IN THIS REPORT

The intent of the General Assembly to provide fair and equitable funding by implementing a formula that compensates for differences in local fiscal capacity was largely met by the BEP. Despite the fact there have been gains in education equity and that state revenue is increasingly differentiated, **spending equity indicators have stalled in recent years. These stalled measures indicate the equalizing effect of state revenue has been too small to offset differences at the local level.**

The pursuit of equity in spending will always be an important issue in education finance. Statistical measures, including the ones discussed in this brief, allow researchers to recognize and follow emerging education finance trends in Tennessee.

GAINS IN EDUCATION SPENDING EQUITY
TEN YEARS AFTER FULLY FUNDING THE BEP (1998-2008)

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OVERVIEW

The Basic Education Program (BEP) funding formula was adopted by the Tennessee General Assembly as a key part of the Education Improvement Act of 1992 (EIA). The primary purpose of the new funding formula, which began to be phased in during fiscal year 1993, was to improve equity in education spending. The Tennessee Advisory Commission on Intergovernmental Relations (TACIR) has issued three related reports: an interim report on the gains in spending equity through fiscal year 1995—the mid-point of the six-year phase-in of the formula, one describing the effect of fully funding the formula in school year 1997-98, and a third looking at the 2001-02 school year when the class-size reduction mandate of the EIA went into effect.[1] Although the BEP was first implemented in fiscal year 1993, it took five fiscal years (1993 through 1998) until the state generated the necessary revenues to fully fund the formula.

This research brief updates the analysis and examines the impact of the fully-funded formula on equity in education

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[1] Green, H. and Holliday, L. 1996. *Much ado about something: Gains in education spending equity*. Nashville: Tennessee Advisory Commission on Intergovernmental Relations; Roehrich-Patrick, L. and Green, H. 2000. *Gains in education finance equity: How has the BEP changed things?* Nashville: Tennessee Advisory Commission on Intergovernmental Relations; Roehrich-Patrick, L. and Green, H. 2003. *Gains in education spending equity continue: Four years after fully funding the Basic Education Program*. Nashville: Tennessee Advisory Commission on Intergovernmental Relations.

spending through school year 2007-08.[2] Various statistics for measuring equity have been computed using Tennessee revenue and expenditure data over the implementation period of the BEP to demonstrate gains in equity. While all of the spending equity measures have improved significantly since both the initial phase-in of the BEP (fiscal year 1993) and full funding (fiscal year 1998), these measures have largely remained the same since TACIR's last education equity report in 2003.[3]

FINDINGS

In education finance, multiple measures of horizontal equity (equal treatment of equals, discussed later in this brief) are used to ensure that statistical error does not cause misinterpretation of results. For its analysis, TACIR used most of the standard measures as well as two of its own, the Green and TACIR indexes. The Green index (which describes "how the other half lives") is a ratio of spending for the top 50% of students to spending for the bottom 50%. The TACIR index is a statistical estimate of the relationship between the TACIR index of fiscal capacity and the level of state spending for each county area. It should be noted that there are no absolute standards for horizontal equity and that no attempt has been made to measure vertical equity–the unequal treatment of unequals. This latter concern may become a new policy frontier in education finance.

The period measured in this report is 1992 (when the BEP was adopted) through 2008.

Only one spending equity measure improved since fiscal year 2003 (Kingsport/Hancock County ratio). The range ratio, federal range ratio, top 10/bottom 10 systems, coefficient of variation, and the McLoone and Green indexes essentially remained the same since fiscal year 2003. These results can be found in Exhibit A. In contrast, all of the state revenue measures have improved since fiscal years 1992, 1998, and 2003, and can be seen in Exhibit B.

These results indicate that state revenue has been and continues to become more differentiated since the phase-in of the BEP. Spending equity, however, while having made gains since the start of the BEP and through the first five years of full funding (1998-2003), has essentially remained flat over the past five years. What factors have contributed to stalled spending equity? This report highlights a few possible reasons and recommends a closer look at them in order to achieve equity.

INTRODUCTION

The BEP formula became Tennessee's primary funding mechanism for education in fiscal year 1993. The Tennessee General Assembly adopted the new formula during the 1992 legislative session with the passage of the Education Improvement Act (EIA). It was fully funded in fiscal year 1998 after the state was able to generate the revenues necessary to fully fund the program. Ninety-one percent of all state funding for education now flows through this formula, and the state contribution to funding public schools hovered around 45% to 47% of the total between 2002 and 2008.

The General Assembly increased the state sales tax rate from 5.5% to 6.0% in 1992 to ensure

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[2] The Education Improvement Act imposed a statutory deadline on the phase-in of the Basic Education Program funding formula of July 1, 1997. Tennessee Code Annotated, § 49-3-354(h). That deadline was met.

[3] See Roehrich-Patrick, L. Green, H. 2003. *Gains in education spending equity continue: four years after fully funding the Basic Education Program*. Nashville: Tennessee Advisory Commission on Intergovernmental Relations.

adequate revenues would be in place to phase in full funding of the BEP over a six-year period. The revenue generated by this increase only partially funded the increases required to phase in the program. The phase-in was also supported by growth in the existing tax base. Full funding was achieved in fiscal year 1998 with a cumulative total of $682 million in new funds distributed through the BEP formula.

Legislative consideration of the BEP began in 1991 before the judicial decision in *Tennessee Small School Systems v. McWherter* (Small Systems I)[4], but after the initial filing of the lawsuit challenging the way the state funded education. A consortium of small, rural school systems filed suit in July 1988 asking the court to declare the old funding formula in violation of both the education and the equal protection clauses of the Tennessee Constitution and requiring the State to establish a new funding system that meets constitutional standards. In March 1993—during the first year of the six-year phase-in period for the new formula—the Supreme Court of Tennessee ruled in favor of the plaintiffs on the equal protection clause, affirmed the trial court's holding allowing the General Assembly to devise a remedy, and remanded the case to the trial court for further proceedings.

The case returned to the Supreme Court in a second appeal after the trial court denied the plaintiffs' demand for immediate equalization, priority for capital improvements, and equity in teachers' salaries. The Supreme Court issued its second opinion in February 1993 (Small Systems II)[5] ruling against the plaintiffs on all issues except equalization of teachers' salaries. That issue was addressed by the General Assembly in 1995 with additional state funds external to the BEP formula. That funding scheme was challenged by the plaintiffs in 1998 and rejected by the Supreme Court in a decision issued October 8, 2002 (Small Systems III).[6]

After the Small Systems III case, the BEP was revised to address teacher pay equity issues by increasing the teachers' salary component in the BEP formula.[7] In 2005, the Voluntary Pre-K Act was introduced. Following that, a concerted effort between the governor's administration and the State Board of Education's BEP Review Committee (the entity responsible for evaluating the BEP) produced the shift to "BEP 2.0,"[8] which passed and became effective in 2007. Starting in school year 2007-08, a new tax capacity model produced by the Center for Business and Economic Research (CBER) at the University of Tennessee has been used in combination with the county-level fiscal capacity model produced by TACIR and used since the inception of the BEP funding formula in 1992.

IMPROVING EQUITY AS SET FORTH IN THE EIA AND BY THE COURT

Pursuant to T.C.A. § 49-3-356, no local education agency (LEA) may receive state BEP funding until the local legislative body has appropriated the required local share. The local share for each LEA is determined by its county area fiscal capacity in accordance with the statute:

> *. . . It is the intent of the general assembly to provide funding on*

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[4] *Tennessee Small School Systems v. McWherter*, 851 S.W.2d 139 (Tenn. 1993).

[5] *Tennessee Small School Systems v. McWherter*, 894 S.W.2d 734 (Tenn. 1995).

[6] *Tennessee Small School Systems v. McWherter,* 91 S.W.3d 232 (Tenn. 2002).

[7] Tennessee Code Annotated Title 49, Chapter 3, Part 3, (Public Acts, Chapter No. 670, 2004).

[8] Tennessee Code Annotated Title 49, Chapter 3, Part 3, (Public Acts, Chapter No. 369, 2007).

a fair and equitable basis by recognizing the differences in the ability of local jurisdictions to raise local revenues.

The General Assembly heard extensive testimony regarding the adoption of a methodology that would meet its intent to provide funding on a fair and equitable basis. TACIR's study of education fiscal capacity produced the methodology adopted to satisfy this requirement.

In Small Systems II, the Court acknowledged the TACIR methodology and further stated that

[i]t appears that the BEP addresses both constitutional mandates imposed upon the State—the obligation to maintain and support a system of free public schools and the obligation that that system afford substantially equal educational opportunities.[9]

Fiscal capacity was not an issue in the Court's Small Systems III decision.

TACIR FISCAL CAPACITY AND EQUITY

TACIR determines the education fiscal capacity of each county area annually by analyzing the

- tax base,
- ability to pay, and
- tax and education service burden variables.

The result of the analysis is a dollar figure per pupil representing the fiscal capacity of each county area. That figure is multiplied by the average daily student membership (ADM) of the public schools in each county area to produce

a figure for the county area's total fiscal capacity, and a percentage of the statewide total is computed for each county area from those dollar figures.

In order to implement the equity provision adopted by the legislature, the Tennessee Department of Education applies TACIR's percentages to the aggregate local share of the BEP to determine each county area's required local match. For multi-school-system counties, the Department computes an overall state and local percentage for each county area and applies those ratios to determine the local match for each system within those counties (like Gibson County, which hosts five special school districts).

The fiscal capacity index used to calculate BEP funding was developed by Harry A. Green, Executive Director of TACIR, in the early 1990s to achieve fiscal equity. This index (the TACIR model) has been used from its inception in 1992 through fiscal year 2007. Starting fiscal year 2008, the new tax capacity model produced by CBER is used in addition to the TACIR model (Tennessee Code Annotated § 49-3-307). While the TACIR model uses multiple regression analysis, the CBER model is an arithmetic model.[10] In order to smooth year-to-year changes, the TACIR model has historically used three-year averages of the fiscal capacity variables and CBER has adopted that practice. The TACIR model includes additional factors addressing each county area's

- service burden
- ability to pay, and
- ability to export its tax burden.

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[9] *Tennessee Small School Systems v. McWherter*, 894 S.W.2d 738 (Tenn. 1995).

[10] For more information about the two models, please see *Fiscal Capacity and Fiscal Equity* (2008) on the TACIR website at: http://www.tennessee.gov/tacir/PDF_FILES/Fiscal%20Capacity/fiscalcapacityandfiscalequity.pdf.

Both models produce indices of each county's percent of the state's total fiscal capacity.

During the transition from the TACIR to the CBER model, the results of both are to be used in calculating fiscal capacity. In the first year of transition, fiscal year 2008, each model was used to calculate 50% of each county's fiscal capacity. If the CBER calculation produced a percent of total fiscal capacity number that was more than a 30% change from the TACIR calculation, then the CBER percentage was adjusted such that the change was only 30%. The two indices were then averaged to get the final fiscal capacity calculation. The stated intent of the administration was for the weight of each measure to shift toward CBER annually until its calculation was the only one used, but the percentages have remained at 50/50 for fiscal year 2009. The Department of Education has not announced an official transition schedule for future fiscal years.

More information about equity with regard to the TACIR and CBER models is available in Fiscal Capacity and Fiscal Equity (TACIR Staff Education Brief, August 2008).

A WORD ON SUB-COUNTY EQUITY

Sub-county equity is related to the distribution of funds across different systems within the same county. The following was taken from TACIR's *A Prototype Model for School-System-Level Fiscal Capacity in Tennessee: Why & How* (TACIR Staff Report, October 2005), which has more information about system and county level models and alternatives.

TACIR's model is used to allocate responsibility for the local portion of the BEP among the state's public school systems, but it is calculated and applied at the county level. Converted to a percentage of the statewide total, the fiscal capacity index constitutes the share that each county area has of the total statewide capacity to fund education from local sources. For counties with more than one school system, it is the share for all systems within the county combined. When it is applied to the BEP formula to determine the local matching requirement for each individual school system, the systems' BEP formula costs must be aggregated to the county level.

All systems within the county are treated the same in the current formula despite the fact that counties must share the revenue they raise with any other school systems within the same county, but cities and special school districts can supplement those county funds with their own taxes without sharing them. It is impossible to incorporate these very significant fiscal differences among systems into a county-area fiscal capacity model. Because the county area fiscal capacity model cannot distinguish systems that can supplement county revenues without sharing from those that cannot, in most counties with more than one school system, the county system's fiscal capacity is overstated, and the fiscal capacity for cities and special school districts is understated. Despite this structural flaw, the county model has many strong points that should be preserved in any alternative model.

CONSIDERATIONS FOR MEASURING EQUITY

Since the BEP formula has been in place for 16 years and fully funded for 10, an evaluation of its lasting effect on fiscal equity is warranted. Additional evaluation should continue in the years to come as the transition from the TACIR to CBER model is completed. As noted in the 1996 and 2000 TACIR briefs, a set of questions that together comprise a framework for analyzing equity in school finance has crystallized in the

education finance literature over the last two decades. These questions and the analysis that follows are based on that literature.[11]

> The questions are:
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> 1. For whom should school finance systems be equitable?
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> 2. What resources or services should be distributed equitably?
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> 3. How should equity be defined?
>
> 4. How should equity be measured?
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> The fourth question is generally a two-part question, embodying both the measures and the results. It has been rephrased here, and the question of results is presented separately:
>
> 5. How equitable is the system?
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> Questions one through four describe the framework for analyzing equity; question five involves the application of that framework to suggest conclusions.

FIRST, HOW DO QUESTIONS 1-4 APPLY IN TENNESSEE?

WHO: EQUITY GROUPS

The two groups in which education equity researchers are generally interested are students and taxpayers. The concern for students was explicitly stated by the Tennessee Supreme Court in its unanimous opinion in Small Systems I:

> . . . the disparities in educational opportunities available to public school students throughout the state . . . have been caused principally by the statutory funding scheme, which, therefore, violates the constitutional guarantee of equal protection.[12]

This brief presents seven measures of equity among students and one measure designed to evaluate both student and taxpayer equity.

WHAT: EQUITY OBJECTS

The education finance literature supports analyzing three general categories of things (or objects of interest) to be distributed equitably: inputs, outputs, and outcomes. In order to evaluate the extent to which the legislative intent of the BEP formula has been met, this brief is focused on financial inputs. The traditional objects of interest in analyses of financial inputs are operating expenditures and various compositions of revenues. These data are easily obtainable and are collected uniformly across the United States, including Tennessee. In addition, this type of analysis is generally accepted by the courts.

The literature also describes several levels at which these objects may be measured: the individual student, the school, the educational program within the school, and the school district as a whole. While the ideal level may be the individual student, such detailed data is rare. The most common level of analysis is the district. In Tennessee, the district, or system,

[11] Berne, R. and Stiefel, L. 1984. The Measurement of Equity in School Finance, Baltimore: Johns Hopkins University; Odden, A., and Picus, L.O. 1992. School Finance: A Policy Perspective, New York: McGraw-Hill; Swanson, A. and King, R. 1997. School Finance: Its Economics and Politics, New York: Longman ; IssuesPA. 2003. School Funding Equity, Part II: The Quest to Define Equity. Philadelphia: Pennsylvania Economy League..

[12] Tennessee Small School Systems v. McWherter, 851 S.W.2d 156 (Tenn. 1993).

is the only level at which financial data is available. It is also the level at which the BEP formula is calculated.

WHY: DEFINING EQUITY

In order to decide how to measure equity, one must first decide how to define it. Education equity is generally described as having three dimensions:

1. Equal treatment of equals—horizontal equity: students who are alike should receive equal shares. This principle requires equal expenditures or revenue per student.

2. Unequal treatment of unequals— vertical equity: in some circumstances and for some reasons it is not only acceptable but necessary to treat students differently. Examples include students with learning disabilities and students whose primary language is not English.

3. Equal opportunity: the amount of educational resources and services provided to students should not vary based on illegitimate characteristics such as race, gender, national origin, property wealth, or household income. In some cases, equal opportunity is treated as a condition of horizontal equity.

Vertical equity was not at issue in the lawsuit brought by the small systems in Tennessee. Both the funding formula replaced by the BEP and the BEP itself address issues of vertical equity by including adjustments for differing student needs based on grade level and program, including academic, vocational, and special education.[13]

In Small Systems I, the Court noted that neither equal funding nor sameness was the issue, but rather equal opportunity. The justices centered their rationale for finding Tennessee's education funding scheme unconstitutional on the relationship between dollars spent by a school system and the quality of education its students receive and the fact that the state's funding scheme produced great disparity in the revenues available to the school districts. This is why the focus of this brief is on measurements of horizontal equity.

HOW: MEASURING HORIZONTAL EQUITY

The education finance literature describes at least a dozen measures of horizontal equity. This brief provides an update of the eight measures presented in the 1996 brief and extends the analysis to look specifically at the change in the distribution of state revenue as a result of the BEP to analyze the impact of the new formula on spending equity.

The following is a brief general discussion of the statistics applied to analyze Tennessee data. If all systems spent exactly the same amount per student, the four ratios presented and the coefficient of variation would equal zero; the McLoone and Green indexes would equal one. The TACIR index is applied only to state revenue. If state revenue completely eliminated the disparity in local fiscal capacity, then the TACIR index would equal negative one.

Range Ratio. The range ratio is a traditional measure that compares the most extreme differences within a data set. Here it is calculated by dividing the highest value for expenditures per pupil by the lowest value. This is probably the weakest statistic of all those considered here because it includes only

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[13] Tennessee Code Annotated, §§ 49-3-306 and 49-3-354.

two school systems and gives no indication of equity among the school systems in between.

Federal Range Ratio. The federal range ratio is frequently used in school finance litigation arguments and in the distribution of some federal education funds. It avoids the extremes but, like the range ratio, includes only two school systems and gives no indication of equity among the others. Here it is calculated by dividing the value of the observation at the 5th percentile divided by the value at the 95th percentile with the values arranged in descending order.

Kingsport/Hancock County Ratio. This indicator is unique to Tennessee. It is used here as in the past to illustrate the impact of the BEP on two systems made nationally famous by CNN. The CNN segment has been shown at education conferences to illustrate a stark difference in equity. This index is computed by dividing Kingsport's expenditures per pupil by Hancock County's. It shares the same major weakness as the range ratios.

Top 10/Bottom 10 Ratio. This measure has been used by the Small Systems plaintiffs to support their arguments that the previous funding formula and the current salary provisions violate the Tennessee Constitution. Because this measure includes more systems—and therefore more students—it is arguably more representative than the first three measures described; however, it still suffers from a focus on the extreme values and offers no indication of equity among the majority of school systems.

Coefficient of Variation. The coefficient of variation is a statistic that includes all values in a set of data. A standard parametric statistic, it is based on the differences between each value in the data set and the mean or arithmetic average of all values. It is computed by dividing the standard deviation of the data set by its mean. One weakness of the coefficient of variation is that, because of its dependence on the mean, it is affected by extreme values. Although the standard deviation and coefficient of variation attempt to correct for extreme values, they do not always do so completely.

McLoone Index. The McLoone index uses the median rather than the mean in order to lessen the impact of extreme values. The median is the mid-point value that divides a set of data into two equal parts. The McLoone index is the ratio of the total of the actual expenditures of all districts at or below the median expenditure per student to what their expenditures would be if all such districts spent at the median level.[14]

Green Index. This statistic is unique to TACIR. Developed by and named for the Executive Director, it measures the relationship between the top half and the bottom half of a set of data. The theory of this statistic is that expenditures per pupil for the top half of students should not greatly exceed the expenditures for the bottom half.

TACIR Equity Index. This statistic differs from the others in that it measures equity among the counties both in funding for students and in taxpayer burden by comparing state funding to local fiscal capacity. It is designed to measure both the extent to which the education of the students in each county in Tennessee is equitably funded and the extent to which comparable effort by taxpayers produces reasonably equal funding for education in each county.

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[14] The ratio is inverted as presented here to make it easier to compare to the other measures. Computed in the usual manner, the ratio will be less than one and the higher the ratio, the greater the equity. When inverted, the ratio will be less than one and the lower the ratio, the greater the equity, which is how the other measures presented are interpreted.

Similar or equal taxpayer effort will produce greatly unequal amounts of local revenue from county to county because of variations in the size of local tax bases; therefore, state funds should be distributed in inverse proportion disproportionately in order to ensure reasonably equal funding overall.

This measure involves correlation analysis, which produces values between +1 and –1. In this case, as noted earlier, if the distribution of state revenue compensated perfectly for differences in local fiscal capacity, then the TACIR index would equal negative one.

EDUCATION EQUITY IN TENNESSEE: WHAT HAS THE BEP ACHIEVED?

The application of these eight measures to the first year of full BEP funding indicates education finance equity improved substantially as the formula was phased in and thereafter. No definitive standard that would indicate a minimum acceptable degree of equity has been set for any of the measures described. Given that not all systems have exactly the same compliment of students in terms of their

needs, it is inappropriate to expect that any of them would equal exactly zero (0) or one (1). Nevertheless, the measures are valuable as trend indicators.

The years chosen for the analysis represent the last year of the previous funding formula, the Tennessee Foundation Program (TFP) as a base year (fiscal year 1992), the first year of full funding (fiscal year 1998), and the most recent year for which data is available (fiscal year 2008). All trends presented are based on comparisons to fiscal year 1992. Additionally, the fifth column in Exhibits A and B ("Change from 1991-92 to 2002-03") serves as a reference point to illustrate the changes (or lack thereof) between fiscal year 2003 (the year of TACIR'S last update) and fiscal year 2008.

All seven of the equity indicators presented in Exhibit A improved between the base year (fiscal year 1992) and 2008, and between full funding (fiscal year 1998) and 2008; however, the results for fiscal year 2008 seem relatively unchanged when compared to fiscal year 2003, when this analysis was last conducted.

Exhibit A

Spending Equity Measurements for Tennessee

Equity Measure	Base Year 1991-92	Full Funding 1997-98	Last Report 2002-03	Change from 1991-92 to 2002-03	Fiscal Year 2007-08	Total Change Since 1991-92	
Range Ratio	2.23	2.12	1.84	-0.39%	1.87	-0.36	-16.30%
Federal Range Ratio	1.60	1.53	1.43	-0.17%	1.44	-0.16	-9.80%
Kingsport / Hancock Ratio	1.54	1.30	1.15	-0.39%	1.08	-0.46	-30.10%
Top 10 / Bottom 10 Systems	1.65	1.68	1.48	-0.17%	1.51	-0.14	-8.60%
Coefficient of Variation	0.16	0.14	0.12	-0.04%	0.11	-0.05	-30.80%
McLoone Index	1.10	1.07	1.08	-0.02%	1.06	-0.04	-3.00%
Green Index	1.31	1.26	1.23	-0.08%	1.23	-0.08	-5.90%

All statistics are based on expenditures per pupil (average daily membership [ADM]) from the Tennessee Department of Education.

If the four ratios and the coefficient of variation equal zero (0) and the two indexes (McLoone and Green) equal one (1), then all the school systems in the state are spending the same amount on each student. The closer the first five indicators in Exhibit A are to zero (0) and the McLoone and Green indexes are to one (1), the greater the equity across the state.

The extent to which the improvement in spending equity resulted from changes in the distribution of state revenue may be judged in part by applying the same equity measures to revenues. Exhibit B shows the results of applying the seven equity indicators plus the TACIR index to state revenue. In this case, the farther the four ratios and the coefficient of variation are from zero (0) and the farther the McLoone and Green indexes are from one (1), the greater the differentiation among school systems in the distribution of state revenue. The closer the TACIR index is to negative one (-1), the more effective the state formula is in compensating for differences in local fiscal capacity.

The coefficient of variation and the McLoone and Green indexes show most clearly how little differentiation among school systems in the distribution of state revenue existed before implementation of the BEP formula. The TACIR index, which is the one measure that directly incorporates local fiscal capacity, illustrates most clearly the improvement in the degree to which the new formula compensates for local variations.

As Exhibit B illustrates, the degree of differentiation among school systems in the distribution of state funds increased substantially through full funding, stabilized through fiscal year 2003, and continued to improve through the time of this report. All of the equity indicators presented in Exhibit B improved since the base year (fiscal year 1992), full funding (fiscal year 1998), and fiscal year 2003. The TACIR index remained almost the same compared to fiscal year 2003, however.

Exhibit B
Equity Measurements Applied to State Revenue in Tennessee

Equity Measure	Base Year 1991-92	Full Funding 1997-98	Last Report 2002-03	Change from 1991-92 to 2002-03	Fiscal Year 2007-08	Total Change Since 1991-92	
Range Ratio	1.58	2.12	2.15	1.357	2.52	0.93	58.74%
Federal Range Ratio	1.17	1.69	1.7	1.455	1.95	0.78	66.52%
Kingsport / Hancock Ratio	1.14	1.82	1.77	1.55	1.92	0.78	67.93%
Top 10 / Bottom 10 Systems	1.32	1.73	1.73	1.31	2.05	0.73	55.17%
Coefficient of Variation	0.07	0.14	0.14	1.881	0.17	0.09	125.93%
McLoone Index	1.03	1.12	1.12	1.088	1.2	0.17	16.21%
Green Index	1.08	1.25	1.31	1.215	1.36	0.28	26.00%
TACIR Index	-0.32	-0.87	-0.87	2.719	-0.89	-0.57	179.13%

All statistics are based on state revenue and average daily membership (ADM) from the Tennessee Department of Education.

CONCLUSION: PROGRESS BUT NOT ENOUGH

The intent of the General Assembly to provide fair and equitable funding by implementing a formula that compensates for differences in local fiscal capacity was largely met by the BEP. Horizontal spending equity improved as the new formula was phased in, continued to improve through full funding, and a comparison of state funding to the TACIR method of determining fiscal capacity indicates that fully funding the BEP played a strong role in the improvement.

Despite the fact there have been gains in education equity and that state revenue is increasingly differentiated, spending equity indicators have stalled in recent years. These stalled measures indicate the equalizing effect of state revenue has been too small to offset differences at the local level. It may be that some local governments have reduced their own education spending efforts and replaced some of their local spending with state funds, though maintenance of effort requirements would minimize this effect. Over time, local governments could nonetheless fail to increase local spending as much as they would have without additional state funds, reducing the equalization effect of the BEP. Another possibility is the concentration of wealth in certain systems. Moving forward, these are important areas to examine to understand why spending equity has fallen flat in light of the state revenue equity indicators.

Given the differences in the needs of individual students—and the fact that they vary from system to system—measures of horizontal equity should not be expected to reach statistical perfection. Indeed, as the Supreme Court indicated in Small Systems I, the issue is neither perfect equality in funding nor sameness. The pursuit of equity in spending will always be an important issue in education finance. Statistical measures, including the ones discussed in this brief, will allow researchers and policymakers to recognize and follow emerging education finance trends in Tennessee.

Why is spending equity important? The literature and data illustrate higher spending correlates with better student performance. Better student performance is linked to increased high school and college graduation rates, greater employment opportunities, and improved quality of life. Increased spending equity ideally leads to similar outcomes for students of disparate socioeconomic backgrounds,[15] which was the primary intent of the General Assembly in passing the EIA. In light of Tennessee ranking 46th overall in the 2009 Annie E. Casey Foundation's *Kids Count Data Book* (which annually ranks states on ten indicators of child well-being), education spending equity is clearly an area to pursue for the welfare of Tennessee's future.

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[15] Levin, B. 2003. Approaches to Equity in Policy for Lifelong Learning. Paris: Organisation for Economic Co-operation and Development.