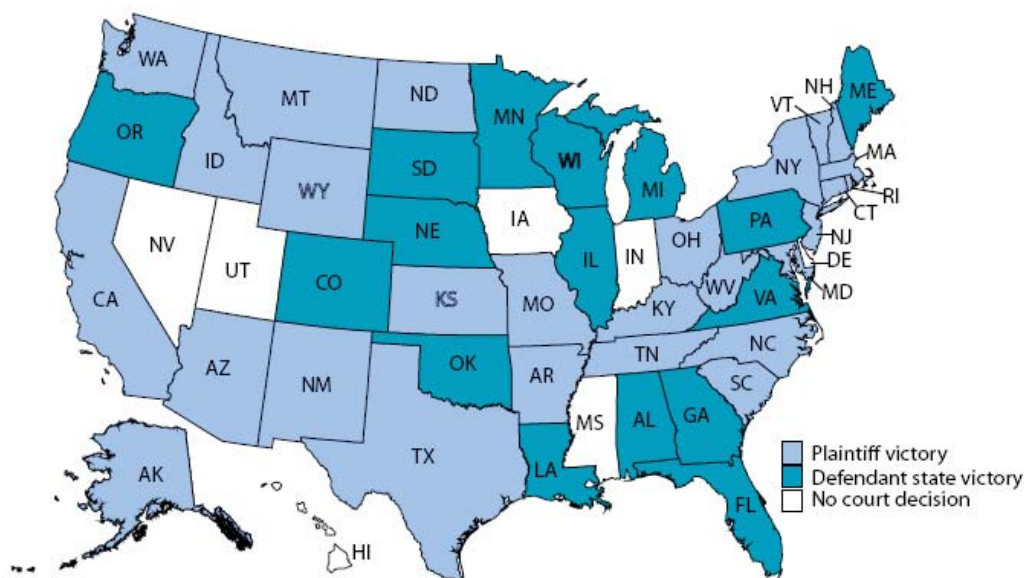
Most agree that modern public school finance reform started in California in 1971 with the school finance case *Serrano v. Priest* (487 P.2d 1241).⁶ The California Supreme Court ruled that the disparities in public school funding across the state violated the equal protection clause of the California constitution. The case resulted in significant changes in the public school finance system

⁶California is also significant because of its sheer size, educating one out of every eight public school students (ACCESS, 2007). The policies chosen by California have influences that reach far beyond the borders of the state.

in California, lessening considerably the variation of per pupil school spending across school districts. When the *Serrano v. Priest* case was brought before the California Supreme Court again in 1986, nearly all California school districts (93%) were spending within \$100 per pupil of one another (ACCESS, 2006).

Since the first *Serrano* case, there has been a series of school finance lawsuits filed across the states, based on both equity and adequacy considerations. As of June 2007, 97 education finance reform cases had been brought before state supreme courts. Cases have been decided in all but seven states: Delaware, Hawaii, Indiana, Iowa, Mississippi, Nevada, and Utah. That means that 43 states have been involved in school finance litigation at some point. In 17 of these states the case has been found in favor of the defendant, the state, and no finance reform has been mandated by the court. In the remaining 26 states at least one case was found in favor of the plaintiffs, and school finance reform has been court mandated.⁷ Figure 1 shows the breakdown of court cases across the country.

FIGURE 1: Breakdown of Court Cases Countrywide



Source: ACCESS, 2007

Most states that have experienced school finance cases have encountered more than one case. Arizona has confronted the highest number of challenges, with five court cases being heard by the Arizona Supreme Court. Tables 2, 3, and 4 present all school finance reform cases by state. Cases in bold type are ongoing and no decision had been reached as of May 27, 2007.

⁷Reform may not have taken place at the time of this report even though it has been mandated by the courts.

TABLE 2: Plaintiffs Won Case Forcing Statewide School Finance Reform

State	Year	Case
Alaska	1997	Matanuska-Susitna Borough v. Alaska
	1999	Kasayulie v. State
	2004	Moore v. State
Arizona	1973	Shofstall v. Hollins
	1994	Roosevelt Elementary School District 66 v. Bishop
	1997, 1998	Hull v. Abrecht
	2003	Crane Elementary v. State
	2005	Flores v. Arizona
Arkansas	1985	Dupree v. Alma School District
	1996	Lake School District No. 25 v. Huckabee
California	1971, 1976	Serrano v. Priest
	2004	Williams v. State
Connecticut	1977, 1985	Horton v. Meskill
	2005	CCJEF v. Reil
Idaho	1975	Thompson v. Engelking
	1993, 1998	Idaho Schools for Equal Educational Opportunity v. Evans
Kansas	1972	Caldwell v. State
	1991	Mock v. State
	1994	Unified School District No. 229 v. State
	2001, 2005	Montoy v. State
Kentucky	1989	Rose v. Council for Better Education
	2007	Young v. Williams
Maryland	1983	Hornbeck v. Somerset County Board of Education
	2000	Bradford v. Maryland State Board of Education
Massachusetts	1819	Commonwealth v. Dedham
	1993	McDuffy v. Secretary of Education
	2004	Hancock v. Driscoll
Missouri	1993, 2007	Committee for Educational Equality v. State
Montana	1974	State ex. Rel. Woodahl v. Straub
	1989, 1990	Helena Elementary School District No. 1 v. State
	2004	Columbia Falls Public Schools v. State
New Hampshire	1993, 1997, 1999, 2002	Claremont School District v. Governor
	2006	Londonberry v. State
New Jersey	1973	Robinson v. Cahill
	1985, 1990, 1994, 1997, 1998, 2000	Abbott v. Burke
New Mexico	1999	Zuni School District v. State
New York	1982	Levittown v. Nyquist
	1995	Reform Educational Financing Inequities Today v. State
	2001, 2003, 2006	Campaign for Fiscal Equity Inc. v. State of New York
North Carolina	1987	Britt v. North Carolina State Board of Education
	1997	Leandro v. State
	2004	Hoke County v. State

TABLE 2: Plaintiffs Won Case Forcing Statewide School Finance Reform (continued)

State	Year	Case
North Dakota	1994 2006	Bismark Public Schools v. North Dakota Williston Public School District v. State
Ohio	1923 1976 1997, 2000, 2002	Miller v. Korn Board of Education v. Walter Derolph v. State
South Carolina	1998 2005	Richland County v. Campbell Abbeville County School District v. State of South Carolina
Tennessee	1993, 1995, 2002	Tennessee Small School Systems v. McWherter
Texas	1973 1989, 1991, 1992, 1995 2001	Rodriguez v. San Antonio Independent School District Edgewood v. Kirby West Orange-Cove Consolidate Independent School Districtm v. Neeley
Vermont	1997	Brigham v. State
Washington	1974 1978, 1982 2006	Northshore School District No. 417 v. Kinnear Seattle School District No. 1 v. State Federal Way School District v. State of Washington
West Virginia	1979, 1984 1988 1996 2003	Pauley v. Kelly State ex. Rel. Boards of Education v. Chafin Toblin v. Gainer Tomblin v. State Board of Education*
Wyoming	1980 1995, 2001**	Washakie County School District v. Hershler Campbell County School District v. State

All cases in bold type are still pending as of May 27, 2007. The years presented for these cases represents the year in which the case was officially filed.

* The case was found in favor of the state in 2003 with the court deciding that the current system put into place after the 1996 case was indeed constitutional.

**The case in 2001 was found in favor of the state with the court deciding that the current Wyoming system was adequate.

TABLE 3: Case Has Been Found in the Defendant's Favor

State	Year	Case
Alabama	1993	Opinion of Justices
	1997	ACE v. Hunt
	2002	ACE v. Siegelman
Colorado	1982	Lujan v. State Board of Education
	2000	Giardino v. Colorado State Board of Education***
Florida	1996	Coalition for Adequacy and Fairness in School Funding v. Chiles
Georgia	1981	McDaniel v. Thomas
	2004	Consortium v. State
Illinois	1996	Committee for Educational Rights v. Edgar
	1999	Lewis E. v. Spagnolo
Louisiana	1998	Charlet v. Legislature of State of Louisiana (consolidated with)
	1998	Minimum Foundation Commission v. State
	2005	Jones v. State Board of Elementary and Secondary Education
Maine	1995	School Administrative District No. 1 v. Commissioner
Michigan	1972, 1973	Milliken v. Green
	1984	East Jackson Public Schools v. State
Minnesota	1993	Skeen v. State
	1999	Independent School District no. 625 v. State
	2000	Minneapolis Branch, NAACP v. State***
Nebraska	1993	Gould v. Orr
	2003	Douglas County v. Johanns
Oklahoma	1987	Fair School Finance Council of Oklahoma, Inc. v. State
Oregon	1976	Olsen v. Oregon
	1991	Coalition for Educational Equity v. Oregon
	1995, 1999	Withers v. State
Pennsylvania	1979	Danson v. Casey
	1998	Merrero v. Commonwealth of Pennsylvania
	1998	Pennsylvania Association of Rural and Small Schools v. Ridge
Rhode Island	1995	City of Pawtucket v. Sundlun
	2000	Town of Exeter v. State
South Dakota	1994	Bezdicheck v. State
Virginia	1994	Scott v. Commonwealth
Wisconsin	1989	Kukor v. Grover
	2000	Vincent v. Voight

*** Case was settled out of court.

TABLE 4: State Supreme Court Has Not Issued a Decision on a School Finance Case

State
Delaware
Hawaii
Indiana
Iowa
Mississippi
Nevada
Utah

THE CONSTITUTIONAL CHALLENGE IN TENNESSEE

From 1977 until 1992 Tennessee funded public primary and secondary schools via a foundation grant program known as the Tennessee Foundation Program (TFP). In 1988, a group known as Tennessee School Systems for Equity (TSSE) was created by three Tennessee school superintendents. This small group quickly grew into a group of 77 Tennessee school systems that filed the original TSSE lawsuit in 1988 against the state charging constitutionally unequal public school funding. Over the past 15 years Tennessee has experienced a school finance reform case that has been heard three separate times by the Tennessee Supreme Court. This case is known as the *Small Schools* lawsuit. The court has found in favor of the plaintiff in each instance.

The original case, *Tennessee Small School Systems v. McWherter (Small Schools I)*, challenged the TFP and was found in favor of the plaintiffs. *Small Schools I* led to the passage of Tennessee’s Education Improvement Act in 1992. This legislation brought tremendous changes to the education system in Tennessee including elimination of the TFP and creation of a new funding formula (the BEP), the enactment of an accountability system using school and district report cards, and the formation of a new local governance structure for K-12 public education (Smith, 2004). This represented a fundamental change in the way in which education services were funded in Tennessee.

In the second decision known as *Small Schools II*, the court upheld the incremental approach used in the BEP to phase in the BEP; however, the court also ruled that teacher salary increases should be included as a part of the equalization formula. In response to

Tennessee’s equity lawsuit has reached the state supreme court three times.

the *Small Schools II* ruling, the Tennessee legislature passed the Teachers' Salary Equity Plan in 1995.

The final decision, *Small Schools III*, was rendered in 2002. In this instance there was a challenge to the Teachers' Salary Equity Plan. The plaintiffs claimed that teacher salaries should be included as a component of the BEP, and that the Salary Equity Plan had not produced appropriate equity in Tennessee teacher salaries. In a decision issued in October 2002, the court sided with the plaintiffs once again and required that teacher salaries be added to the BEP formula. The legislature modified the formula in 2005, and the trial court dismissed the *Small Schools* case in 2006, but could reopen it if another issue should arise.

ADEQUACY VS. EQUITY

The initial wave of school finance challenges, including *Serrano v. Priest*, was based on funding inequities that arose from differences in local tax capacity (or "wealth"); however, the majority of school finance reform cases filed across the country in the past five years have been based on *adequacy* concerns rather than equity concerns. Unlike equity, the notion of adequacy is based on the *level* of student achievement and thus the level of school spending. An adequate education is defined as the level of education necessary to ensure a certain level of proficiency among students. In many states in which these cases were filed the courts had already found the school finance reform system unconstitutional based on equity considerations.

The increased prominence of adequacy cases seems to have been amplified by the passage of the NCLB Act in 2002. It is now imperative for states to provide an education that is adequate enough to reach the NCLB achievement standards. Since 2002, costing-out studies measuring the cost of providing an adequate education have been conducted in 26 states, including Tennessee. These studies are typically state initiated but may also be mandated by the court system or may be performed by an outside organization such as a teacher's union. Tennessee's 2004 costing-out study was initiated by The Coalition for Tennessee's Future.⁸

⁸For a brief overview of this organization, see <http://www.tsba.net/abouttsba/coalition.asp>. The study was presented to the BEP Review Committee, but it was not published.

The federal No Child Left Behind Act (2002) has prompted more adequacy lawsuits.

Tennessee has not yet faced an adequacy funding challenge, though a number of other states in the southeast have.

Table 5 shows the most recent adequacy cases across the nation. Tennessee has not yet faced an adequacy funding challenge, though a number of other states in the southeast have. The Tennessee costing-out study that was completed in 2004 estimated the additional cost associated with providing an adequate education to be around \$1.1 billion.⁹

TABLE 5: Adequacy Cases

State	Has there been an adequacy suit?	Most Recent Adequacy Case	Did the final court decision side with the state?	Was there an adequacy study? Who initiated it?
Alabama	Yes	Alabama Coalition for Equity v. Hunt (1992)	Yes. Case was dismissed in 2002.	State initiated, 2001
Alaska	Yes	Kasayulie v. State (1997)	No	State initiated, 1998
Arizona	Yes (2)	Flores v. Arizona (2005)	No	Court ordered, 2001 Outside initiation, 2005
Arkansas	Yes	Lake View School District, No. 25 v. Huckabee (2001)	No	Court ordered, 2003
California	Yes	Williams v. State (1999)	Parties settled in August 2004	State initiated, 2005
Colorado	No	n/a	n/a	State initiated, 2006
Connecticut	Yes (2)	Connecticut Coalition for Justice in Education Funding, Inc. v. Rell (filed in 2005)	No decision yet	State initiated, 2005
Delaware	No	NA	NA	No
Florida	Yes	Coalition for Adequacy and Fairness in School Funding v. Chiles (1995)	Yes	No
Georgia	Yes	Consortium for Adequate School Funding in Georgia v. State (2004)	No decision yet	No

⁹“An Estimation of the Total Cost in 2002-03 of Implementing the Results of the School Finance Adequacy Study Undertaken By Augenblick, Palaich and Associates, Inc.” <http://www.tsba.net/capitolwatch/pdf/AdequacyDistrictReport.pdf>

TABLE 5: Adequacy Cases (continued)

State	Has there been an adequacy suit?	Most Recent Adequacy Case	Did the final court decision side with the state?	Was there an adequacy study? Who initiated it?
Hawaii	No	NA	NA	State initiated, 2005
Idaho	Yes	Idaho Schools for Equal Educational Opportunity v. State (1998)	No (facility case only)	No
Illinois	Yes	Lewis E. v. Spagnolo (1999)	Yes	State initiated, 2001
Indiana	No	NA	NA	No
Iowa	Yes	Coalition for a Common Cents Solution v. State (2002)	Parties settled in 2004	No
Kansas	Yes	Montoy v. State (1999)	No	State initiated, 2002
Kentucky	Yes	Young v. Williams (2003)	Yes. Case was dismissed	State initiated, 2003 Outside initiation, 2003
Louisiana	Yes	Charlet v. Legislature of the	Yes	No
Maine	No	NA	NA	State initiated, 1999
Maryland	Yes	Bradford v. Maryland State Board of Education (2000)	No	State initiated, 2001 Outside initiation, 2001
Massachusetts	Yes	Hancock v. Driscoll (2004)	No	Outside initiation, 1991, 2003
Michigan	No	NA	NA	No
Minnesota	No	NA	NA	Outside initiation, 2006
Mississippi	No	NA	NA	State initiated, 1993
Missouri	Yes (2)	Committee for Education Equality v. State (1993, 2007)	No. The most recent case is ongoing and no decision has been issued.	Outside initiation, 2003
Montana	Yes	Columbia Falls Public Schools v. State (2004)	No	Outside initiation, 2007 State initiation, 2005 Outside initiation, 2002
Nebraska	Yes	Douglas County v. Johanns (2003)	No decision yet	Outside initiation, 2003

TABLE 5: Adequacy Cases (continued)

State	Has there been an adequacy suit?	Most Recent Adequacy Case	Did the final court decision side with the state?	Was there an adequacy study? Who initiated it?
Nevada	No	NA	NA	State initiated, 2006
New Hampshire	Yes (2)	Londonberry v. State	No. Court issued a summary judgment against the state.	State initiated, 2000 State initiated, 1998
New Jersey	Yes	Abbott v. Burke (1981)	No	State Initiated, 2003 State initiated, 1996
New Mexico	No	NA	NA	State initiated, 2007
New York	Yes	Campaign for Fiscal Equity v. State (1993)	No	Court ordered, 2004 State initiated, 2004 Outside initiation, 2004
North Carolina	Yes (2)	Leandro v. State (2007)	No decision yet. First case (Hoke County v. State) was found in favor of the plaintiffs.	No
North Dakota	Yes	Williston Public School District v.	No	State initiated, 2003
Ohio	Yes (3)	DeRolph v. State (1997, 2000, 2002)	No	Court ordered, 1995 Outside initiation, 1993
Oklahoma	No	n/a	NA	Unknown initiation, 2004
Oregon	No	NA	NA	State initiated, 2000
Pennsylvania	Yes	Marrero v. Commonwealth (1998)	Yes. Case dismissed	No
Rhode Island	Yes	Town of Exeter v. State (2000)	Yes	State initiated, 2007
South Carolina	Yes	Abbeville County School District v. State (2005)	No	Outside initiation, 2000
South Dakota	No	NA	NA	Outside initiation, 2006
Tennessee	No	NA	NA	State initiated, 1992 Outside initiation, 2004

TABLE 5: Adequacy Cases (continued)

State	Has there been an adequacy suit?	Most Recent Adequacy Case	Did the final court decision side with the state?	Was there an adequacy study? Who initiated it?
Texas	Yes	West-Orange Cove ISD v. Neely (2004)	No. It is now being appealed.	Outside initiation, 2004
Utah	No	NA	NA	No
Vermont	No	NA	NA	State initiated, 2004
Virginia	No	NA	NA	No
Washington	Yes	Seattle II v. State (early 1980s)	No	Outside initiation, 2007 Outside initiation, 2006 Outside initiation, 2003
West Virginia	No	NA	NA	No
Wisconsin	No	N/A	N/A	Outside initiation, 2007 Outside initiation, 2002
Wyoming	Yes (2)	Campbell County School District v. State (1995, 2001)	No. In the second case the courts found that the changes made after the 1995 case were sufficient.	Court ordered, 2005 Court ordered, 1997

Tennessee's BEP formula is considered a foundation program in which a certain amount of funding is required from local sources and the state provides the rest.

PLACING TENNESSEE IN A NATIONAL CONTEXT

School finance reform lawsuits, or threats thereof, have caused many states to revamp their school funding mechanisms, leading to an array of different funding programs. Each state runs their program a little differently, and many vary in quite significant ways. Throughout the changes, there remain four primary types of school finance systems that are used to calculate state funding for public schools across the country (Verstegen, 2001).

Flat Grant Program. State aid is distributed based on the number of students enrolled. This method does not consider attendance or the amount of revenue raised by local levels of government. Districts receive a certain amount of funding on a per pupil basis. Flat grant programs provide a single, flat, basic level of school funding.¹⁰

Foundation Program. Under a typical foundation program, the state sets both a minimum local tax rate that must be charged to local residents, and a minimum spending level (known as the foundation amount). The state provides funding to make up for any shortfall between the revenue collected using the minimum tax rate and the expenditure required to reach the foundation amount. Local school districts can choose to set rates higher than the required minimum, and can therefore spend above the required foundation amount.

Full State Funding. State revenue is distributed to school districts in equal per pupil amounts. Under full state funding there are no local-level taxes used to fund education, all revenues supporting public education are collected at the state level. Under full state funding local school districts are not allowed to spend additional money above what is provided by the state on public education.¹¹

District Power Equalizing Program. District power equalizing plans are primarily products of the modern school finance reform

¹⁰The state of Virginia still finances their public school systems with a flat grant structure. A court challenge to this system in 1991 held it to be constitutional. No other state currently uses a flat grant structure.

¹¹Hawaii currently uses full state funding. Hawaii consolidated all public schools into a single school district in order to make the funding process smoother.

lawsuits. Many state courts have required such programs be put into effect. These wealth equalization programs focus on the district's *ability* to pay for public schools. It is based on the wealth neutrality principle which states that the quality of a child's education should not depend on the wealth of the district in which the child resides. Instead, the quality level of education provided should be based on the overall wealth status of the state. Power equalizing programs typically provide a guaranteed tax base per pupil across the state. This equalizes the ability to pay for education, but does not attempt to equalize district spending on education. Power equalizing programs tend to increase spending equity overall, but relatively large variations in spending can still exist.¹²

All states in the U.S. currently have programs that fall into one or more of the program categories listed above. Some states have combined funding methods and have created hybrids. For example, the state could provide a flat grant to all districts in addition to the funding provided through the foundation program. The most common combination of programs includes foundation grants along with a power equalizing program. These programs are generally known as modified foundation programs. Many states now have two-tiered programs in which the foundation grant is given in the first tier and counties are equalized (typically based on assessed property valuation) in the second tier. Leyden (2003) examines how states choose between program types. He concludes that when a court finds a state's funding structure to be unconstitutional due to equal protection arguments, the state legislature is more likely to prefer a power equalizing scheme than a foundation grant program. Conversely, when a state's structure is found to be unconstitutional because it is not "thorough and efficient," the legislature will be more likely to prefer a foundation grant system over a power equalizing scheme.¹³

¹²It is important to note that power equalizing programs are very similar to foundation program systems that set a minimum tax rate. The primary difference is that power equalizing programs typically set a minimum tax *base* per pupil rather than a minimum tax *rate*.

¹³The basis for a lawsuit that a state faces depends on the structure of the state constitution. Some constitutions contain a clause that states that the level of education provided must be "thorough and efficient." Other states' constitutions contain an equal protection clause through which cases can be filed based on distributive justice arguments.

Power equalizing programs are more likely to achieve equity for taxpayers than for students.

Handbook of Finance
(Thompson & Green, 1998)

Table 6 presents the current breakdown of school finance programs across the U.S. as of 2007. Several variables are presented including: type of program, primary source(s) of state education revenue, units of allocation used in the state's formula, and the method by which local fiscal capacity is measured. Nearly all U.S. states now have a school finance formula that at least partially accounts for wealth differences across the state.

TABLE 6: Type of Funding Mechanism by State

State	Type of Program	Primary Revenue Sources	Allocation Units	Local Fiscal Capacity
Alabama	Foundation	Income, sales, and state property tax	Teacher unit (students are counted using ADM)	Assessed Property Value
Alaska	Foundation	Federal grants and petroleum-related revenues	ADM	Equalized assessed real and personal property valuation plus the district's PL 81-874 grant.
Arizona	Foundation	Sales and income taxes, income from state land	Weighted ADM	Assessed Property Value
Arkansas	Foundation	Sales and income taxes	ADM	Assessed property value (assessed at 20% of appraised value of real, personal, and utility property).
California	Foundation program with a flat grant base	Sales and income taxes	Average Daily Attendance	District revenue limits (the amount of general revenue the district may receive per ADA in a given year) are based on historic district expenditure patterns with increases inversely related to the level of the revenue limit.
Colorado	Foundation	Income and sales taxes and school land and mineral lease revenues	Student enrollment on October 1st	Assessed property valuation and vehicle ad valorem revenues
Connecticut	Foundation	Income, sales, and business taxes	Needs Student: Weights students based on poverty, number of english language learners, students in free summer programs, and student test results	Town wealth per capita calculated by adjusting assessed property valuation by town income

TABLE 6: Type of Funding Mechanism by State (continued)

State	Type of Program	Primary Revenue Sources	Allocation Units	Local Fiscal Capacity
Delaware	Combination of flat grant and equalization	Individual income tax, license fees, and corporation charges	Student membership as of September 30th	Assessed property value
Florida	Highly modified foundation program	Sales tax and lottery revenues	FTE students based on ADM	Equalized assessed property valuation
Georgia	Foundation program with a guaranteed yield component	Income and sales taxes and lottery revenues	Weighted FTE students (count is taken twice a year)	Equalized assessed property valuation
Hawaii	Full state funding	General excise tax and income tax	none	none
Idaho	Foundation	Income and sales taxes and public school endowment fund	Districts' best 28 weeks of ADA	Equalized assessed property valuation
Illinois	Foundation	Income and sales taxes, lottery revenue	Average Daily Attendance: Districts can use the highest three months from the previous school year	Equalized assessed property value based on one-third of market value
Indiana	Guaranteed tax base	Sales and income taxes	Pupil enrollment measured on a single day each year	Assessed property valuation, auto excise tax, and financial institutions tax distributions
Iowa	Foundation program with a second local discretionary tier	Sales and income taxes and revenues from the sale of state motor vehicle tags	Weighted enrollment measured in September of the prior year	Equalized assessed property value (if districts participate in the second tier, a surtax on state income tax paid may also be used)
Kansas	Foundation	Income and sales taxes	FTE enrollment as of September 20th (or the first school day afterwards)	Proceeds from the district's property tax levy, unexpended general fund balances, unexpended balances in the program weighted funds, amounts credited to the school district general fund from industrial revenue bonds and port authority bonds, motor vehicle tax receipts, mineral production tax receipts, and rental vehicle excise tax receipts

TABLE 6: Type of Funding Mechanism by State (continued)

State	Type of Program	Primary Revenue Sources	Allocation Units	Local Fiscal Capacity
Kentucky	Foundation	Income and sales taxes	Prior year ADA	Assessed property and motor vehicle value plus tax revenues from motor vehicles and other permissive taxes: utility gross receipts tax, income tax surcharges, and occupational license tax
Louisiana	Foundation	Income and sales taxes	Weighted membership as of October 1st	Combination of property tax and sales tax information utilizing an adaptation of the Representative Tax System (RTS) approach. This measure multiplies the state average rates for sales and property taxes times each district's sales and property tax bases.
Maine		Income and sales taxes	Average of two enrollment counts (one in April and one in October) plus the number of students being educated elsewhere at the expense of the district	Average of the equalized assessed value of all real and personal property during the past two years and median household income of the school district two years prior
Maryland	Foundation and standards-based program	Sales, income, and cigarette taxes	Enrollment as of September of the previous school year plus the number of FTE students enrolled in evening high school	The sum of assessed real property, 50% of assessed personal property, and net taxable income
Massachusetts	Foundation	Income tax, sales tax, and lottery revenues	Count of pupils weighted by grade, low income, and specialized programs	Equalized property valuation and per capita income
Michigan	Foundation	Income, sales and property taxes	Count of pupils: 40% of the count taken in February of the prior year and 60% of the count in September of the current year	Taxable value of non-homestead property for base millage. For "hold harmless" millage, mills may be assessed on homestead property if necessary to raise revenue.

TABLE 6: Type of Funding Mechanism by State (continued)

State	Type of Program	Primary Revenue Sources	Allocation Units	Local Fiscal Capacity
Minnesota	Foundation	Income, sales, and gross receipts taxes	Weighted ADM	Equalized assessed property value
Mississippi	Foundation	Sales tax and General Fund	Average Daily Attendance	Assessed Property Value
Missouri	Foundation	Sales and income tax	Eligible Pupil Count: ADA for the regular term and two times ADA for summer school	The tax on locally assessed property, the intangible tax on financial institutions, and an average of school district tax rates within a county applied to the assessed valuation of railroads and utilities
Montana	Foundation and guaranteed tax base	Property tax and revenues from school trust lands	Average Number Belonging: Average of two enrollment counts taken in October and February	Equalized assessed property valuation
Nebraska	Foundation	Income tax	ADM plus students for which the district pays tuition to another district or agency	Equalized assessed property valuation plus other revenues, including allocated income tax funds
Nevada	Foundation	Property, sales and income taxes, a federal mineral land lease, and a slot machine tax	Weighted count of pupils enrolled on the last day of the first month of the school year	Equalized assessed property value plus sales tax receipts
New Hampshire	Foundation	Property tax	Weighted pupil count	Assessed property valuation, school tax rate, and personal income
New Jersey	Foundation	Income and sales taxes and lottery revenues	Weighted pupil count	Equalized property valuation and the aggregate personal income
New Mexico	Foundation (full state funding)	Income tax, gross receipts tax, lottery revenue	FTE	Equalized assessed property value based on one-third of market value plus other local tax revenue
New York	40 different programs of varying types	Income and sales taxes and lottery revenues	Weighted ADA	Assessed property valuation and adjusted gross income of the district

TABLE 6: Type of Funding Mechanism by State (continued)

State	Type of Program	Primary Revenue Sources	Allocation Units	Local Fiscal Capacity
North Carolina	Foundation	No tax revenue is earmarked. Revenue comes from the General Fund (income, sales, etc.).	Average Daily Membership (higher of last year or projected current year)	Assessed Property Value
North Dakota	Foundation	Sales, income, and severance taxes	ADM (higher of last year or current year fall enrollment)	Basic support program includes a "deduct" of the revenue generated by a 32-mill levy in each district. An additional deduction is applied if a district's general fund balance exceeds the allowable limit.
Ohio	Part I of the basic support program is a foundation grant. Part II of the program is a categorical grant program.	Income and sales taxes and lottery revenues	The higher of current year ADM or the average of the past three years	Assessed property value and district income
Oklahoma	Foundation program and a modified guaranteed yield program	Income, sales, and licensure taxes	Weighted ADM	Assessed Property Value
Oregon	Foundation	Income tax, lottery revenues, and land management grants	Weighted ADM	Equalized assessed property value plus timber revenue, federal aid, and other revenue sources
Pennsylvania	Percent-equalized foundation program	Income and sales tax	ADM	Market Value/Personal Aid Ratio: Two years prior market value of district property divided by two years prior district personal income
Rhode Island	Foundation program based on previous year funding	Income and sales tax	None - there is no formula	None
South Carolina	Foundation (Minimum Education Program)	Sales tax and lottery	Weighted ADM	Equalized Assessed Property Value
South Dakota	Foundation	Property, income, and sales taxes	ADM	Assessed property valuation

TABLE 6: Type of Funding Mechanism by State (continued)

State	Type of Program	Primary Revenue Sources	Allocation Units	Local Fiscal Capacity
Tennessee	Foundation	Sales tax	ADM	Local Fiscal Capacity Index: Depends on property and sales tax bases, ability to pay (i.e. income), resident tax burden, service responsibility, and local revenue for education
Texas	Tier 1 is a foundation program. Tier 2 is a guaranteed yield program.	General Revenue Fund: Sales tax, lottery revenues, additional tax revenues	ADA in Tier 1/ Weighted ADA in Tier 2	Taxable value of property
Utah	Modified foundation	Income tax	Weighted pupil count	Assessed property valuation
Vermont	Block grant and guaranteed yield with recapture	Property tax, recaptured funds, and lottery revenue	Weighted ADM	Assessed property valuation; Block grant is based on equalized per pupil amount
Virginia	Standards based foundation program	Income tax, sales tax, and lottery revenues	Average ADM for seven months prior	Composite Index of Local Ability to Pay: A measure of ability to pay that reflects the true value of real estate property (local property assessment amounts adjusted for actual sales to reflect true value of property), local taxable retail sales, and adjusted gross income as a proxy for all other local revenue sources
Washington	Full state funding	Property tax and renewable resource sales	Teacher unit (students are counted using FTE enrollment)	Certain local and federal revenue is equalized
West Virginia	Foundation	State sales tax, lottery revenue	Net enrollment (FTE counts) and adjusted enrollment (net enrollment plus special education students)	Taxable assessed property valued at 60% of market value
Wisconsin	Guaranteed Tax Base formula with three tiers of state sharing in school costs	Income and sales tax	Average of two enrollment counts (one in September and one in January) plus FTE in summer school programs the previous year	Equalized assessed property value
Wyoming	Foundation	State property tax, motor vehicle fees, recapture	ADM	Assessed Property Value

Tennessee's constitution requires the state to maintain and support a system of free public schools that provides **substantially equal educational opportunity to all students.**

TENNESSEE'S BASIC EDUCATION PROGRAM

In *Small Schools I*, the Tennessee Supreme Court ruled that the Tennessee Foundation Program resulted in significant disparities in school funding levels between districts and that these disparities violated the equal protection clause of the Tennessee state constitution. This finding led to the implementation of the BEP, which was enabled through the passage of the Education Improvement Act of 1992 (Public Chapter 535).

The Education Improvement Act of 1992 directed the Tennessee State Board of Education to “develop and adopt policies, formulas, and guidelines for the fair and equitable distribution and use of public funds among public schools and for the funding of all requirements of state laws, rules, regulations and other required expenses” (Tennessee Code Annotated § 49-1-302(a)(4)(A)). The BEP was the funding mechanism through which the state attempted to comply with this mandate. Funds provided to school districts through the BEP were divided between classroom and non-classroom components. The state provided 75% of classroom component costs and 50% of the BEP's non-classroom component costs.¹⁴ The local education agencies (LEAs) were responsible for the remainder of the funding.¹⁵

The BEP was phased in over a six-year period beginning in the 1992-1993 school year and reached full funding during the 1997-1998 school year. Tennessee's General Assembly increased the state sales tax rate from 5.5% to 6.0% in order to provide the additional funds for state education expenditures (Roehrich-Patrick and Green, 2003). BEP funding statewide in 1997-1998 totaled \$2.1 billion. The funding provided through the BEP has increased each year since its inception and provided \$2.9 billion during the 2005-06 school year. The institution of the BEP increased school spending substantially in Tennessee, although Tennessee still lagged most states with regards to K-12 funding. The program, however, was not without its controversies and weaknesses. The BEP, like

¹⁴In 2005 the state of Tennessee began to provide only 65% of the cost of instructional positions, but at a considerably higher salary. The state continued to fund 75% of other classroom components and 50% of non-classroom components.

¹⁵Local education agency is another phrase for school district.

most public school funding programs, came under great scrutiny in recent years.

Student enrollment, measured as average daily membership, was the driving force for the determination of costs under the BEP.¹⁶ These funds were deemed necessary by the state to provide a basic (though not necessarily *adequate*) level of education for its public school students. The calculated costs included both the state and local shares for classroom and non-classroom costs. A cost differential factor (CDF) was included in the formula to assist counties that confronted relatively high labor market wage structures, the presumption being that these counties faced a higher cost of delivering schooling services.¹⁷

The basic formula for determining costs under the BEP was as follows:

$$(1) \quad E_j = CDF_j * \left(\sum_{i=1}^I \tau_i * ADM_{ij} * c_i \right) + \left(\sum_{i=1}^I \lambda_i * ADM_{ij} * \gamma_i \right),$$

$$(2) \quad CDF_j = \frac{\omega_j}{\bar{\omega}},$$

where

E = Total district education cost

CDF = Cost differential factor

τ = Inputs eligible for CDF adjustment (e.g. personnel)

ADM = Average daily membership in district

c = Cost of inputs (τ) used

λ = Inputs ineligible for CDF adjustment (e.g. equipment)

γ = Cost of inputs (λ) used

ω_j = Weighted average wage in county private sector

$\bar{\omega}$ = 95th percentile of the state weighted average private sector wage

A cost differential factor was included in the BEP formula to assist school systems in high-wage areas with their higher service costs.

¹⁶ There are 45 separate components of the BEP, most of which are calculated using average daily membership.

¹⁷The CDF is discussed more thoroughly below.

One of the more controversial aspects of the BEP proved to be its use of county-level equalization calculations rather than equalizing at the district level.

These costs were then aggregated across all counties to yield total schooling costs. There were 45 cost components in the BEP (corresponding to the c_i in equation 1), most of which were determined by average daily membership.

Once schooling costs were determined, the next step was to identify the respective funding contribution of the state and school districts. The level of funding support provided to school districts via the BEP was calculated through the use of an equalization formula known as the Fiscal Capacity Index. This formula was calculated yearly by the Tennessee Advisory Commission on Intergovernmental Relations (TACIR) using a modified regression-based version of the representative tax system approach. TACIR defines fiscal capacity as “the potential ability of local governments to fund education from their own taxable sources, relative to the cost of their service responsibility” (Green et al., 2004). The Fiscal Capacity Index was based on regression analysis and was driven primarily by county income levels and sales tax collections.¹⁸ The calculation of the formula provided for some equalization across Tennessee counties, with counties with lower property tax or sales tax revenues receiving relatively more revenue per pupil from the state than counties with high levels of property and sales tax revenues.

One of the more controversial aspects of the BEP proved to be its use of county-level equalization calculations rather than equalizing at the district level. While most Tennessee school districts are coterminous with the county, there are a few school districts that are not. These districts are classified as special school districts, city systems, and partial county systems. In 2007 there were 67 school districts (out of 136 total school districts) that were coterminous with their county. There were an additional 69 school districts classified as special, city, or partial county systems. The BEP calculated funding of these non-county school districts based on county-level data. This is significant because city districts may have a very different fiscal capacity than the county as a whole. For example, Maryville City School District’s funding level per

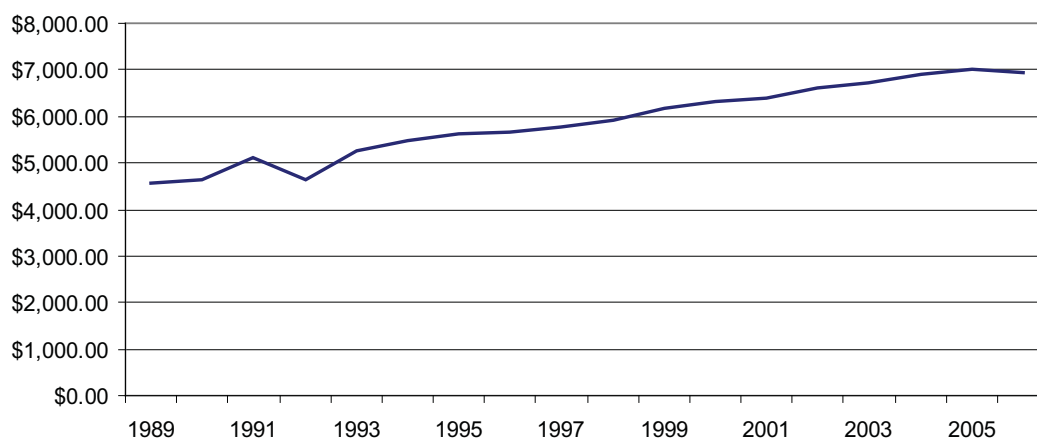
¹⁸Variables included in the regression analysis include local revenue used for education, ability to pay (based on per capita income), property and sales tax bases, resident taxpayer burden, and service responsibility (Green et. al, 2004).

pupil is based on the fiscal data for Blount County as a whole. Maryville City is significantly more affluent than Blount County, and therefore received more funding per pupil than they would if their funding was calculated separately. On the other hand, Blount County received lower funding per pupil than they would under a district-driven formula because the taxes collected within the Maryville City School District are included in their formula calculation. Unless the non-county school districts had characteristics identical to the county districts, there were differences in funding compared to a district-specific model.

THE BEP AND SPENDING EQUITY

A primary goal of the BEP was to lessen spending disparities that resulted from the varying distribution of wealth and thus tax capacity across school districts in Tennessee. Through the BEP there have been substantial increases in funding support for elementary and secondary education that have helped lift current per pupil spending. There is no question that the per pupil level of K-12 education spending in Tennessee increased between 1989 and 2006 as shown in Figure 2.¹⁹

FIGURE 2: Average Per Pupil Current Expenditure



¹⁹ All education spending data presented in this report is current education spending as reported by the State of Tennessee Department of Education in its *Annual Statistical Report* and are generally presented in per pupil terms, calculated using average daily membership. In addition, all figures have been adjusted for inflation using the Consumer Price Index and are presented using 2006 dollars. Current spending includes instructional, support services, operating and maintenance expenditures; current spending figures do *not* include capital spending on education.

Current spending and total revenue equity have been enhanced since implementation of the BEP.

The rising level of current spending says nothing about what happened to spending differentials across school districts following BEP implementation. To address this question, multiple measures of spending and revenue equity that have been utilized in the education finance literature are considered. Each measure has its own unique strengths and weaknesses, but together they can paint a fairly clear picture of what has happened to equity. Five equity measures are presented using inflation-adjusted district-level per pupil data from 1989 to 2006.²⁰

Measures of both *spending* equity and *revenue* equity across Tennessee school districts are examined.²¹ (Detailed tables showing the annual figures for the various equity measures are presented in the Appendix.) Revenue equity is presented in three ways. The first presents the measures of equity associated with *local* revenue sources, the second presents the measures associated with *state* revenue sources, and the third considers *total* revenue received by school districts. The general pattern that emerges from the data shows that current spending and total revenue equity have been enhanced since implementation of the BEP. The findings related to education spending equity are largely consistent with previous equity analyses conducted by TACIR.²² In what follows, these findings are drawn out using graphical analysis.²³

²⁰All equity measures presented here focus on variations across school systems rather than across pupils or individual schools. Current district expenditures per pupil are used to determine the level of spending. Data were collected from the Tennessee Annual Statistical Reports issued by the Tennessee Department of Education. All spending values used in the analyses are presented in real terms (2006 dollars) in order to extract the influence of inflation.

²¹As previously stated (see footnote 19), education spending is measured as per-pupil current education expenditures and does not include capital spending. Revenue is measured as total state, local, and federal revenue collected for K-12 schools as reported by the State of Tennessee Department of Education in its *Annual Statistical Report*. The *revenue* data include current revenue as well as some revenue collected for capital outlay; this does not account for all school construction spending. All figures have been adjusted for inflation using the Consumer Price Index and are presented using 2006 dollars. In most cases, revenue numbers have been transformed into per pupil terms using average daily membership.

²²The results in this analysis complement the findings in a previous report conducted by TACIR on equity between 1993 and 2003 (Roehrich-Patrick and Green, 2003). The exact figures presented in that analysis differ because all figures in this report are in real terms.

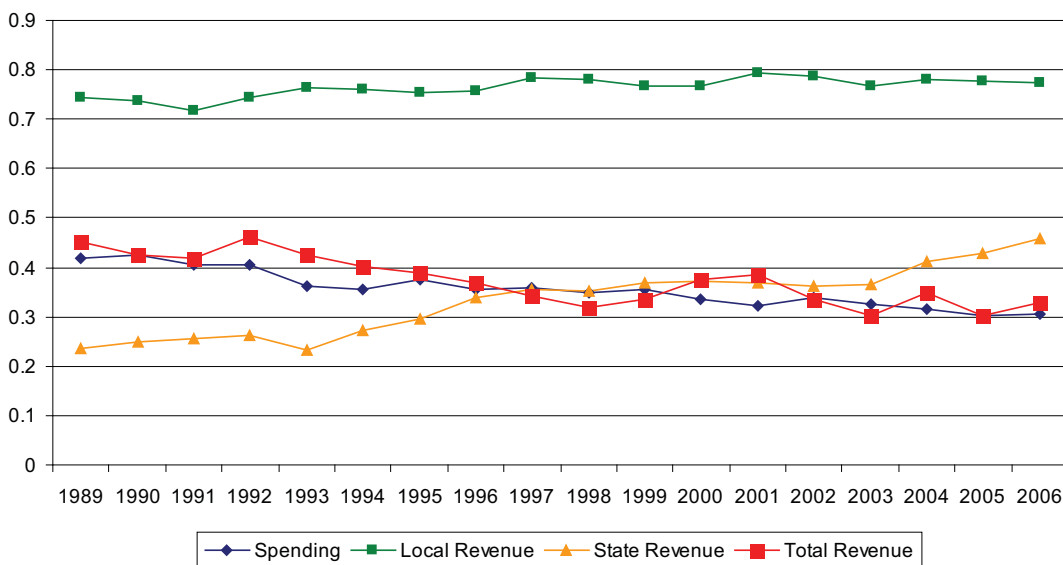
²³The Hamilton/Chattanooga, Roane/Harriman, and Tipton/Covington City schools systems were consolidated during the period of time considered in the analysis that follows. In the empirical applications they are consistently treated as being combined for the entire time period considered.

FEDERAL RANGE RATIO

The Federal Range Ratio is commonly used in education finance to study inequality in educational expenditures. It is calculated by dividing the difference between the expenditures for the student at the 95th percentile and the 5th percentile by the expenditure level for the student at the 95th percentile. The drawback of the range ratio is that it looks only at two distinct points and does not examine the entire distribution of spending.

Equity is said to increase as the Federal Range Ratio decreases. Figure 3 shows the spending and revenue equity measures. Both total revenue and state spending display declining range ratios over the time period shown although the pattern is not smooth. This shows that the gap between the 5th and 95th percentiles has become smaller over the 15 year time period analyzed. In contrast, the range ratio for state spending drifts up substantially over time indicating a widening gap in state spending across districts. This result is to be expected if state spending was being shifted toward relatively poorer school systems through the BEP and its companion fiscal capacity model. Local revenue shows a slight upward drift, though the pattern is not as strong as was the case for state revenue. The implication is a slightly widening disparity in the amount of local revenue used to support education.

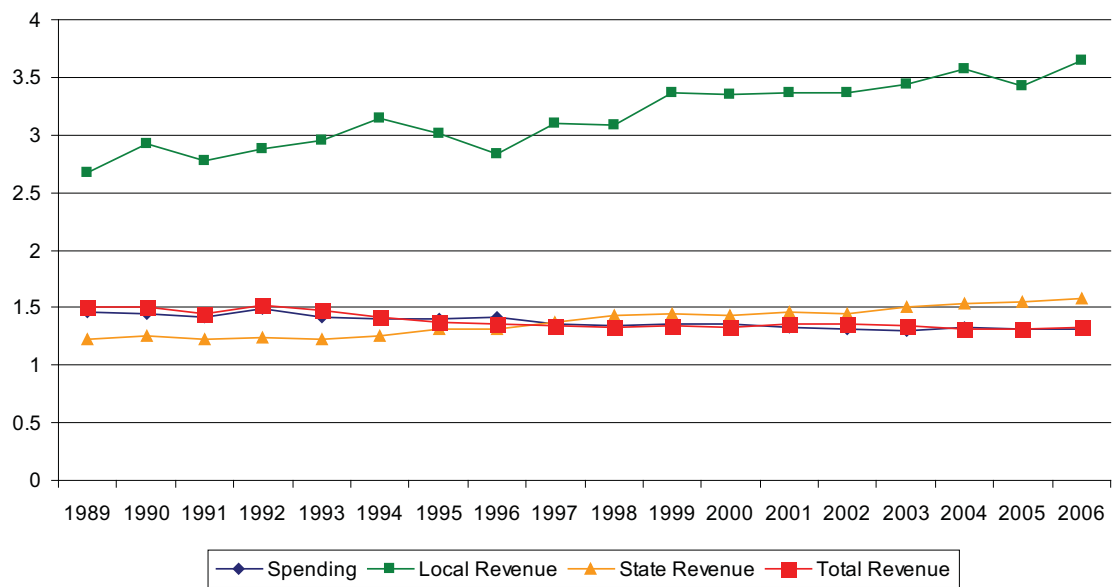
FIGURE 3: Federal Range Ratio



90/10 RATIO

The 90/10 Ratio is a simple calculation which divides spending levels observed at the 90th percentile by spending levels observed at the 10th percentile. Like the Federal Range Ratio, this measure examines only specific points in the distribution. Figure 4 shows that the 90/10 Ratio for total per pupil spending and total per pupil revenue has decreased over time, which translates to an increase in equity. Once again there is an increasing disparity in both state revenues and local revenues dedicated to education. The results can be interpreted analogously to those presented above for the Federal Range Ratio.

FIGURE 4: 90/10 Ratio

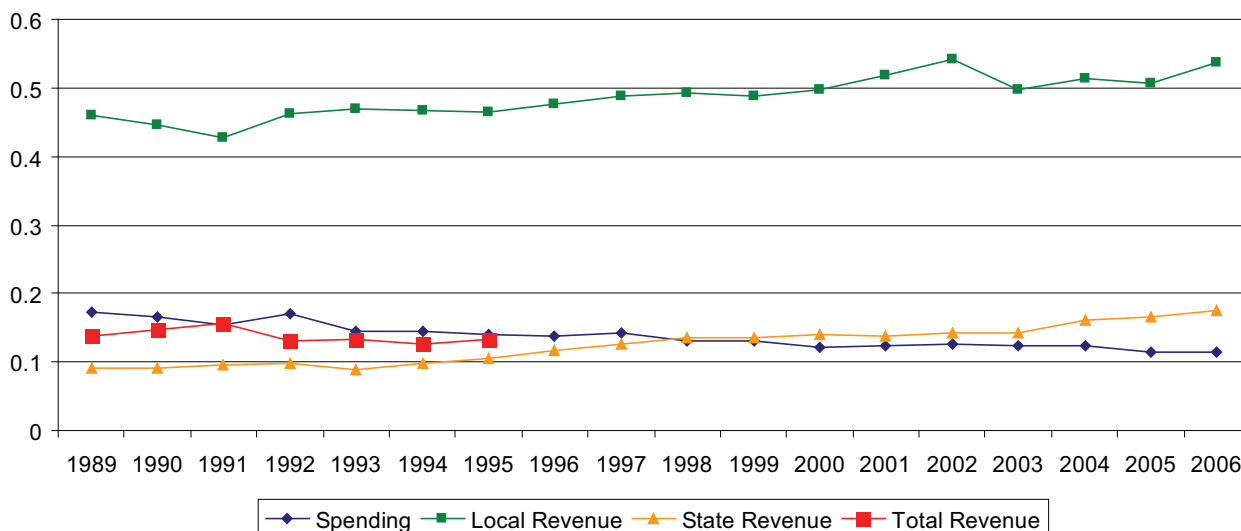


COEFFICIENT OF VARIATION

The coefficient of variation is the standard deviation of spending levels divided by the mean level of spending. If a distribution is tightly clustered around the mean the coefficient of variation will be small, while a distribution that is more dispersed will have a higher coefficient of variation. Figure 5 shows the calculated coefficients of variation from 1989 to 2006. The downward trend for total per pupil revenue and total per pupil spending indicates

that school finances in Tennessee have become more equitable. Like the 90/10 and Federal Range Ratios, the coefficient of variation indicates rising disparities in state and local revenues.

FIGURE 5: Coefficient of Variation



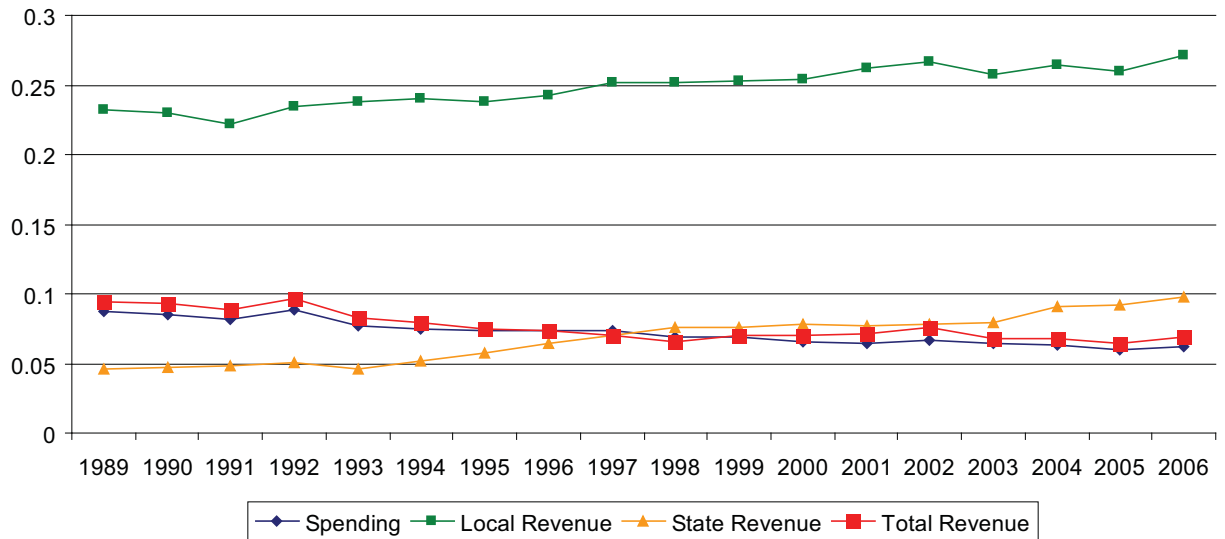
GINI COEFFICIENT

The Gini Coefficient is a much more complicated calculation than those previously presented. This coefficient is derived from the entire distribution of data. It differs from the coefficient of variation in that it does not put emphasis on the mean of the distribution. It gives each observation equal weight. The starting point for its construction is a Lorenz Curve that is formed by ranking all observations of school spending from lowest to highest and then plotting the cumulative proportion of the population on the X-axis and the cumulative proportion of school spending on the Y-axis.²⁴ The Gini Coefficient compares the area under the Lorenz Curve to the area corresponding to a uniform distribution that represents equality (along the diagonal). The Gini Coefficient is calculated as double the area between the equality diagonal and

²⁴For more information on the Lorenz Curve see <http://mathworld.wolfram.com/LorenzCurve.html>

the Lorenz curve and is bounded by zero and one. A value of zero represents perfect equality; therefore, the lower the Gini Coefficient value, the more equitable is the distribution. Similar to the previous equity measures, Figure 6 indicates increased spending and total revenue equity, and increased disparities in state revenues and local revenues during the period of analysis.

FIGURE 6: Gini Coefficient



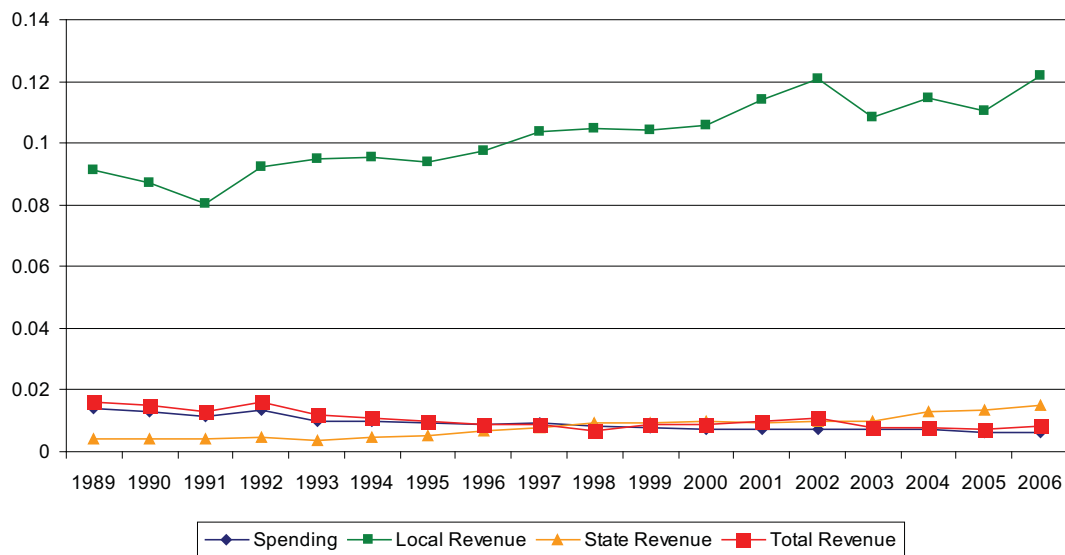
THEIL'S T-STATISTIC

Theil's T-Statistic is a complicated equity measure, but it is also more flexible than those presented above. It is especially useful in education spending analyses because individual spending data (e.g., the amount spent on each individual child) are typically not available and analysts must rely on aggregated average district spending data. Because individual student data are not available, Theil's T-Statistic is calculated using a between-district component and acts as the lower bound for total inequality. Theil's T-Statistic is different from the other measures in that it takes district size into consideration. For example, assume that all but two districts in Tennessee spend \$5,000 per student. The remaining districts (Davidson County and Lauderdale County) spend \$6,000 per student and \$4,000 per student respectively. Using the other

measures these two counties, each \$1,000 away from the mean, would be viewed the same regardless of district size.²⁵ When using Theil's T, the larger district would have more weight; therefore, if Davidson County spent \$6,000 per student and Lauderdale County spent \$4,000 per student, Davidson County would receive more weight and the distribution would be considered less equal than it would have been using the other measures.

The calculated Theil's T-Statistics are presented in Figure 7. As with most of the other measures of equity, a lower value of Theil's T-Statistic is associated with a higher level of spending equity. The results mirror the findings for the other equity measures.

FIGURE 7: Theil's T-Statistic



All five equity measures calculated show an increase in total per pupil revenue and current per pupil spending equity over the 15 year period of analysis. All of the measures also point to a rising disparity in local revenues used to support education. These disparities may be caused by changes in local tax effort, changes in capacity, or some combination of the two. These rising

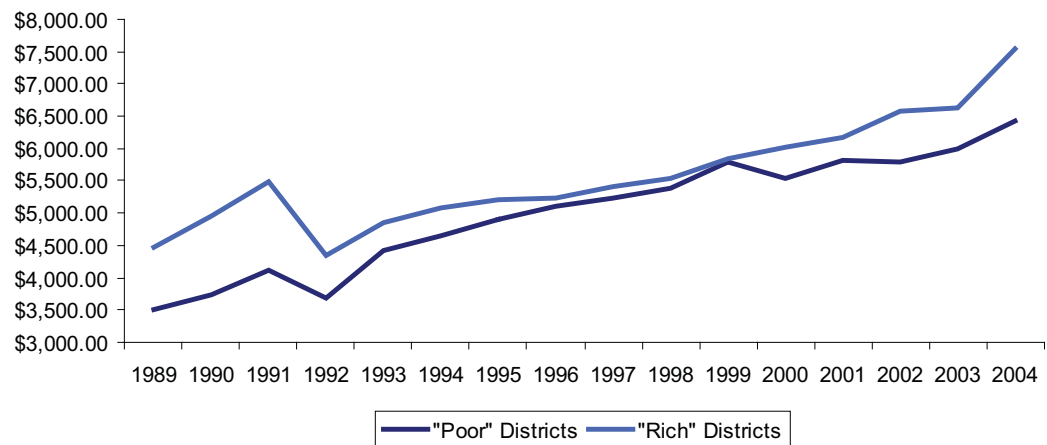
²⁵In 2006, Davidson County had 71,464 students in ADM while Lauderdale County had 4,479 students in ADM.

disparities have not been large enough to offset the rising disparity in state funding which has increased the state's contribution to poorer districts. At the same time, they have certainly dampened the overall gains in spending and total revenue equity.²⁶

"RICH" VS. "POOR" DISTRICTS

This section takes a complementary look at the question of equity by examining spending patterns in "rich" versus "poor" counties and the school districts within those counties. Poor districts are defined here as districts for which *county* real per capita income falls at or below the 10th percentile. Rich districts are defined as districts where real per capita *county* income falls at or above the 90th percentile. Figure 8 presents average per pupil spending in rich districts and poor districts for 1989-2004.²⁷ County income data are used here because city income figures are not available.

FIGURE 8: Average Real Spending Per Pupil

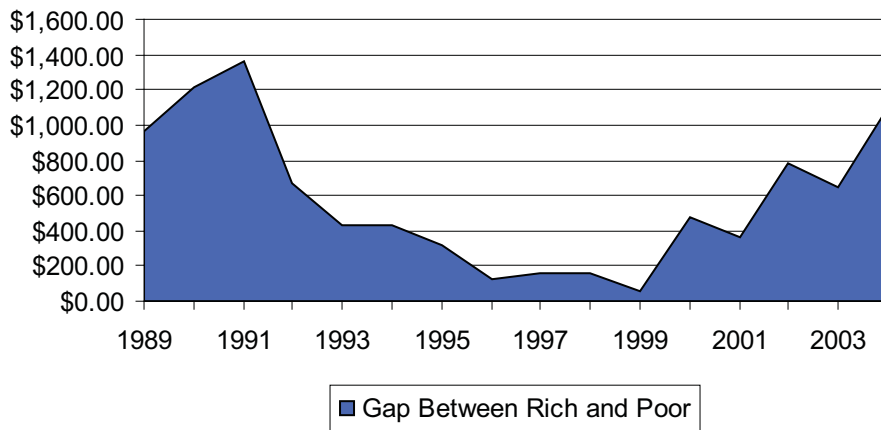


²⁶The McLoone Index, another equity measure commonly used in the education finance literature, was also calculated. This index was found to be inconsistent, with sharp movements up and down over time. The McLoone Index is calculated by examining only the bottom half of the spending or revenue distribution, ignoring 50% of the data; therefore, the index would not show any difference between a distribution where spending was clustered tightly around the median and a distribution where some districts had spending levels significantly above the median level. This can lead to problematic results, and therefore the index has been excluded.

²⁷2004 is the most recent year in which per capita income data are available.

Several interesting patterns emerge. First, the initial phase in of the BEP beginning in the 1992-1993 school year appears to have significantly lessened the gap between current spending in poor and rich districts (measured using county per capita income). Second, the gap seems to have widened again beginning in the 1999-2000 school year, with rich districts showing a sustained spending trend while spending in poor districts declined. Figure 9 shows the actual amount of the gap (measured in real terms) between the rich and the poor districts. The gap reaches its lowest level in the year following the full funding of the BEP. After the 1998-1999 school year, the gap begins to widen again.

FIGURE 9: Gap Between Rich and Poor



A careful review of the equity measures previously presented indicates an increase in local revenue disparities around 1999 for the 90/10 Ratio, the coefficient of variation, the Gini Coefficient, and Theil's T-statistic. At the same time there appear to be no significant changes in the other indexes. Thus one explanation of the trends shown in Figure 9 is that local revenue in poor districts slowed around 1999 while spending in rich districts was sustained.

COMPARISON OF "POOR" DISTRICTS OVER TIME

The list of poor districts does not remain constant over time. Some counties have seen significant growth in income over the 15 year period of analysis while other counties have experienced sluggish growth. Table 7 shows poor districts whose per capita income

TABLE 7: Districts in Counties with per Capita Income at or below 10th Percentile

1988-1989	2003-2004
Campbell County	Cocke County
Chester County	Hancock County
Fentress County	Hardeman County
Grundy County	Hickman County
Hancock County	Johnson County
Johnson County	Lake County
Lake County	Morgan County
Morgan County	Newport City
Oneida City	Oneida City
Overton County	Pickett County
Scott County	Scott County
Union County	Union County
Van Buren County	Wayne County

was at or below the 10th percentile in 1989 and again in 2004. Districts that are in both lists are shown in bold.

The counties that were considered to be the poorest in 1989 that were no longer on the list in 2004 obviously grew at a faster rate during that period than some of the other poor counties in Tennessee. Figure 10 shows the growth rates in per capita income between 1989 and 2004 for both groups shown previously in Table 7. The poorest counties in 1989 had a higher rate of per capita income growth beginning in 1991 which was sustained until 2004.

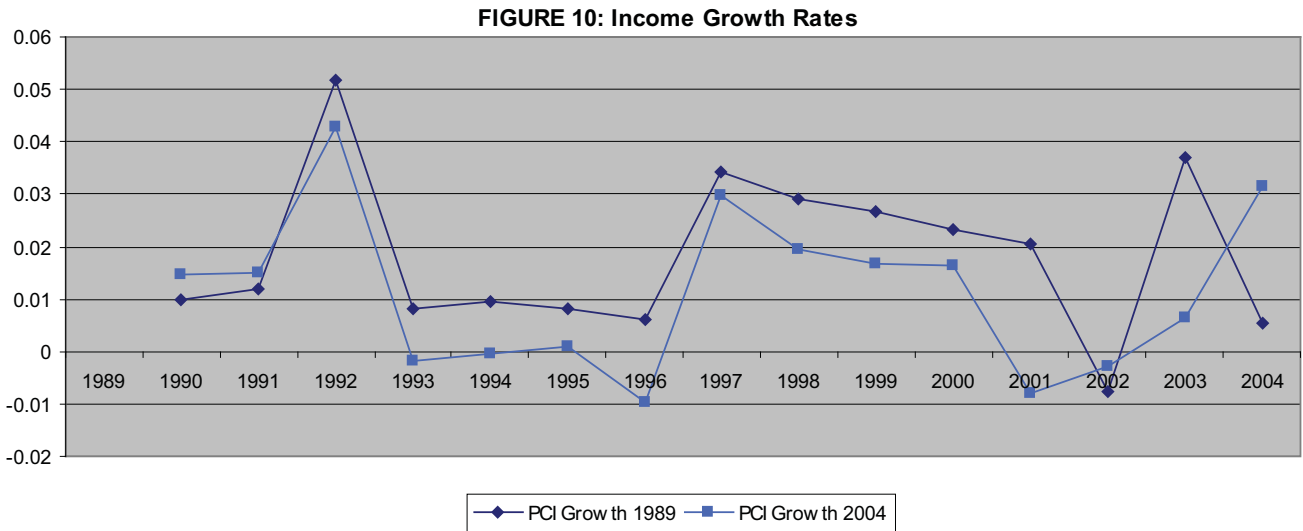
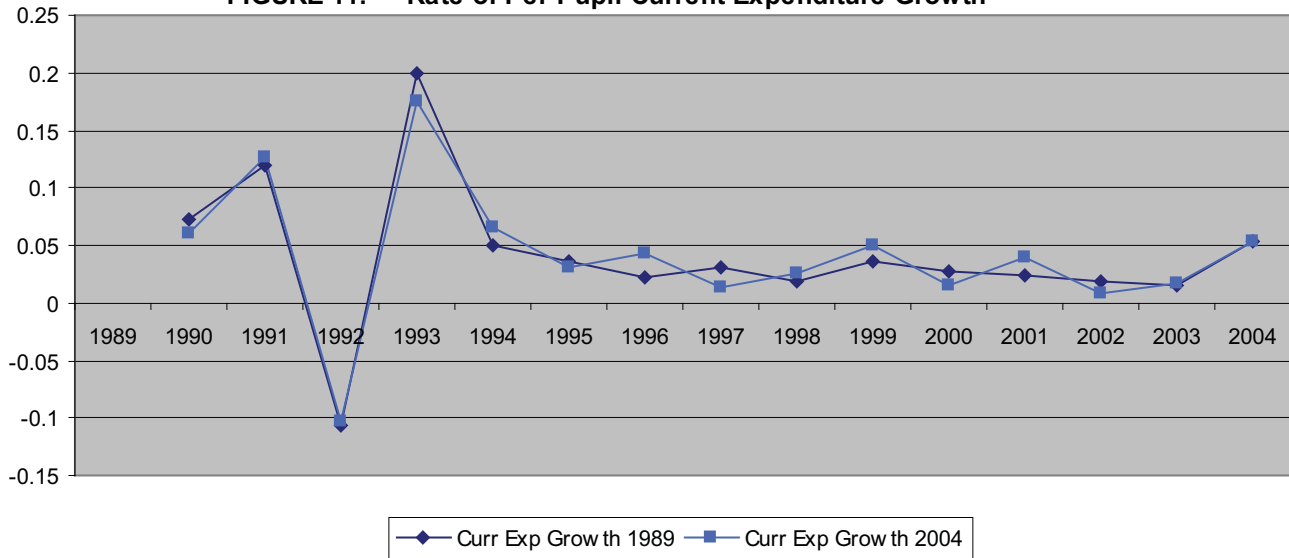


Figure 10, which shows the two groups of poor counties, leads to an interesting question. How did the districts in these counties respond to the new increased growth in income? Did they increase education expenditures at the same rate? Figure 11 shows the rate of per pupil current expenditure growth for the same two groups of districts. There appears to be no clear pattern with regards to the growth of education expenditures. Although the income levels for the districts that were poor in 1989 grew at a faster rate than the income levels for the districts that were poor in 2004, those districts did not consistently increase education expenditures at a higher rate. This is likely due to the “taste” for education in those districts. If a district has a relatively low taste for education, a large increase in per pupil expenditures would not be expected even with a significant increase in per capita income.

FIGURE 11: Rate of Per Pupil Current Expenditure Growth



Another question emerges related to the income levels of Tennessee school districts. Specifically, do the poorest districts in Tennessee have the lowest levels of per pupil spending? The short answer to this question is no.²⁸ The school districts in Tennessee with the lowest levels of current per pupil spending do not necessarily have extremely low levels of income. As a matter of fact, rarely do they have the lowest levels of spending. Table 8 presents the list of school districts in which spending is at or below the 10th percentile in both 1989 and 2004. These lists can easily be compared to the lists presented previously in Table 7. Districts that appear in both lists, in other words those that are considered poorest and have the lowest levels of spending, are shown in bold type. Interestingly, none of the school districts in which spending levels ranked in the bottom 10th percentile in 2004 also ranked in the bottom 10th percentile in county per capita income.

TABLE 8: School Districts with Spending at or below 10th Percentile

1988-1989	2003-2004
Alamo City	Bedford County
Bledsoe County	Bradford Special SD
Chester County	Bradley County
Dayton City	Chester County
Dekalb County	Gibson Co. Special SD
Grainger County	Hollow Rock-Bruceton
Lewis County	Lewis County
Macon County	Macon County
Oneida City	McKenzie Special SD
Richard City Special SD	Smith County
Smith County	South Carroll County
Tipton County	Trousdale County
Union County	White County

²⁸Since city-level data on per capita income are not available, this analysis relies on county income figures. The discussion in the text must be tempered by the fact that there are differences in income across cities and school districts within counties.

Tennessee requires school systems to maintain effort (local revenue) in the aggregate, but growth in enrollment can still cause revenue per pupil to decline.

THE SCHOOL DISTRICT RESPONSE TO BEP FUNDING

Tennessee phased in BEP funding over a six-year period beginning in the 1992-1993 school year and ending with the 1997-1998 school year. In addition to the phase in of funds, the class size restrictions implemented via the Education Improvement Act became binding at the end of the phase-in period. During the phase in, districts had considerable flexibility in responding to the new class size requirements. They could have chosen to comply immediately with this new mandate, or they could have delayed compliance until the end of the phase-in period. This section of the report examines the way in which BEP grants affected overall spending and local support for education.

School districts necessarily expend all funds received through the BEP in support of local education. Absent a maintenance of effort requirement, it is conceivable that a recipient district might simply reduce own-source commitments toward education by the amount of the BEP grant. Tennessee's maintenance of effort requirement ensures that school systems at least maintain their *overall* level of *nominal* spending for education. Over time, however, school districts might choose to reduce their own-source funding for elementary and secondary education, insofar as they can avoid running afoul of the maintenance of effort requirement. In other words, the state grant may free up own-source revenues that could be used to reduce local tax burdens or used to support spending in other categorical areas outside education. Indirect evidence of this type of response would be slower growth in local contributions to fund education after passage of the BEP.

The phenomenon described here is one aspect of what has been called the "flypaper effect."²⁹ According to the flypaper effect,

²⁹The flypaper effect reflects the finding in the empirical literature that a grant "sticks" in a local government budget, generally stimulating more spending than if the recipient jurisdiction received more household income. For example, state and local government spending in the U.S. represents about 11% of personal income. So, if people earned an additional dollar of income, about 11 cents would be used to support state and local government spending. There is extensive empirical research showing that if states and localities received a one dollar grant, they would spend only 25-50 cents of the grant on public services. The empirical literature consistently finds that the amount of spending stimulated falls short of the amount of the grant but exceeds the increase in spending that would be expected from simply more household income. See Fisher (2007) for a discussion of the flypaper effect.

the receipt of a grant will increase overall spending by an amount greater than zero but less than the full amount of the grant. For example, if Tennessee were to give a school system a grant of \$5 million, the system would certainly spend the entire proceeds of the grant. At the same time, the overall increase in spending—including state and local funds—would likely be less than \$5 million, especially over time when districts have an opportunity to change their spending commitments. As noted above, Tennessee’s maintenance of effort requirement restricts a district’s ability to decrease *total nominal* revenue unless enrollment has declined; however, per pupil revenue and real revenue (i.e. revenue adjusted for inflation) could be decreased while staying in compliance with the maintenance of effort requirement.

The following example, using actual data from two Tennessee school districts, shows how this can happen.

	Year	Nominal Local Revenue	Real Local Revenue	Enrollment	Nominal Local Revenue Per Pupil	Real Local Revenue Per Pupil
District 1	2000	\$9,406,581	\$11,013,478	6,122	\$1,537	\$1,799
	2001	\$9,596,326	\$10,923,594	6,182	\$1,552	\$1,767
District 2	2005	\$19,828,529	\$20,469,440	6,805	\$2,914	\$3,008
	2006	\$20,011,345	\$20,005,974	6,882	\$2,908	\$2,907

This example shows two Tennessee school districts, selected at random, whose per pupil real revenues decreased from one year to the next. This is not an isolated phenomenon. Between the 2004-2005 and 2005-2006 school years, 63 of the 136 Tennessee school districts had *decreases* in locally provided *real* revenue per pupil. This may have occurred in three different ways even as districts satisfied the maintenance of effort requirement. First of all, locally provided real revenues may have grown, but at a rate slower than enrollment. Secondly, school districts could have chosen to increase nominal spending by an amount less than inflation. For example, if nominal revenues were increased by 1.5% and the consumer price index grew by 2.0%, then real revenues would have decreased for that year by 0.5%. Thirdly, districts may have been allowed to reduce revenue provision due to falling enrollments.

Tennessee state law allows local revenue per pupil to decline over time.

Because the BEP began as a remedial program, declines in local revenue per pupil should be expected, especially in high effort/low capacity school systems as the state began to take on a larger role in funding education.

The maintenance of effort requirement in Tennessee allows for real decreases in revenues from year to year because it requires maintenance of *nominal revenue* rather than maintenance of real revenues or tax effort. The amount of the state grant that is passed on to increase education spending beyond the nominal amount dedicated to education in the previous year is chosen by the local school district and the local government that governs the school district. Variation would be expected across school districts as different districts have different tastes for education. The higher the taste for public education, the higher the percentage of the grant that “sticks” (i.e., the greater is the flypaper effect).

If school spending in real terms does not rise commensurate with the value of the BEP grant, what are the consequences? There are two possible responses. First, school districts may have over time chosen to decrease their local tax effort in response to the influx of new state funds. In practice this means that local governments may have reduced taxes or allowed taxes to grow at a slower rate than otherwise would have been the case so that real local revenue or local revenue per student—or even both—may have declined. Second, districts may have maintained their local tax effort while over time diverting some grant proceeds to support other spending needs with the same result. For example, they may have indirectly used a portion of the grant to support the local parks and recreation budget.³⁰ Of course no local system simply diverted BEP funds in this overt fashion. But the BEP grant, all of which would be necessarily spent on education, would have effectively freed up own-source revenue to fund other locally-

³⁰The flypaper effect is admittedly a complicated if not confusing concept. Consider a very different kind of problem than that portrayed in the text, specifically the provision of food stamps to low income households. How might food stamps—a type of grant—affect the household? The household would presumably spend all of the food stamp grant on food, just as local school districts would spend all of their BEP grant. But what happens to *total* spending on food? In all likelihood, total spending on food will increase, consistent with the flypaper effect. At the same time there is a strong possibility that total spending (inclusive of what was spent before food stamps) will not rise by the full amount of the food stamp grant. In other words, the household may find that food stamps free up purchasing power that can be used to purchase other things that the household values. It is even conceivable that the food stamp grant lowers the household’s work *effort*. The reason is that members of the household no longer need to work as hard to buy the same amount of food and other goods and services.

provided services or provide tax relief to the extent allowed by the maintenance of effort requirement.

These possible responses are complicated further by the phase in of BEP funding. Local school systems did not need to meet classroom size constraints until four years after the BEP was fully funded. Contingent on satisfying maintenance of effort requirements, it is possible that tax effort was weaker in the earlier years of the phase in as opposed to when the BEP was fully funded and local districts faced higher spending needs. Similarly, if local districts did not continue to support their schools with the same tax effort, local funds might have been diverted to other spending programs in the early years of the phase in, again contingent on satisfying the maintenance of effort requirement. Any uncertainties at the local level about whether the state would stick with the rules it created for the year of full funding and beyond may have increased the propensity to reduce tax effort and/or to reallocate spending and enjoy short-term relief. It is also possible that districts maintained effort to avoid the possibility of having to raise rates later should the state have not fulfilled its commitments. Some local officials probably thought the state would rescind the full funding requirements, especially in the early years of the phase in.

Average per pupil current spending amounts in Tennessee during the phase-in period are shown in Table 9. All of these figures have been adjusted for inflation using 2006 dollars. Between the 1991-1992 and 1998-1999 school years, per pupil current expenditures increased by

TABLE 9: Average Per Pupil Spending During Phase-in Period

Year	Current Per Pupil Spending	Growth in Per Pupil Spending
1992	\$4,272.45	-10.6%
1993	\$4,953.21	15.9%
1994	\$5,232.03	5.6%
1995	\$5,391.87	3.1%
1996	\$5,419.80	0.5%
1997	\$5,491.86	1.3%
1998	\$5,643.49	2.8%
1999	\$5,872.02	4.0%

37.4% in real terms. This is a substantial increase that can be attributed in large part to the implementation of the BEP in 1993; however, the fact that overall expenditures increased does not mean that local districts sustained their funding support. In the spirit of the flypaper effect as discussed above, it is likely that the

increase in state funding allowed local districts to reduce their tax effort and/or reallocate funds to non-school spending programs.

Table 10 presents local property tax effort during the phase-in period.³¹ There was a steady decrease in property tax effort throughout the phase-in period. Between the 1992-1993 school year, the first year of the phase in, and the 1997-1998 school year, the first year that the BEP was fully funded, property tax effort decreased by 12.2%.

TABLE 10: Local Property Tax Effort During Phase-in Period

Year	Property Tax Effort
1992	1.061
1993	1.052
1994	1.040
1995	1.034
1996	1.000
1997	0.967
1998	0.932

Table 11 shows the breakdown of per pupil revenues received from state, local, and federal sources throughout the phase-in period.³² The year before the beginning of the phase-in and the year after the phase-in was complete have been included in order to analyze the full impact of the phase-in period. The impact of the introduction of the BEP can be seen easily by the tremendous increase in state-provided funds in 1992-1993.³³ The real growth rate for state public education funds was 31.3% between 1991-1992 and 1992-1993. The growth rate for state funds continued to outpace both federal and local funding during the entire phase-in period, with the exception of 1995-1996. Between 1991-1992 and 1998-1999, overall education revenues in Tennessee increased by 43.9% in real terms.

TABLE 11: Per Pupil Revenue Received from State, Local, and Federal Sources During Phase-in Period

	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999
State Funds per Pupil	\$2,049.38	\$2,691.02	\$2,922.12	\$3,126.79	\$3,204.77	\$3,368.14	\$3,582.10	\$3,657.01
Growth Rate		31.31%	8.59%	7.00%	2.49%	5.10%	6.35%	2.09%
Local Funds per Pupil	\$1,829.81	\$1,829.53	\$1,865.27	\$1,879.65	\$1,936.98	\$1,965.29	\$2,015.76	\$2,132.11
Growth Rate		-0.02%	1.95%	0.77%	3.05%	1.46%	2.57%	5.77%
Federal Funds per Pupil	\$580.90	\$600.06	\$591.85	\$566.92	\$550.85	\$564.34	\$621.56	\$626.76
Growth Rate		3.30%	-1.37%	-4.21%	-2.83%	2.45%	10.14%	0.84%
Total Funds per Pupil	\$4,460.09	\$5,120.61	\$5,379.24	\$5,573.36	\$5,692.60	\$5,897.77	\$6,219.42	\$6,415.88
Growth Rate		14.81%	5.05%	3.61%	2.14%	3.60%	5.45%	3.16%

³¹Property tax effort is calculated as property tax revenue divided by the property tax base. The property tax base has been divided by \$1,000 in order to provide manageable numbers. Property tax effort is used as a measure of overall tax effort for two reasons. First of all, property taxes are the primary local funding source for public education expenditures in Tennessee (around 60% of total local revenue). Second, many school districts do not have the ability to increase sales tax rates in order to increase local tax effort. Special districts do not have access to a local option sales tax and some city systems confront the statewide rate cap; however, all districts have the ability to increase or decrease property tax rates.

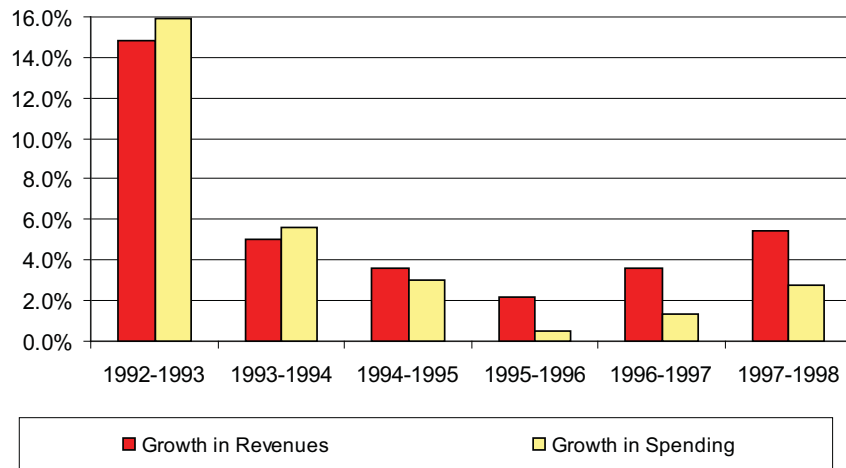
³²All figures are adjusted for inflation using 2006 dollars.

³³Around 20% of the large increase in state funds during the 1992-1993 school year was due to restoration of a state funding cut during the 1991-1992 school year.

Local funds contracted during the 1992-1993 school year, and then grew much more slowly than state funds in four of the next five years.³⁴ During the 1998-1999 school year, local funds grew at twice the rate of state funds. The class size constraint imposed by the full-funding requirements may have caused the sharp increase in local support when districts reached the last year of the phase in or local government support may simply have picked back up as growth in state funding declined. These changes in local funding support are considered in more detail below using regression analysis.

Figure 12 shows the growth in education revenues and current education spending throughout the phase in of BEP funding. In the first two years of the phase in the growth in education spending outpaced the growth in education revenues. In the last four years of the phase in the opposite occurred; education revenues grew at a rate higher than education spending. Spending, as used here, is calculated as per pupil *current operating* expenditures; therefore, it does not include capital spending.³⁵ Because of this, revenues provided for education and current education spending are

FIGURE 12: Growth in Education Revenues and Current Education Spending



³⁴ The Education Improvement Act specifically provided for this decrease in local spending (see TCA 49-3-314(c)(2)) because the state decreased its own funding in 1992. If local districts increased funding to account for the state decrease in 1991-1992, they were allowed to decrease local funding in 1992-1993 school year regardless of the maintenance of effort requirement.

³⁵ Current spending is used in our analysis, rather than total spending, because we are interested in the change in instructional and current operating expenditures. If total spending was utilized, and capital spending was included, we would not be able to pick up a decrease in instructional expenditures if the money was shifted to capital spending. This is significant because capital spending may only affect a small subset of students (e.g., the students attending the newly built school).

If local districts had chosen to maintain growth in their locally provided revenue levels, and continued to spend all state provided money, we would have expected the growth in education revenues to nearly equal the growth rate of education spending. It did not.

not equivalent. It is therefore understandable that revenues and expenditures may grow at different rates. If overall revenues are growing at a rate faster than expenditures, then it seems reasonable to assume that a portion of the local revenues, which are at the local government's discretion, are being diverted away from current operating education spending toward capital projects or that these revenues are being used to retire previously incurred debt.

School districts generally spend all of the grant money provided by the federal government and the state for education. The remainder of education spending is provided via local revenue sources. If local districts had chosen to maintain growth in their locally provided revenue levels, and continued to spend all state-provided money, we would have expected the growth in education revenues to nearly equal the growth rate of education spending. This is not what is observed in Tennessee during the BEP phase-in period. Elementary and secondary education revenues increased by 21.5% between 1992-1993 and 1997-1998 while current education spending, which does not include capital outlay, grew by only 13.9% during the same time period. Part of this differential is likely due to the increased capital spending that was necessary to prepare for the smaller class size requirements. School construction funds are not included in the analysis of expenditures presented here. We follow previous literature by focusing on *current* operating expenditures rather than total expenditures. This is primarily because construction expenditures embedded in total expenditures affect only those students who attend the new (or renovated) school, whereas current operating spending has a greater likelihood of benefiting all students.

Multiple regression analysis was used to investigate whether an increase in state-provided funds led to a decrease in property tax effort over the time period of analysis (1989-2004), holding several other explanatory variables constant, including all federal, state, and local revenues. Capital outlay funds provided by federal, state, and local governments are included in these figures.³⁶ The analysis considered the long-run effects of the BEP on effort, as

³⁶The capital revenues included in these figures are generally revenues used to fund small to medium capital projects; not all capital spending is accounted for in this analysis.

well as any short-term or transitory effects confined solely to the phase-in period. The results of the analysis show that the increase in state-provided BEP funds was indeed associated with a statistically significant decrease in local property tax effort over the entire period the BEP has been in effect. At the same time, there is no independent or transitory effect of the phase-in period itself on tax effort.³⁷ That is, while there appears to be a long-term decline in tax effort because of the implementation of the BEP, there is no evidence of a more significant drop in effort during the years of the phase in as compared with the entire period the BEP has been in effect.

Many states have attempted to address district responses that reduce effort by requiring maintenance of local tax effort. For example, school districts may be required to collect a certain amount of local tax revenue every year to sustain their support for spending, with the amount of tax revenue required determined by the total value of taxable property within the school district. By requiring maintenance of tax effort, states mitigate the school district's tendency to reduce their tax effort when state funds are increased. Tennessee's school finance formula has not required maintenance of tax effort although it does mandate maintenance of previous year *nominal* spending. A maintenance of tax effort requirement differs significantly from a maintenance of nominal revenue requirement. Because of inflationary pressures, a locality can decrease tax effort and still maintain nominal revenue. Additionally, as a locality's tax base widens, they can maintain nominal revenue while decreasing tax in terms of tax votes. A vote-based maintenance of tax effort requirement would lead to an increase in revenue as the tax base widened and price levels increased.

Statistical analysis was used to further study effects of the phase in, but in this instance locally-provided education revenues were

Tennessee does not require maintenance of tax effort. The state requires only that total revenue remain the same.

³⁷ A fixed effect panel data regression model was utilized, using local property tax effort as the dependent variable and a variety of control variables, including revenue from federal, state, and local sources, unemployment rate, average teacher salary per capita income, and others.

Preliminary regression analysis provides evidence that expenditures on highways and public buildings grew in response to BEP funding.

considered.³⁸ Several interesting results emerged from the analysis. First, the variable representing the phase-in period alone was negative and significant. This shows that, holding all else constant, local school districts decreased *locally* provided real revenues during the phase-in period.³⁹ This decrease in locally-provided revenues may have been exacerbated by the fact that rules associated with the BEP were not binding until after the phase-in period. Local districts had the freedom to reduce the growth in locally provided revenues early on in the BEP implementation process, in part because the class size rule would not be enforced for five years. This finding is especially interesting since the phase in was shown above to have no independent effect on local tax effort. Together the tax effort and local revenue collection results indicate that local revenues may have been diverted to other spending categories within local government, including capital outlay for schools, during the phase-in window. Preliminary regression analysis provides evidence that expenditures on highways and public buildings grew in response to BEP funding.⁴⁰

Another important finding from regression analysis is that as state BEP funding increased, this placed downward pressure on locally-provided education revenues (holding all else constant) over the long term, not just during the period of the phase in. Specifically, a one dollar increase in state-provided revenues resulted in a \$0.49 decrease in locally provided revenues.⁴¹ There is an overall

³⁸A panel data fixed effects regression analysis was conducted using locally-funded school revenues as the dependent variable. Revenue collected for the purpose of capital spending is included in the local revenue variable, though this does not include all funds for capital projects. Independent variables include a time trend variable, a phase-in dummy variable, property tax revenues, the unemployment rate, number of students, number of special education students, average teacher salary, federally provided funds per pupil and state provided funds per pupil, and others. District and year fixed effects were also included.

³⁹This does *not* mean that overall revenues declined. To the contrary, as shown in the text, local funds per pupil grew in most years of the phase in. But the independent effect of the BEP was to diminish own-source revenue collection.

⁴⁰These results are based on data for a subsample of counties obtained from the U.S. Census Bureau. The regressions examined spending controlling for a variety of different factors, including the introduction of the BEP grant. The coefficient of the BEP grant variable had a positive sign indicating the BEP was associated with higher spending on highways and public buildings. The Census public buildings category does not include school buildings.

⁴¹Table 11 shows overall revenue growth, but this growth reflects changes from all forces. The regression analysis controls for the various factors affecting revenues and allows isolation of the independent effect of specific factors like the BEP.

increase in spending of only \$0.51 for every dollar provided by the state. In terms of the flypaper effect, only 51 cents of each dollar received sticks in the current operating budget for schools.⁴²

COST DIFFERENTIAL FACTOR

The Cost Differential Factor (CDF) was implemented along with the BEP in order to account for local cost differentials that might affect the costs of delivering elementary and secondary education services. Different districts faced varied costs, from salary costs to the cost of locally purchased supplies and services. Salaries in particular vary greatly in Tennessee, and it is not surprising that teachers, janitors, and other school staff are paid more in Williamson County than they are in Scott County since Williamson County has a higher average wage structure. The CDF was intended to account for these cost differentials using a wage index. Counties in which wages were greater than the state average in Tennessee received additional funding via the CDF.

This section of the report begins with a descriptive analysis of CDF funding patterns across time and school districts. The final part of this section explores the way in which CDF funding affected local government spending and funding for elementary and secondary education.

CDF FUNDING PATTERNS

The CDF adjustment amounted to a considerable increase in state-provided education resources for some systems. The Memphis school district received the largest aggregate amount of funds from the CDF in each of the fourteen years included in this analysis, totaling \$60.9 million in 2006. To put this figure into perspective, this is roughly enough money to fund food services and the Board of Education budget for the Memphis school district for the 2005-2006 school year. Davidson County received the largest percentage increase (18%) from the CDF.

⁴²The \$0.51 represents the result from the preferred specification. The result indicating the amount of BEP revenue that was passed on through increased spending varies depending on the exact specification used. Results range from \$0.33 to \$0.59.

School systems in 6 counties received CDF funds in each of the first 11 years of the BEP.

Funding formulas in California, Colorado, Florida, and Wyoming use cost-of-living data to adjust funding for schools systems.

During the 2005-06 school year, 10 states including Tennessee had mechanisms in their school finance funding formulas to account for cost differences across districts. These states include Alaska, California, Colorado, Florida, Massachusetts, Ohio, Tennessee, Texas, Virginia and Wyoming. Some of the formulas provided cost-adjusted funds for all districts, while others—including Tennessee—only rewarded a subset of all systems. The basic premise of each state’s program is discussed below.⁴³

Alaska: The state uses an index known as the Area Cost Differential (ACD). The ACD is only applied to non-teacher personnel costs and administrative costs. (Teacher salaries do not vary significantly between school districts in Alaska.) The district cost factor is calculated by comparing the cost of running an identical school (same type of students, same teachers, etc.) in Anchorage. Schools located in Anchorage are assigned a base value of 1.00. Other school districts are assigned higher figures to account for their increasingly rural locations. The state then adjusts basic need by the district cost factor. Rural schools in Alaska generally face increased costs due to transportation and climate considerations.

California: The state uses cost of living information published on U.S. metropolitan areas by the U.S. Department of Commerce to adjust the annual revenue limits used in the district funding formulas. The funding amount given to all California districts is adjusted to reflect the cost of living.

Colorado: The Cost of Living Factor (CLF) is calculated every two years by comparing the differences in the cost of housing, goods and services in each of Colorado’s school districts. This factor is then incorporated into the Personnel Costs Factor (PCF) which uses historical information along with the CLF. The PCF is applied to the portion of state funding that is allocated towards personnel.

Florida: The District Cost Differential (DCD) is calculated using a two-step method. The Florida Price Level Index (FPLI) is

⁴³Generally see Thompson and Silvernail (2001), National Center for Education Statistics (2001) and State of New York (2000). For Florida see Bureau of Economics and Business Research (2007) and for Texas see Alexander et al. (2001).

calculated in the first step. It is a county-level index that is based on a standard basket of consumer goods, similar to the consumer price index. After the FPLI is determined, the DCD is calculated by taking the average FPLI for each district for the past three years. The DCD is then applied (via the funding formula) to the basic per student funding.

Massachusetts: The state uses a wage adjustment factor that accounts for cost of living and salary expectation differences across school districts. Districts located in geographic areas associated with higher than average wages receive additional funding. The wage adjustment factor is calculated using average wage data collected by the Massachusetts Department of Employment. The calculation is based on the labor market area rather than the county or city where the district is located.

Ohio: The cost adjustment factor in Ohio is known as the Cost-of-Doing-Business Factor. It is based on an index of all hourly wages for the county in which the school district is located as well as the school district's contiguous counties. The range of index values is limited by state law, which creates an Adjusted Cost-of-Doing-Business Factor. This factor is multiplied by district membership and the formula funding amount.

Texas: The Cost of Education Index is used to account for varying costs beyond the control of Texas school districts. The index takes into account district size, county population, the percentage of low-income students, and teacher salaries.

Virginia: The state adjusts their funding formula for nine high-cost school districts in northern Virginia near Washington, D.C. As of 2006, a 9.83% add-on was given for instructional salaries and a 19.07% add-on was given for support salaries. These percentages are adjusted by the Virginia Legislature as they see fit. This factor is known as the "Cost of Competing Factor."

Wyoming: The funding formula is adjusted to account for differences in costs across school districts. The adjustment is based on an index calculated by comparing consumer prices. Prices of 140 different consumer goods including housing, food, and transportation are considered.

Massachusetts and Ohio, like Tennessee, use wages to adjust funding for cost differences across school systems.

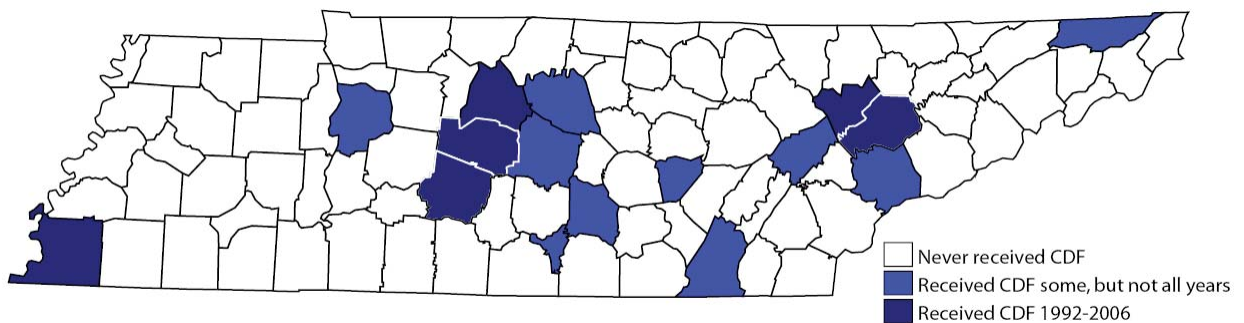
On average, ten counties qualified for the CDF each year between 1992 and 2006. As shown below, six of these counties (10 districts) in Tennessee received the CDF in each of the fourteen years, while eleven additional counties (20 districts) received the CDF at least once during that period.

Received CDF from 1992-2006	Received CDF for Some (but not all) Years	
Anderson County	Blount County	Roane County
Clinton City	Alcoa City	Harriman City
Oak Ridge City	Maryville City	Rutherford County
Davidson County	Coffee County	Murfreesboro City
Knox County	Manchester City	Sullivan County
Maury County	Tullahoma City	Bristol City
Shelby County	Hamilton County	Kingsport City
Memphis City	Humphreys County	Van Buren County
Williamson County	Madison County	Wilson County
Franklin Special School District	Moore County	Lebanon Special School District

The CDF was calculated at the county level; therefore, in counties that contained more than one school district, all districts within the county received the CDF. For example, if Anderson County received CDF funds, then the Clinton and Oak Ridge school systems also received CDF funds. The CDF determined the percentage of funds to be provided to school districts above and beyond the base funding of salaries and benefits identified by the BEP funding formula; therefore, if Anderson County received an additional 14% of funds via the CDF, the Clinton and Oak Ridge schools also received a 14% increase in funding.

Figure 13 shows the geographical pattern of the counties receiving additional money via the CDF. As revealed by the map, most

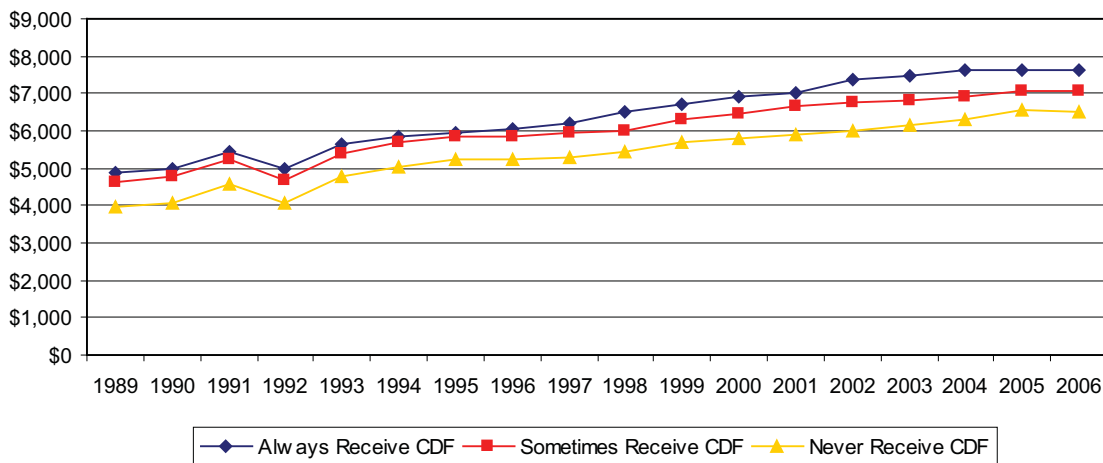
FIGURE 13: Counties Receiving Additional Money



school districts receiving CDF funds were located in or around one of Tennessee’s largest cities. This is not surprising considering that the CDF is calculated using a wage index. Average wages, as well as overall per capita personal income, tend to be higher in metropolitan areas.

Figure 14 shows the current spending levels of districts broken down by whether they received CDF funds. Districts that received CDF funds generally spent more on education per student even before the BEP. On average, districts that received extra funds via the CDF spent 19% more per pupil than districts that did not receive CDF funds between 1992-1993 and 2005-2006. Districts that received CDF funds in all fifteen years spent an average of 6.0% more than districts that received CDF funds in some, but not all, of the years since BEP implementation. In the four years prior to the institution of the CDF (and the BEP) these same districts spent an average of only 1.9% more. The average increase in funding via the CDF was 4.8% per student across all years of our analysis. Not surprisingly, districts that consistently received CDF funds qualified for a larger percentage increase in revenues. Districts that received the CDF funding in each year saw an average increase of 5.4% per student while districts that received CDF funds in only some years received an average increase of 2.7% per student. A wide array of factors may explain these spending differentials other than receipt of the CDF as is discussed more fully below.

FIGURE 14: Per-Pupil Current Spending Levels of Districts



Counties were not guaranteed CDF funds from year to year, which created some uncertainty for the school systems. While some counties, such as Williamson County, could reasonably expect to receive CDF funds every year, other counties could not make such an assumption.⁴⁴ The actual and potential variability of the CDF may have affected the spending decisions of school systems. For example, Shelby County, which qualified for CDF funds in all years, could make budget decisions assuming that they would continue to receive some additional funds through the CDF.⁴⁵ Other counties that received CDF funds on an irregular basis, on the other hand, might have chosen to avoid any long-term funding commitments based on the CDF because of funding uncertainties.

All districts receiving CDF funds would have spent their complete allocation. But like the basic BEP grant discussed above, CDF funding would allow a local district to reduce its tax effort or reallocate its own funds to other spending programs as long as the maintenance of effort requirement was satisfied. Because it is

TABLE 12: Real CDF Funds Received by Districts Who Qualified for CDF Funds in All Years

	1993	1994	1995	1996	1997	1998	1999
Anderson County	\$1,311,576	\$2,191,037	\$2,394,570	\$3,056,609	\$3,307,394	\$3,522,584	\$3,193,409
Clinton City	\$223,111	\$370,461	\$386,203	\$514,195	\$524,410	\$536,666	\$497,312
Oak Ridge City	\$901,429	\$1,508,094	\$1,650,335	\$2,114,077	\$2,296,222	\$2,353,090	\$2,088,675
Davidson County	\$36,719,024	\$38,473,041	\$39,154,880	\$39,317,940	\$39,441,540	\$40,128,722	\$38,491,761
Knox County	\$4,011,379	\$4,106,400	\$4,022,358	\$4,523,620	\$5,283,903	\$5,388,823	\$4,101,605
Maury County	\$2,598,376	\$3,265,234	\$3,824,240	\$4,530,236	\$4,834,092	\$5,229,225	\$5,623,415
Shelby County	\$16,098,081	\$17,725,414	\$18,651,480	\$19,401,990	\$19,720,770	\$19,381,795	\$19,535,488
Memphis City	\$43,755,399	\$47,398,312	\$49,075,880	\$49,725,630	\$45,973,260	\$47,131,669	\$47,408,633
Williamson County	\$3,459,486	\$3,911,964	\$4,567,291	\$5,164,427	\$6,258,133	\$7,504,089	\$8,891,494
Franklin City	\$1,038,587	\$1,088,039	\$1,221,274	\$1,281,491	\$1,474,658	\$1,732,383	\$2,001,798
Total	\$110,116,447	\$120,037,996	\$124,948,511	\$129,630,215	\$129,114,382	\$132,909,046	\$131,833,591

⁴⁴Knox County did not receive CDF funds in 2007. It was the first year since the implementation of the BEP that Knox County did not receive the CDF.

⁴⁵While Williamson and Shelby Counties could count on *qualifying* for CDF funds, even these counties were subject to the vagaries of the legislative cycle which determined the level of CDF funding.

part of BEP funding and not a separate grant, the CDF also required local matching. Tennessee districts were required to match 25% of classroom costs and 50% of nonclassroom costs adjusted for fiscal capacity for the majority of our analysis (1992 until 2004). Beginning in the 2004-2005 school year, districts had to match 35% of the instructional position portion of classroom costs. The match for the remaining classroom components remained at 25%. Tables 12 and 13 present the total amount of CDF funds allocated to local school districts by the State of Tennessee between 1993 and 2006. All figures have been adjusted for inflation using 2006 dollars. More than \$2.0 billion was granted to Tennessee school districts through the CDF. The majority of the money, \$1.8 billion, was provided to the districts that received CDF funds in all years. Table 12 presents the breakdown of CDF funds for these 10 districts from 1993 until 2006. The remainder was paid to the 20 school districts that inconsistently received revenue through the CDF. Table 13 shows the funds received in these counties.

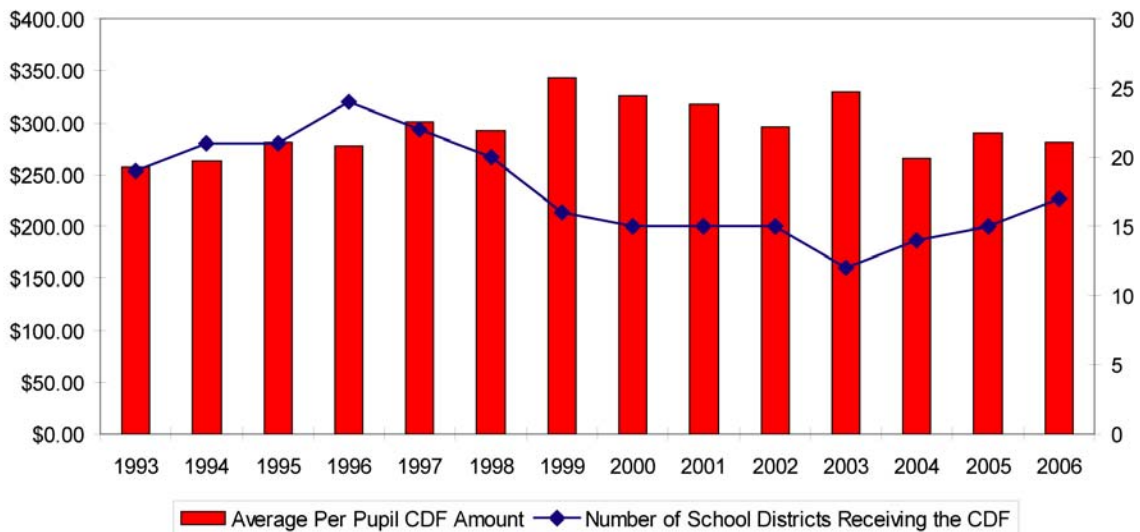
2000	2001	2002	2003	2004	2005	2006	Total
\$2,838,316	\$2,426,334	\$2,224,577	\$1,913,684	\$1,848,758	\$1,937,777	\$2,001,318	\$34,167,943
\$441,473	\$370,465	\$329,893	\$274,779	\$272,828	\$274,604	\$282,374	\$5,298,776
\$1,840,880	\$1,574,511	\$1,427,337	\$1,195,562	\$1,152,079	\$1,210,251	\$1,267,080	\$22,579,622
\$39,686,070	\$39,973,389	\$42,645,372	\$43,977,441	\$43,394,795	\$48,220,714	\$44,098,805	\$573,723,494
\$2,699,511	\$2,502,278	\$2,247,231	\$2,605,568	\$1,456,258	\$2,029,994	\$1,675,833	\$46,654,762
\$4,787,783	\$3,369,678	\$2,223,749	\$1,647,853	\$1,552,782	\$1,122,804	\$1,263,566	\$45,873,032
\$19,463,120	\$18,488,610	\$19,475,497	\$19,454,041	\$19,334,376	\$21,662,741	\$23,117,533	\$271,510,936
\$45,809,498	\$48,201,601	\$49,639,789	\$50,237,162	\$49,608,386	\$58,644,333	\$60,855,640	\$693,465,194
\$10,433,440	\$11,625,211	\$11,983,148	\$11,186,048	\$11,288,335	\$12,757,948	\$13,335,234	\$122,366,248
\$2,298,106	\$2,505,807	\$2,555,499	\$2,343,322	\$2,259,706	\$2,384,876	\$2,350,594	\$26,536,141
\$130,298,198	\$131,037,885	\$134,752,093	\$134,835,460	\$132,168,303	\$150,246,043	\$150,247,977	\$1,842,176,147

TABLE 13: Real CDF Funds Received by Districts Who Qualified for CDF Funds in Some Years

	1993	1994	1995	1996	1997	1998	1999
Blount County	\$801,201	\$383,182	\$383,611	\$110,584	\$66,135	-	-
Alcoa City	\$120,309	\$56,978	\$57,466	\$15,617	\$9,274	-	-
Maryville City	\$306,403	\$141,580	\$139,959	\$40,220	\$25,067	-	-
Coffee County	-	-	-	\$37,448	-	-	-
Manchester City	-	-	-	\$11,208	-	-	-
Tullahoma City	-	-	-	\$30,758	-	-	-
Hamilton County	\$6,255,901	\$5,531,017	\$5,013,609	\$6,157,470	\$5,629,218	\$4,781,383	\$3,505,784
Humphreys County	-	-	-	-	\$223,380	\$109,019	-
Madison County	\$219,648	-	-	-	-	-	-
Moore County	-	-	-	-	-	\$88,164	\$81,356
Roane County	-	\$625,994	\$2,046,999	\$4,241,734	\$4,226,690	\$1,936,625	\$1,894,869
Harriman City	-	\$185,943	\$0	\$0	\$0	\$558,207	\$397,964
Rutherford County	\$3,827,297	\$4,477,164	\$4,687,866	\$5,444,392	\$6,043,549	\$5,085,790	\$4,571,315
Murfreesboro City	\$1,001,514	\$1,171,296	\$1,230,155	\$1,405,052	\$1,472,068	\$1,259,151	\$1,112,213
Sullivan County	\$5,986,439	\$5,803,784	\$5,040,006	\$3,783,788	\$2,515,370	\$391,552	-
Bristol City	\$1,526,145	\$1,505,953	\$1,334,009	\$980,678	\$645,722	\$100,774	-
Kingsport City	\$2,475,322	\$2,448,207	\$2,216,383	\$1,648,556	\$1,090,120	\$170,096	-
Van Buren County	-	-	-	-	-	-	-
Wilson County	-	-	-	-	-	-	-
Lebanon City	-	-	-	-	-	-	-
Total	\$22,520,179	\$22,331,096	\$22,150,062	\$23,907,505	\$21,946,593	\$14,480,762	\$11,563,501

Figure 15 shows both the average amount of real CDF funds per pupil, as well as the number of school districts receiving funds via the CDF between 1993 and 2006. The number of school districts qualifying for the CDF (measured on the right axis) decreased slightly after reaching its peak in 1996. In the first year of the BEP, 19 Tennessee school

FIGURE 15: CDF Funding Per Pupil



2000	2001	2002	2003	2004	2005	2006	Total
-	-	-	-	\$70,882	\$851,671	\$1,991,507	\$4,658,772
-	-	-	-	\$8,416	\$98,028	\$237,112	\$603,200
-	-	-	-	\$28,032	\$340,607	\$791,100	\$1,812,968
-	-	-	-	-	-	-	\$37,448
-	-	-	-	-	-	-	\$11,208
-	-	-	-	-	-	-	\$30,758
\$2,969,143	\$1,241,828	\$218,672	-	-	-	-	\$41,304,026
-	-	-	-	-	-	-	\$332,399
-	-	-	-	-	-	-	\$219,648
\$38,033	-	-	-	-	-	-	\$207,553
\$1,675,447	\$1,605,816	\$1,169,887	\$923,701	\$782,850	\$623,194	\$236,556	\$21,990,362
\$342,891	\$315,738	\$222,636	-	-	\$0	-	\$2,023,381
\$3,984,912	\$2,139,231	\$1,248,087	-	-	-	-	\$41,509,603
\$957,367	\$508,172	\$296,122	-	-	-	-	\$10,413,110
-	-	-	-	-	-	-	\$23,520,939
-	-	-	-	-	-	-	\$6,093,282
-	-	-	-	-	-	-	\$10,048,684
-	-	-	-	-	\$149,198	\$286,555	\$435,753
-	-	-	-	-	-	\$218,866	\$218,866
-	-	-	-	-	-	\$54,100	\$54,100
\$9,967,793	\$5,810,786	\$3,155,405	\$923,701	\$890,180	\$2,062,700	\$3,815,796	\$165,526,059

districts received CDF funds with an average grant of \$256.71 per pupil. The peak of CDF funding was 1999, with an average CDF amount of \$343.36 per student. By 2006, this number fell to an average of \$281.32 a student.

There has not been a large amount of overall variation in CDF funding between 1993 and 2006; however, some counties that originally received the CDF have seen a significant amount of variation. Knox and Hamilton counties are two good examples. As noted above, 2007 was the first year Knox County did not receive funds through the CDF; Hamilton County has not qualified for the CDF since 2002. Knox County received \$1.7 million in 2006 via the CDF, representing \$31.59 per student. Hamilton County received \$6.3 million in 1993 via the CDF (in 2006 dollars). By 2003 they no longer received CDF funds.

While some Tennessee school districts lost CDF funding, or saw significant decreases, there were also some Tennessee school districts that had significant increases in CDF funds over time. In 1993, Williamson County received \$266.42 per pupil via the CDF adjustment. In 2006, Williamson County received \$524.19 per pupil. In 1993, CDF funds accounted for 5.1% of current per pupil spending in Williamson County. By 2006, this had risen to 7.8%.

It is possible that CDF funds simply supplanted, in part or in whole, local funds that would have been provided beyond the maintenance of effort requirement.

THE IMPACT OF THE CDF ON CURRENT SPENDING

An important policy question is how the receipt of CDF funds affected current education spending. All districts receiving the CDF could account for the complete disbursement of their allocation. But it is possible that CDF funds simply supplanted, in part or in whole, local funds that would have been provided beyond the maintenance of effort requirement. Because money is fungible, grant proceeds might have been used to support spending in other programmatic areas of the local government budget or lower property tax rates. This would be consistent with the flypaper effect discussed above in the context of the BEP phase in, where governments in receipt of a grant from a higher level of government increase overall spending by less than the amount of the grant. While this response on the part of local governments may not have been the intent of the policy, it is nonetheless a possible outcome.

The variation in funding levels and districts receiving CDF funds may also affect local government spending. In particular, one would expect to see a smaller increment in spending in districts where the presence or absence of CDF funding was inconsistent from year to year. This is because school districts might have been hesitant to ratchet spending up in one year when they had a good reason to believe that funding might disappear or be reduced in the subsequent year. On the other hand, districts in receipt of CDF funds each year would be less fearful of the loss of funds and thus more likely to spend a greater share of their state grant.

A statistical analysis using multivariate regression was undertaken to examine these questions. This analysis includes four years of data before the implementation of the BEP.⁴⁷ The estimated equations used real per pupil current education expenditures across school districts, inclusive of CDF funds, as the dependent variable. A variety of factors was used to explain variations in current spending, including the value of CDF funds per pupil for districts that received the grant every year. If CDF funds were fully

⁴⁶Data are included for 18 years; from the 1988-1989 school year until the 2005-2006 school year. This allows the regression analysis to control for the period before and after BEP implementation.

expended with no reduction in spending from own sources, the coefficient of this variable should be 1 because the dependent variable includes the CDF funds: every CDF dollar received should be directly reflected in spending. If the flypaper effect is present, then this coefficient should be greater than zero but less than 1. This would mean that for every dollar of state aid received, current spending increased by less than a dollar. A separate variable was included in the model that reflected the value of CDF funds per pupil for districts that received the grant in only some years. Based on the discussion above, the coefficient of this second variable should be smaller than the coefficient on the first grant variable. In other words, it is expected that current spending will be stimulated more in districts with ongoing CDF funding than in districts with sporadic CDF funding.⁴⁷

Based on the flypaper effect literature, overall current spending is expected to rise by an amount that is less than the value of the CDF. The results confirm this hypothesis. Specifically, the estimates show that holding all else constant, districts that always received the CDF add approximately 52% of CDF funds to their current operating per pupil expenditures. This means that the remaining 48 cents of every grant dollar received is used to support spending in other areas of the local government budget (including capital spending), support tax relief for local taxpayers, or some combination of these responses.⁴⁸ As with the BEP discussed above, districts would have accounted for the full disbursement of CDF funds. But insofar as the overall maintenance of effort requirement was satisfied, this would free up funds from one year to the next to accommodate lower tax effort or greater spending elsewhere in the local budget.

The analysis also shows that the two groups—those districts that always received CDF funds and those that received CDF funds in only some years—did indeed spend their grant monies differently. The results indicate that CDF funds had no statistically significant

Districts that always received CDF funds and those that received CDF funds in only some years spent their grant monies differently.

⁴⁷Fixed effects panel data regressions were conducted to examine these questions. A number of other factors were included in the model, including federal revenue per pupil, state revenue per pupil, local revenue per pupil, teacher salaries, number of students in ADM, number of special education students, and year and district fixed effects.

⁴⁸The \$0.52 results from the preferred specification in this particular analysis.

effect on current spending in districts that received grant funds in only some years. One likely explanation is the hesitancy to change current spending behavior based on an unstable, non-guaranteed revenue stream. As noted above, districts that received CDF funds in each of the fourteen years did increase their current school spending significantly based on the amount of CDF funds received, even though this increase fell short of the total amount of the CDF. Because these districts had received CDF funds on a predictable basis, they were likely more confident in increasing current school spending when they received the CDF supplement.

How one reacts to these findings about the CDF will depend on what one views the intent of CDF was. Consider first those districts that received CDF funds for all fourteen years. If the intent was to stimulate funding in high-cost jurisdictions above the level that would have otherwise prevailed, then the CDF was modestly successful because each grant dollar increased current spending by slightly more than 50 cents. Similarly, if the grant was intended to compensate local districts for the high costs they incur in providing education services, then the CDF was also effective since it freed up about 50 cents of every grant dollar to support spending elsewhere or to support tax relief. Now consider those districts that received only sporadic support from the CDF. For these districts, CDF had no effect on current operating per pupil expenditures whatsoever.

CONCLUSION

Education is by far the largest expenditure category for the state of Tennessee. In 2006, \$3.1 billion was provided by state government to fund K-12 education. The way in which this money is distributed to local school districts can have a large impact on the amount of per pupil expenditures that Tennessee students receive, as well as what they learn in the classroom. In addition, the choices made at the state level can significantly influence the decisions made by local governments regarding the local budgeting and the funding of school districts.

The Basic Education Program has significantly improved education spending equity since its initiation in the 1992-1993 school year. The variation in total school spending across districts in the state has decreased, and the mean level of current school expenditures (in real terms) has increased by a sizeable amount. Although overall equity has improved, the gap between the very poorest school districts and the very richest school districts continues to widen. Based on the equity analysis in the body of the report, the evidence points to a widening of the *local* revenue disparity across districts that may help explain this finding. The changes in disparity may have resulted from changes in effort or changes in capacity across local districts, or both.

The choice by the state of Tennessee to phase in the new funds in support of the BEP between 1991-1992 and 1997-1998 seems to have led to significant changes in behavior on the part of the local school districts. In response to the influx of new state funds, school districts decreased the amount of real *per pupil* current operating revenues that were provided by the local government.⁴⁹ Total nominal local revenues did not decrease, and all systems complied with the state's maintenance of effort requirements.

⁴⁹It should be recognized that districts may have shifted some local revenue towards school construction, funds which are not fully accounted for in this analysis; however, the education finance literature generally excludes capital outlay figures in studies like this because major construction expenditures benefit only a portion of the total number of students. The focus of this analysis is the impact on current school spending and the collection of revenues to support that spending.

While some counties have a high taste for education and a high desire for funding increases, other counties may think that their low level of funding is adequate and may resist any attempts to increase overall expenditures.

The only way to fully eliminate education spending differences is to eliminate local control of locally provided education revenues.

Local districts may have responded in two ways. First, some districts decreased, or failed to increase, their local tax effort per pupil or in terms of tax votes. Secondly, some districts chose to reallocate funds that would have otherwise been spent on public education towards other expenditure categories. Preliminary evidence based on a subset of school districts and regression analysis indicates that the local share of highway and public building expenditures, which may have included school construction, increased during the phase in. In these regression models on spending, the BEP variable had an independent and positive effect on highway and public building spending.

The CDF has been a significant source of funds for a subset of Tennessee school districts over the past 14 years. The receipt of these funds caused Tennessee school districts to alter their behavior depending on whether they consistently received revenue via the CDF. Districts that received the funds on a consistent basis used the grant to increase current education spending, though not by the full amount of the CDF adjustment. In contrast, districts that did not qualify for the CDF on a regular basis showed no statistically significant response at all to the CDF. These findings are based on regression analysis that considered local spending both before and after the introduction of the BEP and CDF.

The introduction of a new education finance system always leads to changes in behavior on the part of local school districts, and in many instances, unanticipated and undesirable responses. This is driven primarily by the fact that residents in different school districts, and different counties, may have very different tastes for public education. While some counties have a high taste for education and a high desire for funding increases, other counties may think that their low level of funding is adequate and may resist any attempts to increase overall expenditures. There are actions that the state can take to try to minimize these undesirable responses on the part of local government, such as minimum tax effort requirements. But as long as local governments have some say in determining tax rates and public school expenditure levels, there will be some differentiation across districts. The only way to fully eliminate education spending differences is to eliminate local

control of locally provided education revenues. Hawaii has done this by implementing full state funding and administration. The state could also control local tax rates and only allow for spending supported by the tax revenue that is collected. Either of these systems would represent a dramatic change in course for Tennessee and might weaken local support for local schools.

The good news is that the BEP improved the overall picture of public education spending in Tennessee. Current spending equity as well as overall revenue equity has improved. The variation in current spending has been reduced, and teachers' salaries are much more equitable than they were in 1993. The bad news is that the state of Tennessee continues to lag the rest of the country in terms of current per pupil expenditures. The implementation of the BEP in 1992-1993 was a step in the right direction, but there is still a long way to go to meet the national average standards in school spending and achievement. The vast majority of Tennessee's policies have dealt with equity considerations because the state has not yet been challenged on the subject of education adequacy. A future adequacy challenge could significantly alter the future of school finance reform in Tennessee.

The variation in current spending has been reduced, and teachers' salaries are much more equitable than they were in 1993.

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APPENDIX

APPENDIX TABLE 1: Current Spending—Measures of Equity

	Federal Range Ratio	90/10 Ratio	Coefficient of Variation	Gini Coefficient	Theil's T-Statistic
1989	0.418	1.468	0.173	0.088	0.014
1990	0.424	1.449	0.165	0.085	0.013
1991	0.404	1.420	0.154	0.082	0.011
1992	0.406	1.496	0.170	0.088	0.014
1993	0.363	1.424	0.146	0.076	0.010
1994	0.355	1.403	0.144	0.074	0.010
1995	0.374	1.401	0.139	0.073	0.009
1996	0.354	1.414	0.137	0.073	0.009
1997	0.359	1.362	0.141	0.073	0.009
1998	0.347	1.339	0.131	0.069	0.008
1999	0.356	1.355	0.130	0.069	0.008
2000	0.334	1.358	0.122	0.065	0.007
2001	0.324	1.334	0.123	0.065	0.007
2002	0.339	1.321	0.125	0.066	0.007
2003	0.324	1.305	0.123	0.065	0.007
2004	0.317	1.332	0.123	0.064	0.007
2005	0.301	1.311	0.114	0.060	0.006
2006	0.306	1.308	0.116	0.062	0.006

APPENDIX TABLE 2: Local Revenue—Measures of Equity

	Federal Range Ratio	90/10 Ratio	Coefficient of Variation	Gini Coefficient	Theil's T-Statistic
1989	0.743	2.672	0.461	0.232	0.091
1990	0.737	2.928	0.447	0.230	0.087
1991	0.719	2.782	0.428	0.221	0.081
1992	0.743	2.872	0.462	0.235	0.092
1993	0.763	2.948	0.469	0.238	0.095
1994	0.761	3.144	0.468	0.240	0.095
1995	0.755	3.006	0.464	0.238	0.094
1996	0.757	2.840	0.475	0.243	0.098
1997	0.783	3.105	0.488	0.251	0.104
1998	0.779	3.082	0.492	0.252	0.105
1999	0.767	3.358	0.489	0.253	0.104
2000	0.768	3.349	0.496	0.254	0.106
2001	0.794	3.362	0.519	0.262	0.114
2002	0.789	3.360	0.541	0.267	0.121
2003	0.766	3.440	0.498	0.258	0.108
2004	0.781	3.572	0.515	0.265	0.115
2005	0.778	3.422	0.506	0.260	0.111
2006	0.774	3.647	0.536	0.271	0.122

APPENDIX TABLE 3: State Revenue—Measures of Equity

	Federal Range Ratio	90/10 Ratio	Coefficient of Variation	Gini Coefficient	Theil's T-Statistic
1989	0.234	1.223	0.091	0.047	0.004
1990	0.249	1.247	0.092	0.047	0.004
1991	0.255	1.231	0.095	0.048	0.004
1992	0.262	1.243	0.097	0.051	0.005
1993	0.233	1.228	0.089	0.046	0.004
1994	0.271	1.254	0.097	0.051	0.005
1995	0.296	1.310	0.105	0.058	0.005
1996	0.340	1.318	0.117	0.064	0.007
1997	0.356	1.378	0.126	0.070	0.008
1998	0.352	1.430	0.136	0.076	0.009
1999	0.368	1.441	0.136	0.076	0.009
2000	0.373	1.439	0.139	0.078	0.010
2001	0.368	1.460	0.138	0.077	0.009
2002	0.362	1.448	0.141	0.079	0.010
2003	0.364	1.512	0.142	0.080	0.010
2004	0.412	1.538	0.161	0.090	0.013
2005	0.428	1.544	0.165	0.092	0.013
2006	0.457	1.585	0.175	0.097	0.015

APPENDIX TABLE 4: Total Revenue—Measures of Equity

	Federal Range Ratio	90/10 Ratio	Coefficient of Variation	Gini Coefficient	Theil's T-Statistic
1989	0.451	1.502	0.185	0.094	0.016
1990	0.426	1.510	0.178	0.093	0.015
1991	0.418	1.449	0.167	0.088	0.013
1992	0.461	1.526	0.186	0.096	0.016
1993	0.424	1.476	0.162	0.083	0.012
1994	0.401	1.423	0.154	0.079	0.011
1995	0.390	1.375	0.144	0.075	0.010
1996	0.370	1.359	0.142	0.073	0.009
1997	0.343	1.343	0.137	0.070	0.009
1998	0.320	1.334	0.126	0.065	0.007
1999	0.334	1.341	0.135	0.070	0.009
2000	0.376	1.324	0.138	0.070	0.009
2001	0.384	1.358	0.146	0.071	0.010
2002	0.337	1.351	0.156	0.076	0.011
2003	0.302	1.336	0.130	0.068	0.008
2004	0.349	1.320	0.134	0.068	0.008
2005	0.302	1.311	0.126	0.065	0.007
2006	0.328	1.330	0.134	0.069	0.008



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