Selected Fiscal Issues in the BEP 2.0

A report to the Governor's Office of State and Planning Policy

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Introduction

Tennessee's method for funding K-12 education underwent a number of important changes in the last year, but the existing system still faces a wide range of challenging policy problems. In this report, we examine three of the most pressing issues that continue to shape debates on education funding. First, we examine the tax bases used within the Basic Education Program (BEP) 2.0 to determine each county's fiscal capacity by analyzing the impact of tax incentives and other revenue sources. Next, we consider the treatment of counties with multiple Local Education Agencies (LEAs) in Tennessee's education funding formula and present possible methods to address the funding differential arising when one county contains multiple LEAs. Finally, we move from revenues to expenditures and detail approaches to geographic cost adjustment taking into consideration the phase-out of the Cost Differential Factor (CDF) in Tennessee. This report illustrates many unique aspects of Tennessee's current system among states, but where possible we look to other states' approaches to the ongoing challenges in educational finance to gather new ideas and best practices.

I. Defining Tax Bases for Fiscal Capacity

The general purpose of the fiscal capacity formula is to provide a method for sharing the burden of local education funding between local governments across the state. Fiscal capacity is defined as the relative ability of local governments to generate revenue from own sources. Two approaches are currently used to measure fiscal capacity in Tennessee.

TACIR Model

The original BEP used a fiscal capacity measure that is prepared by the Tennessee Advisory Council on Intergovernmental Relations (TACIR). The TACIR fiscal capacity index uses a modified regression-based approach. This formula estimates the dollar amount per pupil that each county can raise to fund public education based on a number of factors. The starting point for the regression model is actual revenue per pupil raised by the 95 counties. From this, regression analysis is used to determine weights for each of the factors included in the model. The weights are multiplied by county-specific values to estimate per pupil capacity for each county. Then, each county's total fiscal capacity is the per pupil capacity multiplied by the number of students in the county. The county fiscal capacity index is equal to the county's fiscal capacity divided by the statewide total capacity (Green et al. 2005). The TACIR approach is being phased out in the BEP 2.0.

Fiscal Capacity in BEP 2.0

Several goals were the focus when designing the fiscal capacity methodology for BEP 2.0. First, the formula is intended to be simple and transparent and to provide a reasonable relative measure of the fiscal capacity of counties. Second, the formula is designed so that local government decisions cannot make strategic decisions to alter their relative fiscal capacity. Local governments have an incentive to adjust their behavior to

lower fiscal capacity if they can influence their relative level. Further, local governments can shift the cost of their decisions to other cities and counties if their decisions influence their fiscal capacity, since it is the relative fiscal capacity that is used to calculate each local government's cost in the BEP.

In the BEP 2.0 the state is transitioning to a more simplistic approach because of the complexity and lack of transparency of the regression based approach. The BEP 2.0 methodology more closely reflects the approach developed by the U.S. Advisory Commission on Intergovernmental Relations (ACIR) in the 1960s. This approach applies uniform tax rates to a standard set of tax bases. In the BEP 2.0, fiscal capacity is estimated by multiplying each county's sales tax and property tax base times the average tax rate for each tax base across the state. The tax rates are calculated as the average use of each base by local governments for education.

The fiscal capacity measures each county's relative potential ability to fund education from its own sources. The approach uses the two major local sources levied for education in Tennessee, local option sales tax and property tax. Each county's fiscal capacity index is calculated relative to the total of all counties' fiscal capacities, yielding each county's fiscal capacity as a percent of the total local fiscal capacity.

The BEP 2.0 methodology differs from the TACIR approach in several ways. First, average tax rates in the BEP 2.0 (which are weights in the calculations) are arithmetically calculated using actual government reliance on each base to raise revenues for education. Second, the tax bases for each county are calculated somewhat differently and more broadly, as described below. Third, the methodology depends only on actual tax bases and not other factors such as income or expenditure needs.

Comparability of Tennessee's Fiscal Capacity Measure to That Used in Other States

Fiscal capacity is used in 48 state formulas for determining the relative contribution of local governments to education. However, Green and Chervin (2006) point out that comparing Tennessee to any other state is difficult due to the inherent differences associated with multiple types of LEAs (county, city, and special school districts) that have complicated local funding arrangements. Comparisons are made more difficult because no Tennessee LEAs have the capacity to impose taxes while all school systems in most other states have taxing authority. Tennessee independent school districts have quasi-taxing authority but are reliant upon the Tennessee General Assembly to enact any tax rate.

In 2002, 90 percent of the public school systems in the United States were independent school districts. Green and Chervin note that "to be considered a model for Tennessee, a state would have to have more than one type of local jurisdiction funding public schools, the jurisdictions would have to have multiple sources of local revenue, and some would have to be fiscally dependent on other local jurisdictions to fund their schools".

In Tennessee, public education is provided by LEAs. These LEAs may be county, city, or special school districts. Currently, Tennessee has 136 LEAs, of which 94 are county districts, 27 are city systems, and 15 are special or independent school districts. While most Tennessee counties have only one LEA – the county school system – a large minority of counties contains multiple LEAs. Thirty-two counties contain at least two different school systems.

Most states have only one type of local jurisdiction operating school systems, with the typical school system being the independent school district that also has taxing authority. In fact, 36 of the 50 states provide public education solely through the use of a single type of school system, such as the independent school systems. These states are not comparable to Tennessee since they only have one type of jurisdiction offering education.

The remaining 14 states, including Tennessee, provide public education through more than one type of jurisdiction.[1] Of these states, only Tennessee has different types of school systems with different fiscal authority. All of the remaining states, except Rhode Island, measure fiscal capacity to establish the appropriate distribution of state funding to the local school systems. With the exception of California, most of these states use only the property tax base when considering own-source revenues as a measure of fiscal capacity.[2] Tennessee and Virginia are the only two states that use both the sales tax base and the property tax base in measuring fiscal capacity (Green and Chervin, 2006). Of course, local option sales taxes are more important to Tennessee local governments than they are in almost any other state. This is shown below in Table 1 where the percentage of local option sales tax to local tax revenue from own sources for Tennessee is approximately 24 percent compared to the United States percentage of approximately 11 percent. Furthermore, counties in Tennessee must allocate one-half of local option sales tax collections toward education and expend these collections in the same manner that property tax collections are distributed for school purposes (T.C.A. § 67-6-712(a)(1)).

[1] The remaining states include Alabama, Alaska, Arizona, California, Connecticut, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, Tennessee, and Virginia.
[2] California uses a unique measure of local fiscal capacity through district revenue limits based on historical district expenditure patterns.

Table 1: Local Option Sales Tax as a Percentage of Local Tax Revenue *			
State	**Percentage**	**State**	**Percentage**
United States	11.16%	Alaska	14.45%
Arkansas	50.23%	Kansas	13.97%
Louisiana	49.73%	Iowa	11.07%
Oklahoma	39.48%	Texas	10.71%
Alabama	38.60%	North Dakota	9.57%
New Mexico	37.47%	Nebraska	9.02%
Colorado	29.73%	Ohio	8.22%
Arizona	24.83%	Virginia	8.12%
Tennessee	**24.25%**	Illinois	5.13%
Missouri	23.28%	Nevada	4.36%
South Dakota	21.31%	Florida	3.94%
Georgia	19.93%	Wisconsin	3.16%
North Carolina	18.92%	South Carolina	2.85%
Washington	18.42%	Vermont	1.33%
Utah	18.01%	Minnesota	1.29%
Wyoming	17.16%	Pennsylvania	1.03%
New York	16.58%	Kentucky	0.32%
California	15.79%	Mississippi	0.05%

* States not shown had zero percent.

Source: U.S. Census Bureau, State and Local Government Finances, 2004-05

Therefore, while it is interesting to understand what other states evaluate when measuring fiscal capacity, no other state is comparable to Tennessee due to the "variety of school system types in combination with the complex fiscal powers and interrelationships among school systems that exist in Tennessee" (Green and Chervin, 2006).

Measuring Tax Bases for BEP 2.0

Fiscal capacity in BEP 2.0 is based on two tax revenue sources for each Tennessee county: Local option sales tax and property tax. Measuring each county's tax base is essential to obtain an accurate estimate of the relative fiscal capacities. This section examines some potential issues in defining the appropriate sales and property tax bases and specifically whether various potential components of the base should be included for BEP 2.0 purposes. The criteria for deciding what should be included for BEP 2.0 estimates include:

- Seeking to accurately measure the total property and sales tax base for each county;
- Including all activity that is broadly defined by state legislation to be part of the local tax bases; and
- Defining the bases so that a county's decisions cannot affect its fiscal capacity.

Local Option Sales Tax Base

The local sales tax base rather than the state sales tax base is used in BEP 2.0. Local taxable sales are limited to the first $1,600 of taxable transactions for any single item, and several other small differences exist between the state and local tax bases. A local option sales tax rate up to 2.75 percent can be imposed on taxable sales, though this rate is not used directly in BEP 2.0.

The BEP 2.0 measures the sales tax base by dividing all local option sales tax revenue received by local governments in a county by the local option tax rate. The Tennessee Department of Revenue (TDOR) provides data on the gross amount of all local sales tax for each county, including telecommunications tax and local use tax. The only adjustment made in this calculation is to subtract the additional revenue received by cities in cases where the city rate exceeds the county rate (because the added revenue simply means a higher tax rate and not additional tax base).

The remainder of this section considers whether adjustments in the base should be made for specific types of tax incentives. The primary consideration is whether adjusting the BEP 2.0 base for these incentives encourages local governments to offer the incentives and therefore reduces the base for BEP 2.0 purposes resulting in less accurate measures of the county's relative tax base. The section examines the appropriate treatment of two areas that local governments may choose to define: Tourist Development Zones and Sports Authorities. The value of taxable sales in both types of areas is already included in the TDOR data.

Tourism Development Zone

A Tourism Development Zone (TDZ) in Tennessee is a "municipality designated by ordinance or resolution of such municipality in which a qualified public use facility is located or planned (T.C.A. § 77-88-103(10))." Four tourism development zones exist: Chattanooga, Knoxville, Memphis, and Sevierville. The zone must include a beneficially impacted area with the incremental increase in sales tax derived from goods and services within the zone being apportioned and distributed to the local government (T.C.A. § 77-88-106(a)). Revenues received by local governments from activity inside the TDZ are appropriately included in the local option sales tax base for BEP 2.0 purposes. This is consistent with the base used for BEP 2.0 purposes being determined by the broad state tax definition, independent of the influence of local decisions on the allocation of tax revenue. The sales tax revenue has simply been earmarked to pay for the qualified public use facilities.

Sports Authorities

Sports Authorities are designed to plan, promote, and further develop recreational opportunities in Tennessee (T.C.A. § 7-67-102). This is accomplished through purchasing equipment and constructing buildings and structures. These authorities also include the planning and designing of areas that extend beyond the recreational facilities.

While the actual Sports Authorities are exempt from taxation, transactions in the areas around sports authorities act in much the same way as the tourism development zones, with the incremental increase in sales tax being earmarked for certain obligations of the local government (T.C.A. § 7-67-114). Five Tennessee cities have sports authorities: Jackson – Diamond Jacks Softball Complex; Memphis – Redbirds and Grizzlies; Nashville – Predators and Titans; Sevierville – Tennessee Smokies; and Wilson – Nashville Motor Speedway. Again, transactions in Sports Authorities are appropriately included in the local option sales tax base. This is consistent with the base used for BEP 2.0 purposes being determined by the broad state tax definition independent of the influence of local decisions on the allocation of tax revenue. The sales tax revenue has simply been earmarked to pay for the qualified public use facilities.

Property Tax Base

Tennessee local governments tax both real and personal property with property divided into different classes that are assessed at different rates. The following lists the different property classes in Tennessee and their constitutionally determined assessment rates:

Residential Property	25%
Farm Property	25%
Commercial and Industrial Property	40%
Public Utility Property	55%
Business Personal Property	30%

The same tax rate is applied to the assessed value of all classes of property with no cap on the tax rate, meaning the effective tax rate varies with the assessment rate. As a result, commercial and industrial property is taxed more heavily than residential or farm property in Tennessee, and public utility property is taxed most heavily.

The Tennessee Division of Property Tax, Office of the Comptroller provides property tax data that are the beginning point for measuring property tax bases for BEP 2.0. The fiscal capacity definition relies on assessed property tax values rather than full value because counties are required to impose the tax on assessed value. Exempt property, such as property owned by governments and certain not-for-profit organizations, is excluded in calculation of fiscal capacity since the broad definition of exempt property has been made by the State and applies evenly to all places.

Through the granting of tax incentives, counties and cities make several determinations that have potential implications for the property tax base. This section examines how the property values associated with the incentives should be treated in the fiscal capacity formula. An important consideration in the evaluation is whether local government decisions to grant incentives would reduce the fiscal capacity of a county. In these cases, it may be appropriate to add the foregone tax base to the county's taxable base for purposes of calculating the county's fiscal capacity. This prevents a county from granting a tax incentive to a firm and sharing the cost with all counties in the state through the fiscal capacity formula. It also reduces the counties' incentives to make such decisions

and causes the county to do so only if the benefits equal the costs from the effects on the county alone. The following reviews treatment of four categories of property in terms of whether they appropriately belong in the property tax base for calculation in the fiscal capacity formula.

Industrial Development Bonds

Counties and cities can issue industrial development bonds to finance the construction or purchase of industrial buildings for lease to private businesses (T.C.A. §7-37-106), and counties and cities can establish industrial development corporations to issue bonds for the lease or sale of industrial property (T.C.A § 7-53-303). Industrial development corporations have the "authority to negotiate and accept from the corporation's lessees payments in lieu of ad valorem taxes" (PILOTs) (T.C.A. § 7-53-305). The PILOTs are set as the lesser of the ad valorem taxes otherwise due based upon the current fair market value or the taxes that would be due based on the value of the property immediately preceding the date of acquisition (T.C.A. § 7-53-305(b)). Although the PILOT is based on the amount of taxes that would be owed, the law does not require a formal appraisal but rather simply a good faith estimate of value of the property. The process is significantly improved if the county's property tax assessors value this property, a position also taken by the Division of Property Tax.

Industrial development bonds are issued based on local decisions and the value of property should be included in the property tax base for BEP 2.0. A case may be made that a few of the largest incentives in Tennessee represent decisions that are substantially influenced by the state and provide broad value in terms of new employment for multiple counties. In these cases it might be appropriate to place a cap on the value that is included in the property tax base that is used for calculating the county's fiscal capacity.

The value of property financed through IDBs is not included in the assessed property tax data obtained from the Office of the Comptroller and must be separately added to each county's tax base. The Office of the Comptroller is also responsible for collecting data on IDBs, and these data are added to the property tax data obtained from the Division of Property Tax that were described above.

Tax Increment Financing Projects

Tax increment financing (TIF) projects are used to allocate the tax generated from a specific project to finance activities associated with the area in which the project is located (T.C.A. § 13-20-205). The idea of the TIF projects is similar to those with Tourism Development Zones and Sports Authorities; however, these tax incentives relate to property tax rather than local option sales tax. These incentives represent local decisions on how to allocate tax revenue and the related assessed values should be included in the property tax base when calculating the fiscal capacity index. The property tax base associated with TIF projects is already included in the property tax data from the Division of Property Tax.

Senior Property Tax Freeze

The property tax on the principal residence for qualifying senior citizens can be frozen at a base amount (T.C.A. § 67-5-705). To qualify for the tax freeze, the taxpayer must own their principal place of residence, be 65 years of age or older, and have income less than the established limit. While each county must adopt the program, the state Comptroller's Office is charged with calculating the income limit for each county. Since this incentive represents a decision made at the local government level, the assessed property value should once again be included in the property tax base for the fiscal capacity calculation. The freeze refers to the tax liability rather than the assessed values. Therefore, these assessed values should already be included in the property tax base.

Public Building Authorities

Public building authorities are developed to aid local governments in refurbishing old and outdated buildings, centrally locating governments that are widely scattered and dispersed, and improving poorly protected and overcrowded spaces (T.C.A. § 12-10-102). These authorities are exempt from taxation and include property that is owned by local governments and is otherwise exempt from taxation (T.C.A. § 12-10-113). Therefore, this tax-exempt property is appropriately excluded from the assessed property value records and is excluded for calculation of fiscal capacity. It should also be noted that the property directly owned by Tourism Development Zones and the Sports Authorities (as opposed to inside their geographic area) is excluded from the property tax base, as both of these entities are tax-exempt.

II. Treatment of Counties with Multiple LEAs

The multi-jurisdictional structure of Tennessee school systems creates a complex fiscal relationship between county and non-county systems, which presents a number of issues with regards to the sharing of local revenue between LEAs in those counties with more than just a county school system. Even in Gibson County, where there are only city and special school districts, the county government provides funding for local education. In Gibson County, there are four city districts and the balance of the county is designated as a special school district with its own quasi-independent taxing authority. Special school districts are not able to levy taxes directly, but rather petition the state legislature for tax increases within their borders to raise revenue for their public schools.

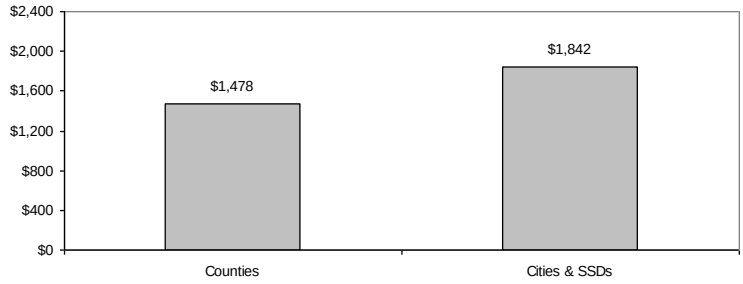
To complicate matters, city school systems are not always confined to one county. A few city school districts span multiple counties, such as Oak Ridge, which is located in both Anderson and Roane counties. These city districts depend on several county governments as well as their own source revenue to finance education.

There are several challenges associated with a complex system of fiscally interdependent school systems. Among these are administrative difficulty and a lack of transparency. Also, most pertinent to this report, it creates funding disparities among city and county systems.[3] Current statutes allow cities to impose their own taxes to fund any allowable public service they wish, including education. Cities are not required to share these funds with other LEAs in the same county. However, as mentioned above, part of a city's education funding is derived from county tax revenue since the county is required to share revenues with all the systems in the county. The method for determining the allocation among school systems is discussed more thoroughly in the next section.

The graph on the following page shows the average total property and local option tax receipts per weighted average daily attendance for county and non-county LEAs. In 2007, cities and special school districts raised almost 25 percent more local revenue per student than counties. The ability to raise additional revenue combined with the fact that all county education funds are shared with city schools, but not vice versa, means city school systems are able to spend more per pupil on education than the county school system by opting for higher local option property and/or sales tax rates. This inequality poses several challenges for county school systems, as outlined later in this section.

[3] From this point forward, any mention of city school systems is meant to include special school districts, unless otherwise specified.

Property and Local Option Tax Revenue per Weighted ADA, 2007



How Local Education Agencies Are Funded

To pay for education, county governments typically impose countywide property and local option sales taxes. Current law caps local option sales taxes at 2.75 percent while there is no statutory cap on property tax rates. Counties are required to spend at least half of all county local option sales tax revenue for education. Other county taxes may also be used to fund public schools.

In counties with multiple school districts, all county funds spent on education are allocated among the districts based on a weighted average of daily school attendance. This figure, known as the Weighted Full-Time Equivalent Average Daily Attendance (WFTEADA), is weighted by grade level and program to account for differential costs associated with providing education to students in various grade levels and/or programs (i.e. special education and vocational classes).

Specifically, TCA §49-3-315(a) states that "all school funds for current operation and maintenance purposes collected by any county… shall be apportioned by the county trustee among the LEAs therein on the basis of the WFTEADA maintained by each, during the current school year."

The WFTEADA for an LEA is calculated by the state Department of Education. For each grade level and program across all schools in a given LEA, the daily attendance is recorded for the first three months of the school year. The two months with the highest attendance figures for each grade/program are averaged, yielding an average daily attendance. Grade and program weights, which are determined by the Tennessee Board of Education and reviewed periodically for potential adjustment, are then applied. Summing these weighted attendance figures across all grades/programs gives the LEA's WFTEADA.

Since the purpose of the calculation is to determine each LEA's share of local education funding, the WFTEADA figures for all LEAs within a given county are added together. Education funds are then allocated to each LEA according to its share of the total county WFTEADA. For example, if a city's WFTEADA accounts for 25 percent of the total WFTEADA of the county in which it is located, it would receive 25 percent of all county funds earmarked for education. Once calculated, the Department of Education sends the breakdown of LEA shares to the County Trustee, who then distributes county funds

accordingly as tax revenue is collected. Of course, this calculation is unnecessary in counties with a single school system (only the county schools) since there is no need to divide county funds.

City governments are also able to impose additional property taxes that apply only to property located within the city's boundaries. Again, these rates are not capped by law. City governments are also able to impose local option sales taxes up to the point at which the local option county and city rates are a combined 2.75 percent. In other words, a city may only impose additional sales taxes if the county in which it is located has set its own local option sales tax rate at a level less than the cap, and then only up to the difference between the cap and the county rate. However, unlike county education funds, any additional revenue collected by the city does not need to be shared with other LEAs. Special school districts are similar to cities in that they are able to impose additional property taxes within their borders. And, like city systems, sharing this additional education revenue with other school systems is not required.

Implications of Tennessee's Treatment

Tennessee's approach to fiscal capacity through BEP 2.0 is arithmetic, so the fiscal capacity of counties can be thought of as the fiscal capacity of the subparts. Thus, the fiscal capacity of the county can be thought of as the capacity of the county as a whole or the fiscal capacity of each place, such as the sum of cities and county area outside of cities. Thus, having multiple districts within a county does not create any unique difficulties in allocating state education funds.

However, the method of one-sided local education revenue sharing prevents county school systems from providing the same level of per-pupil funding as city and special school districts within the same county, should those other districts choose to impose local option taxes. Revenues from any increase in the property tax or local option sales tax by the county are shared with city schools. However, all proceeds from additional taxes levied by the city government go to city schools only. This creates an unclosable gap in per pupil funding between county and city school districts. Even if the county government chooses to set its local option sales tax rate at the state cap of 2.75 percent, thus rendering cities unable to impose its own higher rate, city governments are still able to increase education funding through uncapped increases in city property tax rates or some other revenue source.

The ability of city governments and special school districts to provide higher amounts of per pupil education funding and set higher sales and property tax rates creates a number of challenges for county school systems. Among these are the diminished ability of the county to tax the city-specific property tax base (for political reasons, not legal restrictions), the capacity to attract more highly qualified teachers, and the potentially lower quality education received by county school students compared to students in city and special school districts.

Under the current rules, the school districts share part of their tax base with each other. Since the city districts are physically located within counties, their tax base is also part of the county government's tax base. Suppose a city government has imposed a local option sales tax in excess of the countywide rate. Counties in which voters decide to increase the countywide rate to provide more education funding for their county school system (and city school funding by default, through the sharing requirement) would likely meet stronger resistance from city residents since they are already taxed at a higher rate than those who live in the county. Relatively low-tax areas (counties) may be more likely to support tax increases for education than relatively high-tax areas (cities) since their current tax burden is lower. In addition, city residents are less likely to support a county tax rate increase than a city increase because they are only able to keep a share of the county tax increase as opposed to the entire amount of additional revenue generated by a city tax increase. The increase in the county rate will require that the additional revenues already being raised in the city as well as new revenue raised outside the city be shared on a per pupil basis across all LEAs in the county. City school systems will receive less revenue in this case if the per pupil base is higher in the city than outside the city. Cities are more likely to have a higher per pupil tax base because of their ability to annex commercial areas in the county.

Because of these reasons, city residents have the incentive to keep county local option tax rates low, enabling them to capture a larger amount of education revenue. This could be particularly problematic if the city is large with respect to the county or if city residents have a disproportional influence in the county government. The political clout of city residents could be sufficient to block increases in county education spending funded through county tax increases.

The ability of cities to create and sustain a higher level of per pupil funding through the imposition of local option taxes potentially gives them an advantage in hiring the most qualified teachers. A larger per pupil education budget allows city systems to pay teachers more than the county system can. This logic applies to all aspects of delivering public education. In addition to luring the best teachers, city schools are able to buy more computers, provide more activities, and build nicer facilities than the county system. Just as outlined in the preceding paragraphs, this gives city residents the incentive to keep county local option tax rates low, enabling them to capture a larger amount of education revenue than if a higher county rate was imposed and the revenue was shared with other jurisdictions in the county.[4]

Other State Approaches to Local Education Funding

As noted above, the fiscal structure of the Tennessee public education system is unlike that of any other state. While there are some states that have school systems operated by more than one type of governing body (i.e. city, county, township, state, etc.), the different jurisdictions in those states do not have different fiscal authority. That is, they all have the same taxing authority. Additionally, no revenue is shared between

[4] Cities are better off with low county rates and high city rates if the city share of WFTEADA is lower than the city share of the total county tax base.

jurisdictions in states with more than one type of educational system (see Green and Chervin, 2006).

Possible Methods to Address the Funding Gap

No means exists to solve completely the dilemma arising with multiple districts within a county given Tennessee's funding approach, the incentives that are created for local governments, and the propensity of cities to annex property. There is a wide menu of options that could be employed to address the funding gap between county and city/special school districts, from small changes in the county revenue sharing formula (WFTEADA) to more widespread changes in the fiscal authority of counties, cities, and special school districts. None of these are perfect, but they each limit the perverse effects of the current structure.

1) Alter the Sharing Requirement for County Funds

One way to address the apparent inequality is to allow the county school systems to retain a higher share of county revenue. That is, relax the requirement that all county funds be shared on a strict per pupil basis. The WFTEADA calculations would still be applicable, with larger school systems and those with a higher number of students in more expensive programs getting a larger share, but instead apply it only to a portion of funds that the county collects for education. In this case, any increase in county tax rates would generate additional education funding for both county and non-county districts (as it would under the current rules), but the county school system would receive a larger increase, at least partially counteracting any local option sales tax or higher property tax rate that the city may have.

A similar option is to eliminate or relax the requirement that all county education funds in excess of one-half of all county local option sales tax revenue be shared on a per pupil basis. Under this proposal, the first half of county education revenues from local option sales taxes would be shared with non-county districts, as it is now, but additional funds spent by county schools would not be shared with city and special school districts. This would preserve the fiscal autonomy of non-county districts while providing the county with a means to reduce the per-pupil gap between LEAs. Of course, as already described, cities have an incentive to discourage county rate increases in this case.

2) Require Cities to Share Local Option Revenue

Funding inequalities exist, in part, due to the fact that county revenue is shared with all school systems but not vice versa. Requiring city school districts to share some portion of their education funds from local option taxes with the other LEAs in the county according to the same WFTEADA calculation currently applied only to county funds would help to alleviate the issue. If a given city decided that it wanted to increase education funding through an increase in local option taxes, it would still have the fiscal independence to do so, but other LEAs in the county would receive a per pupil share of

that increase. Of course, this proposal could also be amended to require only a portion of city funding to be shared.

3) Allow County to Tax Non-City Property

Another possible solution is to allow counties with multiple school districts the option of setting a special property tax rate for education that applies only to property outside the boundaries of other LEAs in the county (this can already be done for bonded indebtedness). This tax would fund only county schools, and accordingly, not apply to property within non-county school districts. Countywide sales and regular property tax revenue could still be shared according to current guidelines, but county schools would receive all of the revenue raised from this county property tax rate imposed outside the other LEAs. This would make the non-city areas of the county similar to a special school district in that the county would be able to increase funding for only county schools financed by only county residents. In this case, the only major sources of funding differences among systems in a given county would be from a city local option sales tax (if the county rate wasn't already at the cap), differences in the education preferences between city and county voters as reflected by differing local property tax rates, or differences resulting from the relative location of tax base in the county versus city areas. This approach may not help much since annexation and other factors have led much of the tax base to be inside city school districts and the county may generate relatively little revenue from its additional tax rates.

4) Other Changes to Property Taxes

Other potential changes to property tax rules include instituting a statewide property tax rate for education or instituting a cap for local option property tax rates. The cap would be similar to the current local option sales tax cap in that the combined city and county rates could not be set above a certain threshold. This would limit the ability of cities to impose differential rates that would expand the relative funding differentials between the city and county. If it so chose, a county government could then set its own local option sales and property tax rates at the state-imposed cap. Then, all county education funds would be shared with the city and county districts on a per pupil basis, and no gap would exist. However, county commission members who represent city areas would have the incentive to keep county rates low so that the city has greater flexibility to raise its rate. A similar situation would arise if a statewide property tax were implemented at the county level and shared on a per pupil basis with each LEA.

III. Geographic Cost Adjustment in Education Funding

Twelve states adjust their distribution of state education funding to school districts to account for geographic variation amongst school districts (see Table 2). States' reasoning for a geographic cost adjustment is that funding formulas should not only account for differences in the ability to raise revenues (as is done with the fiscal capacity formula) but also for cost differences that localities incur to provide education. Thus, the argument for a geographic cost adjustment in a state's funding formula is that the state should not penalize or advantage localities because of the cost-related factors over which they have little control. Until recently, Tennessee's main approach to geographic cost variation was the CDF. Some states' formulas provide cost-adjusted funds for all districts, while others—including Tennessee—only rewarded a subset of all systems.

Based on this general argument of variation in uncontrollable costs, states adjust school district funding for a number of specific reasons. The most basic approach is to counteract differences in the costs of education related to a district's size or location. Other states focus on the large portion of costs that teachers' salaries comprise of total education budgets, and thus use a geographic cost adjustment to capture general variations in the cost of living across districts. Finally, some states attempt to account for regional variations in the cost of education, seen most often in geographically large states such as Alaska, where the cost of education is drastically different in remote areas. This section briefly describes the CDF and then how other states address geographic cost differentials.

Table 2: States' Utilization of Geographic Cost Adjustments*

State	Type of Cost Adjustments
Alaska	Cost of Doing Business
California	Cost of Living (Metropolitan Areas)
Colorado	Cost of Living, Small District Supplement
Florida	Cost of Living
Kansas	Small District Supplement
Massachusetts	Cost of Doing Business
New Mexico	Small District Supplement
Ohio	Small District Supplement (Poverty adjustment)
Tennessee	**Cost of Doing Business**
Texas	Hedonic, Small District Supplement
Virginia	Cost of Doing Business
Wyoming	Cost of Living

Source: National Conference of State Legislatures, Murray and Ullrich (2007) and Authors.

The Cost Differential Factor in Tennessee

The CDF has been used since implementation of the BEP to provide additional funding for counties with a relatively high weighted average of non-governmental wages, measured by county. The CDF is being phased out through BEP 2.0. Under the CDF,

Tennessee estimates the cost of hiring people in a county by measuring the average wages of non-government workers in various industries in the county. The weights for each county are the state's average percentage of employment in each of 15 industries that combine to cover all non-governmental wages. Use of weights based on the state average employment structure ensures that differences between counties arise from differences in wages and not from differences in the employment mix.

CDF funding was based on an index calculated for each county that divided its three-year weighted annual average wages by 95 percent of the three-year statewide average wage. The county received CDF funding if the value exceeded one, meaning the county's weighted average wage rate exceeded 95 percent of the state's average wage rate. Specifically, a LEA's BEP wage costs were multiplied by its county's CDF index, thereby increasing the state funding for education in the district. LEAs in counties where average wages were lower than 95 percent of the state average were given CDF values of 1.0 and received no additional funding via the CDF.

On average, 10 counties qualified for the CDF each year between 1992 and 2008. As shown below, five of these counties (10 districts) in Tennessee received the CDF in each of the 14 years, while 13 additional counties (22 districts) received the CDF at least once during that period.

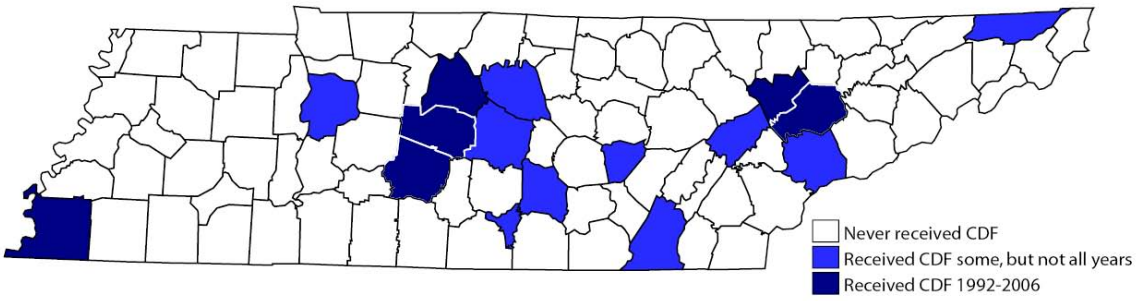
Received CDF from 1992-2008
Anderson County
Clinton City
Oak Ridge City
Davidson County
Maury County
Shelby County
Memphis City
Williamson County
Franklin Special SD

Received CDF for Some (but not all) Years	
Blount County	**Moore County**
Alcoa City	**Roane County**
Maryville City	Harriman City
Coffee County	**Rutherford County**
Manchester City	Murfreesboro City
Tullahoma City	**Sullivan County**
Fayette County	Bristol City
Hamilton County	Kingsport City
Humphreys County	**Van Buren County**
Knox County	**Wilson County**
Madison County	Lebanon Special SD

Figure 1 shows the geographical pattern of the counties receiving additional money via the CDF. As revealed by the figure, most school districts receiving CDF funds were located in or around one of Tennessee's largest cities.

However, over time the pattern shifted because the CDF was calculated a wage index. While originally designed to account for the high cost of hiring workers in center cities, eventually counties with smaller cities, as well as suburban and exurban counties' strong wage growth over this period caused more CDF funds to move away from center cities to suburbs, exurbs and even rural counties. As a result, Knox and Hamilton Counties no longer qualify for CDF funding as of 2007. Blount and Roane Counties qualify for CDF funding, and Williamson County receives almost four times more CDF revenue than in 1993.

FIGURE 1: Counties Receiving CDF Funding , 1992-2006



This shift in CDF funds from center cities to the growing suburbs and exurbs was part of the reason why voters and policy makers lost confidence in the CDF's efficacy. School quality did not noticeably improve in the CDF-funded counties, in part because the CDF was allocated not on education results or teacher quality, but on the strength of the local economy.

Four Approaches for Designing Geographic Cost Adjustment

States use a number of different methodologies to design geographic cost adjustments. One way of analyzing these methodologies is to characterize them by whether they (1) measure the cost of living in a district, (2) the cost of doing business in the area, (3) the attractiveness of an area to potential teachers or (4) the cost of running school districts with similar results in different areas. While each of these approaches attempts to control for differences in the costs of education related to a district's size or location, the results from each approach can provide differing incentives for districts and varying financial results.

1) Cost of Living Adjustments: A Market-Basket Approach

A market-basket approach focuses on costs that are outside of the school's control such as geographically-based differences in the cost of living or wages in other sectors of the economy. The premise is that areas with a high cost of living will have to pay higher salaries to attract employees, thus increasing the cost of education. The cost of living becomes a proxy for the costs of education that cannot be directly influenced by local decision makers. Florida, Colorado and Wyoming collect data on consumer prices to estimate the cost of living in different areas.

One advantage of the market-basket approach is it measures costs that are beyond the control of school district administrators. The consumer price data are outside the control of the LEA, which prevents the feedback into the formula that would happen if the cost of living depended on local school district salaries. Another advantage is that once the index is created, it is relatively straightforward to compare costs between counties.

However, designing and calculating the index in a transparent and easy-to-understand manner is a major challenge with this approach. An example of the issues that arise is the items included in the market basket must be the same in all areas of the state, yet research shows people in urban areas often buy different items than do people in rural areas. Another disadvantage to the market-basket approach is that creating state-level indices can be costly, due to the large amount of high-quality, current data that must be collected in order to make the necessary comparisons.

These indices do not reflect local variations in community characteristics such as climate, crime rates, or cultural amenities, thereby overcompensating districts that face a high cost of living but are attractive places to live (because the high costs in such places are partly the result of high demand to live in the area). Also, because teachers may live outside the district in which they teach, the cost of living index values for districts may misestimate the additional amounts that must be paid to have teachers in high cost of living school districts.

The Florida Price Level Index (FPLI) is a county-level index based on a standard basket of consumer goods. The eventual adjustment takes into account a three-year average and is limited to 80 percent of operating costs. Colorado's Cost of Living Factor is calculated every two years by comparing the differences in the cost of housing, goods and services, transportation, income taxes and miscellaneous expenses by school district. The index is applied directly to personnel. Wyoming's adjustment is based on the Wyoming Cost of Living Index, calculated by comparing prices of 140 different consumer goods including housing, food, medical and transportation.

2) Cost of Living Adjustments: Cost of Doing Business Approaches

A similar cost of living adjustment is to estimate the cost of doing business in an area, thus attempting to compare the cost of running school districts in different areas. Tennessee's CDF is best categorized by this approach, although like most states' adjustments it has aspects of others of these four approaches. Like the CDF, Massachusetts uses a wage adjustment factor calculated using average wage data collected by the Massachusetts Department of Employment by labor market area. It is expected to account for cost of living and salary expectation differences across school districts. Until 2008, Ohio utilized a cost adjustment factor 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 was limited by state law, making the effect much less dramatic. Recent legislation eliminated this cost of doing business factor in Ohio, although the state retained supplemental funding for school districts in areas with high poverty rates.

Alaska applies an Area Cost Differential to non-teacher personnel costs and administrative costs by comparing the cost of running an identical school in Anchorage to those in rural areas because rural schools in Alaska generally face increased costs due to transportation and climate considerations. Similarly, Virginia adjusts its funding formula for nine high-cost school districts in northern Virginia near Washington, D.C.

3) Cost-of-Education Adjustments: Using a Hedonic Wage Index

A hedonic wage index is constructed based on an analysis of school district expenditures that is designed to capture the effects of cost factors that are beyond the control of school districts. Expenditure data can be used to generate the cost of providing a comparable level of educational services by estimating the amount each district would have to spend to hire a typical staff.

The principle underlying a hedonic wage index is that school districts will typically pay more for teachers who have advanced degrees because of the perception that such teachers will teach more effectively. Similarly, some teachers may accept a lower salary from a certain district because it is located in a community that offers attractive cultural amenities. The hedonic wage index attempts to describe relationships between wages and the personal characteristics and job skills of individuals. It accounts for the fact that workers will choose a job, and employers will hire a worker, that proves satisfactory for both monetary and non-monetary reasons.

Texas is the only state that uses some features of the hedonic approach and the cost-of-education approach. The model is a teacher cost index that uses information from a variety of sources to identify the relative attractiveness of a given teaching opportunity and accounts for differences in resource costs that are beyond the control of the district. The index takes into account district size, county population, the percentage of low-income students and teacher salaries. Specifically, the five components of the Cost of Education Index are: 1) the average beginning salary of teachers in contiguous school districts, 2) the percent of economically disadvantaged students, 3) district size (in terms of average daily attendance), 4) location in a rural county (with a population of less than 40,000), and 5) whether the district is classified as an "independent town" or "rural." The CEI is based on a 1991 regression analysis of factors that affect variation in payroll costs among districts. It is applied to 71 percent of the basic allotment. The resulting weight varies from 1.02 to 1.20 of the base funding level. Recent court cases commissioned new studies on the CEI and the legislature is considering updates to the current formula with new data and methods.

4) The Cost-of-Education Approach: Using a Production Function Model

The production function approach uses expenditure data to determine the cost of producing comparable educational outcomes by estimating the amount each district would have to spend to achieve a certain level of educational achievement (usually set at the average level of educational achievement). Tennessee's current BEP formula takes into account a number of cost factors on a per-pupil basis in its 45 categories, some of which can be correlated with geographic factors. For example, the BEP adjustments for English Language Learners, at-risk students and special education students allow adjustment for student needs, as well as costs of materials and supplies on a district level.

This approach is perhaps the most ambitious because it focuses on the costs associated with actually realizing gains in educational performance. Instead of using indirect proxies of education cost differences like the cost of living approach, it directly examines actual school district expenditures. Specifically, a production function model goes beyond the direct comparison of district expenditures by using regression analysis to estimate the cost of providing equivalent levels of educational services or outcomes. Regression analysis allows researchers to separate the effects of cost factors under the control of school district administrators from cost factors beyond their control.

The ability to capture the effects of different kinds of cost factors means that the cost-of-education approach can be used to take account of the effect of amenities in different regions, factors that are not considered in most cost of living adjustments. For states that already collect data on teacher salaries and district expenditures, it is much less expensive to construct a cost-of-education index than to apply a market basket approach. However, existing patterns of expenditures may not be cost minimizing. Therefore, local decision makers may be able to manipulate district expenditures so that high spending districts get the biggest reward in state funding. This type distortion in incentives is a challenge in most formulas.

Another disadvantage is that a proper accounting for the relevant uncontrollable and discretionary cost factors may be difficult because of incomplete theoretical guidance, measurement difficulties, and missing data. Effectively, this means that regression analysis must be very carefully specified for this approach to be useful. For example, important differences in teacher quality may not be observable in the data. If unobservable teacher quality is correlated with observable characteristics, a cost-of-education index could be biased. Although there is a lack of adequate data and complete theoretical specification for this model to have widespread use in practice, in recent years these models have been used in several states for research and as arguments in litigation. Research in Texas was crucial evidence in a recent court decision on education funding, and studies were also used in New York and Wisconsin.

Looking Forward: Designing a Better Geographic Cost Adjustment

The decision to phase out the CDF from Tennessee's education funding formula provides an opportunity to consider best practices identified by researchers, policy analysts, economists and policymakers in other states and at the federal level. Various approaches for designing geographic cost adjustments have received increased attention from the education finance research community as discussion in states shifts from arguments concerning fiscal equity to fiscal adequacy.

Policymakers often believe that any changes must be made in reference to the current system, and thus each state's experience will be very different. Each state's adjustment responds to different perceived types of funding inequity. Further, other portions of the funding formula, such as funding for English as Second Language (ESL) teachers, may already be addressing some geographic cost variations. Policymakers can also consider

that the most effective opportunity for change may occur when a particular aspect of the formula is not under scrutiny, as it is during litigation.

Researchers urge those designing or updating formulas to keep geographic indices as simple and understandable as possible. However there are also important tradeoffs between sophistication and simplicity in models like the hedonic wage index. Researchers acknowledge that no perfect index exists, but urge policymakers to strive to reach consensus about how extensively they wish to adjust the formula while acknowledging that each approach has flaws. To ease adjustments to new systems, policymakers can provide for gradual phase-ins, consider "leveling up" strategies and take advantage of inflation. Policymakers can also place primary emphasis on supporting the further improvement of the available indices. Even the least contentious models require repeated analysis. For example, many states use legislation requiring a periodic review of the methods or indices.

As previously mentioned, funding formulas can inadvertently provide divergent incentive systems, especially at the district and county level. In order to minimize these unintended incentives, formulas should attempt to separate and distinguish influences that are controllable by the school, and possible issues that can arise if data on district-controlled expenditures are used as an input in the model. Additionally, when adjusting existing formulas, researchers encourage policymakers to be careful of double counting when adding new adjustments to an existing formula.

Although no consensus exists on the "right way" to adjust state education funding, research and experiences of other states indicate that the most appropriate and successful adjustments take into account the state's unique geographic, economic, demographic and cultural features. As a state with large variations among districts, Tennessee can look to the experiences of Florida and Texas where policymakers have grappled with similar issues caused by differences between rural, suburban, exurban and urban districts. These states continue to adjust their formulas, partly in response to legislation, but continue to utilize transparent indices that account for uncontrollable variations in school districts' costs.

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