

# **School Finance Reform in Texas: A Never Ending Story?**

By

Jennifer Imazeki  
Department of Economics  
San Diego State University  
5500 Campanile Drive  
San Diego, CA 92182  
(619) 594-5012  
jimazeki@mail.sdsu.edu

and

Andrew Reschovsky  
Robert M. La Follette School of Public Affairs and  
Department of Agricultural and Applied Economics  
University of Wisconsin-Madison  
1225 Observatory Drive  
Madison, WI 53706  
(608) 263-0447  
reschovsky@lafollette.wisc.edu

May 2003

The authors wish to acknowledge helpful comments by Timothy Gronberg, Allan Odden, and John Yinger and the very able research assistance of Heather Priess.

## I. Introduction

For over 30 years, the courts in Texas have been challenging the legislature to develop fairer and more equitable ways to finance public education within the state. On a more or less continuous basis, a stream of court cases has challenged the financing of K-12 education in Texas. This paper will review this judicial history, evaluate the success of the current system of school finance in achieving various school finance equity goals, and attempt to assess the on-going school finance issues that Texas will face over the next few years.

With over four million students, the public school system in Texas is the second largest in the United States, currently educating nearly 10 percent of all public school students in the U.S.<sup>1</sup> Together the state's 1,036 regular school districts had \$26.2 billion in revenue for the 2000-01 school year. Of this total, the federal government contributed 3.4 percent, the state government 43.6 percent, and local school districts the remaining 53 percent. In 1998-99, the latest year for which national data are available, current expenditures per pupil in Texas were \$5,685, a figure that was more than \$800 per pupil below the national average and placed Texas 34<sup>th</sup> in per pupil expenditures among the 50 states.

From a national perspective, Texas is a particularly interesting state to study. School finance in Texas has been largely shaped by a series of important court cases. They have been based on the full range of arguments used to challenge systems of public school finance in the United States, from equal protection cases, to well articulated arguments for fiscal neutrality, and, most recently, to arguments that school system must provide all students with an *adequate* education. Texas is also interesting for the responses it has made to the court challenges. To achieve fiscal neutrality, it has implemented an innovative system of state aid that combines a

foundation formula, a guaranteed tax base formula, and caps on the tax capacity of wealthy districts. In addition, Texas has recognized that certain characteristics of school districts and of students raise the costs of providing education. Its response has been to adjust its state aid formulas in ways that attempt to account for the full array of factors that have been found to be systematically related to the costs of education. Finally, Texas has been in the forefront in establishing student performance goals based on a set of standardized tests and using these tests to assess the performance of schools and school districts. Given the Texas background of the President and the Secretary of Education, there can be little question that the early adoption of an accountability system in Texas influenced the focus on school accountability in the recently enacted reauthorization of the federal Elementary and Secondary Education Act.

In the next section of the paper, we review the history of school finance litigation in Texas and chart how over the years, the state legislature has responded to the various court rulings. We then describe in detail the current system of school finance and explain how the state's rather complex multi-tiered system of state aid formulas works. In section 4, we assess how well the state responses have met the equity goals established by the courts. In section 5, we attempt to assess whether the current Texas school finance system allocates resources among school districts in a manner that will enable all school districts to meet the new state and federal accountability standards. The system of school finance in Texas has changed dramatically over the past two decades. Although the current system of state aid to local school districts has passed constitutional muster, a number of recent developments suggest that a new school finance crisis may develop over the next few years. In the final section of the paper, we explore several factors that may contribute to a funding crisis. These include the growing opposition to a provision of

---

<sup>1</sup> The total student count for the 2001-02 school year was 4,059,519 (Texas Education Agency, 2002a). Data on the number of students relative to other states are for the 1998-99 school year (National Center for Education Statistics

the current state school aid system that requires a number of high property value school districts to contribute property tax revenues to poorer districts, the fact that an increasing number of school districts are reaching a state-imposed property tax rate limit, and the rising costs of meeting new accountability standards tied to student academic performance. We conclude by suggesting a reform to the current state aid system designed to address these problems.

## **II. The History of School Finance Litigation in Texas**

In July 1968, Demetrio Rodriguez and a group of other parents jointly filed suit in federal district court in Texas challenging the Texas school funding system on behalf of children who resided in property poor school districts. The plaintiffs claimed that the heavy reliance on local property taxes for the funding of schools denied them “equal protection” as guaranteed under the Fourteenth Amendment of the U.S. Constitution. The legal argument was based on the assertion that public education is a “fundamental interest” that should not be conditioned on school district property wealth. The plaintiffs also argued that there was no “compelling” state purpose for utilizing a system of education finance that relied so heavily on the local property tax. The legal argument that was at the core of the *Rodriguez* case was based on the principle of fiscal neutrality. Based on the work of Coons, Clune, and Sugarman (1970), the plaintiffs argued that although individual school districts could choose how much they wanted to spend per pupil, these per student amounts should not be a function of districts’ property wealth.

The plaintiffs won in district court and the case was appealed to the U.S. Supreme Court, which in a 5-4 decision, reversed the district court’s ruling (*Rodriguez v. San Antonio Independent School District*, 1973). The Court argued that despite its importance to society, education was not a “fundamental interest,” primarily because it is not a right explicitly

guaranteed in the constitution (Minorini and Sugarman, 1999). Furthermore, the Court argued that no convincing evidence was presented that even property-poor school districts could not provide the basic skills necessary for participation in the political process. Because poverty and school district property wealth were not strongly correlated, the Supreme Court argued that the education financing system did not discriminate against poor children. The court also argued that the preservation local school district control over education provided a “compelling” reason for the state to maintain its system of funding education.

The *Rodriguez* decision had important implications for efforts to reform school finance throughout the country. The decision closed the door to future challenges of state school funding systems based on claims that funding violated the equal protection clause of the U.S. Constitution. Ever since that ruling, all school finance cases, in Texas and throughout the country, have been argued on the basis of violations to state constitutional provisions.

Although 11 years passed until another suit was filed in Texas challenging the equity of the state’s school funding system, the legislature during the intervening years took limited steps to reduce fiscal inequalities among school districts. Using revenues from a budget surplus, the Legislature in 1975 increased state education funding allocated through an existing foundation formula, and established a very small guaranteed tax yield formula (Johns, 1976).

In 1984, the Mexican American Legal Defense and Education Fund (MALDEF) filed a suit in state district court challenging the equity of the state’s system of school finance. The plaintiffs in the case (*Edgewood Independent School District et al. v. Kirby et al.*) argued that Texas’s heavy reliance on the property tax and the existence of a large variation in per pupil property values led to a big disparity in spending per pupil across districts. Even if they levied high property tax rates, school districts with relatively little property wealth per pupil were

unable to raise sufficient revenue to finance education programs that met the state's minimum education requirements. The plaintiffs argued that the existing funding system violated both the equal protection clause and education clause of the Texas Constitution. The education clause (Article 7, Section 1) requires that the state "make suitable provision for the state support and maintenance of an *efficient* (italics added) system of free public schools."

The trial court ruled in favor of the plaintiffs in a 1987 decision, declaring that the state's school financing system was unconstitutional. Although, on appeal, a state appeals court reversed the lower court ruling, in October 1989, the Texas Supreme Court affirmed the lower court's ruling in a unanimous decision, and ordered the state legislature to develop an equitable system of school finance in time for the 1990-91 school year (Texas State Historical Association, 2001). In its decision, the Court took note of the large disparities in property wealth per pupil across districts. The poorest school district in the state had a property tax base per pupil of just \$20,000, while the per pupil property tax base in the richest school district was a whopping \$14 million—a range of 700 to 1 (Texas Association of School Boards, 1996). The Court found that the State had not done enough to redress these differences in wealth, thereby resulting in a situation where property poor districts were unable to meet their constitutional obligation to provide students with an "efficient" education.

In response to the Supreme Court decision, the Legislature enacted legislation (Senate Bill 1) in June 1990 that increased state funding for public schools by over \$500 million. The plaintiffs in the *Edgewood* case were not satisfied with the new legislation, and they immediately brought suit to challenge its constitutionality. They argued that the new law left the basic structure of school finance system in place and did not guarantee that the same tax effort would produce essentially the same amount of revenue in school districts with different amounts of per

pupil property wealth (Center for Public Policy Priorities, 1998). In January 1991, the state Supreme Court, in a ruling generally referred to as *Edgewood II*, accepted the plaintiff's argument, and gave the legislature a couple of months to come up with a new funding system.

In response, the Legislature passed Senate Bill 351. The new legislation combined the state's existing 1,058 independent school districts into 188 "County Education Districts" (CEDs). When fully phased-in, these districts would levy a state-mandated property tax of \$1 per \$100 of property value on the first \$280,000 of property value per pupil. The revenue raised (\$2,800 per pupil) would be distributed on an equal per pupil basis within each district. This new legislation was challenged by a group of wealthy school districts, and in January 1992, in a ruling referred to as *Edgewood III*, the state Supreme Court ruled that Senate Bill 351 was unconstitutional because it violated Article 7, Section 3 of the Constitution which required local voter approval of school property tax levies, and Article 7, Section 1-e, which prohibited a statewide property tax (Legislative Budget Board, 2001).<sup>2</sup> The Court gave the Legislature a year to come up with a new system of school finance.

In May 1993, the legislature enacted Senate Bill 7, which it hoped would satisfy the mandate of the Supreme Court to develop a more equitable school finance system. The legislation was designed to achieve fiscal neutrality. It established a system of state aid to education that consisted of three major elements. The first element (Tier I) was a foundation formula that provides school districts with a guaranteed amount of money per pupil if they agree to levy a minimum property tax rate. The second element (Tier II) was a guaranteed tax base formula that guarantees all districts a certain amount of money for each extra cent of property tax effort. The third element, the so-called Chapter 41 "recapture" provision, involved capping the

revenue-raising capacity of all school districts with property wealth above \$280,000 per pupil. These high-wealth districts were given five options for implementing the revenue cap: (1) complete consolidation with a property poor district, (2) ceding territory for purposes of taxable valuation, (3) purchasing “attendance credits” from the state, (4) contracting for the education of non-resident students, or (5) the consolidation of tax bases with a property-poor district. The legislation included provisions that allowed for the phasing in of the recapture provisions over a number of years.

Senate Bill 7 also established a statewide accountability system. The basis of the accountability system was to be student performance on a series of standardized reading, writing, and math tests. These tests, which were initiated in 1990, are known as the Texas Assessment of Academic Skills (TASS). The legislation required that all schools meet state standards for improving student performance on these tests. The standards were not only set for average student performance, but for the performance of students characterized by racial group and for economically disadvantaged students. School districts were required to provide extra instruction for students who did not meet the performance standards (Legislative Budget Board, 2000).

In January 1995, the Texas Supreme Court, ruling in a case referred to as *Edgewood IV*, declared that the school finance system established in Senate Bill 7 was constitutional.<sup>3</sup> Although there have been some revisions to the school funding formulas since 1993, the basic system of state aid established in Senate Bill 7 remains in place today. It will be described in considerably more detail in the next section of the paper.

---

<sup>2</sup> The official name of the *Edgewood III* case is *Carrollton-Farmers Branch School District v. Edgewood Independent School District* (1992). For a detailed and insightful treatment of the plaintiff’s arguments and the Court’s rulings in *Edgewood III*, see Picus and Hertert (1993).

<sup>3</sup> The official name of *Edgewood IV* is *Edgewood Independent School District v. Meno* (1995).

In its ruling in *Edgewood IV*, the Court expressed concern about inequities in the financing of school capital facilities. Traditionally, the state had played a very limited role in the funding for school buildings, leaving local school districts to bear most of the costs of capital facilities. The court suggested that if the legislature did not now deal with this issue, the entire school funding system may be deemed to be unconstitutional “in the very near future” (Legislative Budget Board, 2001). In response to this warning from the Supreme Court, the legislature did, in subsequent years, pass legislation that provided for additional state aid for instructional facilities and for debt financing. Funding for these two programs has been set at \$1.45 billion for the 2002-03 biennium (Legislative Budget Board, 2001).

In 1998, the equity of the school finance system was again challenged in court. The suit, referred to as *Edgewood V*, charged that equity was being eroded because of various provisions that allowed some property-rich school districts to escape in whole or in part the recapture provisions established in Senate Bill 7. The suit also claimed that no provisions for equalization existed with regards to the financing of certain old debt payments (Legislative Budget Board, 2001). In part because the Legislature in 1999 addressed some of the issues raised in the suit and increased both Tier I and Tier II funding, the suit has not been heard.

The long history of court challenges to the Texas school finance system has not ended. In the last section of this paper we will discuss the current challenges and issues related to school financing in Texas. Our discussion will include a review of two lawsuits that have recently been filed challenging the constitutionality of the school finance system.

### **III. Description of the School Funding System in Texas**

Senate Bill 7 laid down the basic framework for what is the current system of school finance in Texas today. In part because of the series of court cases, and ensuing legislative

reforms, the system is a complex assortment of formulas, adjustments and weights, collectively known as the Foundation School Program (FSP). In this section, we briefly outline the basic components of the system.

The FSP distributes aid to districts under three tiers of funding. Tier I is based on a traditional foundation formula which guarantees a base level of funding to all districts that levy a minimum property tax rate. In 2001-02, the base funding level, called the Basic Allotment, was \$2,537 per pupil in average daily attendance (ADA). This allotment, however, is adjusted in several ways. Districts with fewer than 1,600 and fewer than 5,000 students receive the Small and Mid-size District Adjustments, respectively. Districts that have low enrollments and are over 300 square miles in area qualify for the Sparsity Adjustment. Finally, a Cost-of-Education Index is applied, which is designed to reflect cost variations due to such factors as cost of living and concentration of low-income students. Each of these adjustments increases the Basic Allotment for individual districts.

A district's Tier I total guaranteed level of revenue is also adjusted through the use of pupil weights for students in special education, compensatory education, bilingual education, career and technology (vocational) education, gifted and talented education, or in the public education grant program.<sup>4</sup> Once the Basic Allotment and ADA have been adjusted, a district's Tier I guaranteed funding level is the adjustment allotment multiplied by weighted ADA, plus a transportation allotment that is based on number of students and bus route miles.

In order to participate in the FSP, a district is required to levy a property tax rate of \$0.86 per \$100 of assessed valuation. A district's Local Fund Assignment (LFA) is then calculated as the amount of revenue that the district can raise at the required tax rate. If the LFA is less than

the Tier I guaranteed level, the state makes up the difference. Thus, Tier I aid is inversely related to district property wealth (i.e., the lower a district's wealth, the lower their LFA and the larger the difference between the LFA and the Tier I guarantee). In keeping with the mandate of the courts, under Tier I, all districts are able to raise the same amount of revenue at the required tax rate, regardless of property wealth.

Tier I also includes a per pupil grant which is funded with money from the Available School Fund (ASF). The ASF per pupil amount varies from year to year. In fiscal year 2002, it is \$250. All school districts, including those not entitled to aid through the foundation formula, are eligible for the ASF per pupil amount.

For districts that choose to levy a tax rate higher than \$0.86, Tier II provides additional equalization funds, based on a guaranteed tax base formula. For the 2001-02 school year, districts are guaranteed \$25.81 per weighted ADA for each penny increase in the tax rate over \$0.86, up to a maximum tax rate of \$1.50.<sup>5</sup> This means that for districts with property wealth of less than the guaranteed tax base of \$258,100 per weighted ADA, the state makes up the difference between the amount of local property tax revenue at the chosen tax rate and the amount that would be raised if the district had the guaranteed tax base. Again, aid is inversely related to district property wealth, since the lower a district's wealth (below \$258,100), the larger the difference between local revenue and the \$25.81 guarantee. Thus, all districts with property wealth below \$258,100 are able to raise equal revenue at equal tax rates, regardless of property wealth. Districts with wealth greater than the guaranteed tax base will be able to generate more than the \$25.81 for each penny of tax rate, and thus will receive no Tier II aid.

---

<sup>4</sup> The weights for special education range from 1.7 to 5.0 depending on the type of education program students participate in, the weight is 0.20 for compensatory education, 0.10 for bilingual education, 1.37 for career and technology education, and 0.12 for gifted and talented programs.

<sup>5</sup> For the 2002-03 school year, this guaranteed yield per penny of tax rate will be increased to \$27.14.

It should be noted that under Tier II, districts with property wealth above \$258,100 are able to generate more revenue than lower-wealth districts with the same tax effort. To further equalize revenues and increase fiscal neutrality, the Texas system requires that for the 2001-02 school year districts with property wealth greater than \$300,000 per weighted ADA must reduce their wealth through one of the five “recapture” options listed in section II. The most commonly chosen options are the purchase of attendance credits from the state, or paying for the cost of educating students in other districts. In 1999-00, there were 88 districts subject to the recapture provision; all choose one (or some combination) of these two options (Texas Education Agency, 2000). As we will discuss in more detail in Section VI, the recapture provision is perhaps the most controversial component of the state aid system, and has been the impetus for the most recent court cases.

The Texas system also provides some equalization of debt service for capital facilities. The Instructional Facilities Allotment (IFA) program is a guaranteed yield formula, similar to Tier II, that guarantees districts up to \$35 per *unweighted* ADA for each penny of new debt service tax levied specifically for instructional facilities. In 1999-2000, an additional program was created to assist districts with existing debt. The Existing Debt Allotment (EDA) also guarantees districts up to \$35 per ADA for each penny of debt service tax levied for eligible debt, up to a limit of twelve cents. These two facilities financing programs are referred to as Tier III.

The FSP and the IFA were created to comply with court requirements that districts with similar tax effort be able to raise similar amounts of revenue, regardless of property wealth. In the next section, we will discuss whether the system has achieved its goals.

#### IV. How Equitable is the Texas School Funding System?

As discussed in section II, the *Edgewood* litigation was motivated in large part by the disparity in spending per pupil that resulted from large variations in per-pupil property wealth. Heavy reliance on the local property tax meant that low-wealth districts could not raise sufficient revenue, even when levying high tax rates. The current funding system thus attempts to provide equal revenues for equal tax effort. How well has the system done at meeting the original, *access equality*, objectives?

It should be noted that when the Texas Supreme Court upheld Senate Bill 7 as constitutional in 1995, they created three measures with which to assess the equity of the system: (1) the percentage of total FSP revenue within the equalized funding system (with a target of 98 percent); (2) the percentage of students within the equalized funding system (with a target of 85 percent); and (3) the variation in revenue per weighted ADA between property wealthy districts (i.e., districts subject to recapture) and districts with wealth below the Tier II guaranteed wealth level (with a target of no more than \$600). By these measures, the system has been 'equitable' in each year since *Edgewood IV*.<sup>6</sup>

The third measure, variation in revenue between high- and low-wealth districts, is the only one of the three that actually gives an indication of access or fiscal neutrality. In our analysis, we focus on measures of equity commonly found in the school finance literature. Specifically, following Berne and Stiefel (1984), we use the wealth elasticity of revenue per pupil as our measure of access neutrality. We also calculate the coefficient of variation and the Gini coefficient of school district revenue as measures of equality.

---

<sup>6</sup> The Tier II guaranteed yield and recapture wealth level have been increased in recent years to ensure these equity targets are met.

Table 1 shows the summary statistics and equity statistics for K-12 districts in 2000-2001. The data are from the Texas Education Agency's *Snapshot* reports.<sup>7</sup> Large disparities in property wealth, which played such a prominent role in the *Edgewood* cases, are still evident. The wealthiest district in the state has equalized property wealth per pupil that is 192 times the wealth of the poorest district (though this is down from the 700 to 1 ratio at the time of *Edgewood I*). The impact of the FSP grant system can be seen by looking at the distribution of total school district revenue per pupil displayed in the second data column of Table 1. Despite large differences in property wealth per pupil across school districts, revenue per pupil appears to be fairly evenly distributed across districts, with a Gini coefficient of 0.102 and a coefficient of variation equal to 0.223.

The equalizing effects of the FSP system can also be seen in Table 2, which shows the coefficient of variation and Gini coefficient of revenue per pupil across K-12 districts in each year since 1987-88.<sup>8</sup> Both statistics have declined since the late 1980s, with the largest reduction occurring in 1994-95, after the enactment of Senate Bill 7. Since then the value of the two statistics have been relatively stable. The coefficient of variation peaked in 1991-92 with a value of 0.301, and declined to 0.210 for the 1999-2000 school year, while the Gini coefficient declined from 0.130 in 1988-89 to 0.099 in 1999-2000.

The FSP has also been quite successful at achieving access and wealth neutrality. Although the wealth elasticity of revenue per pupil is positive and statistically significant, its magnitude is a modest 0.125. This number implies that a one percent increase in property values per pupil (an increase of roughly \$2,106 at the mean property value) is associated with a 0.125

---

<sup>7</sup> Nine school districts were dropped due to missing or incorrect data.

<sup>8</sup> To keep a consistent comparison sample over time, we use the set of K-12 districts in 2000-01. That is, only districts that existed in 2000-01 were retained in earlier years. A small number of districts were dropped in various years due to missing or incorrect data.

percent increase in revenue per pupil, or an increase of \$8.66 at the mean revenue per pupil. It is important to note, however, that for the 748 K-12 districts with per-pupil property wealth less than \$246,000 (the Tier II cutoff in 2000-01), the elasticity is only 0.02. This number implies that for two-thirds of all Texas public school pupils, namely those living in these 748 districts, the FSP has resulted in effective wealth neutrality.<sup>9</sup> The data in the last column of Table 2 also demonstrate that the fiscal neutrality of the Texas school funding system has increased over time as indicated by a quite sharp reduction in the wealth elasticity since the late 1980s.

#### **IV. Does the Texas School Funding System Achieve Educational Adequacy?**

The primary focus of school finance reform in Texas has been fiscal or access neutrality, breaking the connection between property wealth and dollars per pupil. As the analysis in the previous section suggests, Texas has been relatively successful at meeting this equity goal. Over the last several years, however, the focus of school finance reformers has been shifting from the distribution of school resources to school outcomes, namely student academic performance. This shift is exemplified by the recently enacted federal education legislation, the *No Child Left Behind Act of 2001*, which emphasizes standards and accountability. Almost every state now has, or is considering, some kind of accountability policy in which districts, teachers and/or students are assessed for their performance on specific outcome measures. Although these accountability programs may include monetary incentives such as giving additional money in the form of rewards, or using the threat of reducing funds as a form of punishment, there is generally little connection between school district performance and state aid formulas. For example, in Texas, there has been a well-defined accountability system in place since 1993. Specifically, the state determines standards for two performance measures, test scores and dropout rate (and

---

<sup>9</sup> The Court-defined equity measures requires that 85 percent of students be within the FSP system. However, our

collects data on a number of other measures as well), then assigns each school an accountability rating (Exemplary, Recognized, Acceptable, Low-Performing) based on performance relative to the standard.<sup>10</sup> Exemplary, Recognized and Acceptable ratings are associated with increasing monetary rewards, while a district that receives a Low-Performing ranking may be subject to state intervention. As in most states, however, a district's accountability ranking is unrelated to the distribution of state (FSP) aid.

Nevertheless, the connection between resources and outcomes has been recognized by the courts for many years. In a number of states, for example, Kentucky, Wyoming, and New Hampshire, school finance systems were declared unconstitutional because they did not provide the opportunity for all students to receive an "adequate" education. In each of these cases, the courts explicitly stated that all students should be provided with the opportunity to acquire a certain set of skills. In several recent court rulings, for example, *Rose v. Council of Education*, in Kentucky, or *Claremont School District v. Gregg*, in New Hampshire, the courts have spelled out quite detailed descriptions of the skills that students must master in order to receive an "adequate" education.

Embedded in this adequacy movement is an understanding that equal dollars do not guarantee equal outcomes. Thus, states with finance systems that do very well at equalizing revenues or at maintaining fiscal neutrality may still exhibit large disparities in student outcomes and there may still be students who are not receiving an "adequate" education. This is because the amount of money necessary to achieve a particular performance standard may be different across districts due to variations in costs, for reasons that are outside the control of the districts.

---

sample excludes elementary and high school districts as well as charter schools.

<sup>10</sup> For example, in order to achieve a rating of Acceptable, at least 50 percent of all students, and 50 percent of each student group (African American, Hispanic, white, economically disadvantaged) must pass each section of the TAAS, and the dropout rate cannot exceed 6 percent for all students and for each student group.

For example, some districts, because of their geographic location or the composition of their student bodies, may need to pay higher salaries than other districts to attract the same quality of teachers. Or a district with a high concentration of students from poor families or from families where English is not spoken in the home may need additional resources (in the form of smaller classes or specialized instructors) in order to reach a given achievement goal.

Some of these variations in cost have long been acknowledged and accounted for in state aid programs. For example, it is commonplace for districts to receive additional aid for each disabled student in a special education program. The ways in which states account for these cost differences in their aid formulas include pupil weights, add-on categorical aid, or cost-of-living adjustments. The FSP in Texas includes all of these: the Tier I Basic Allotment is adjusted for district size and sparsity, as well as a geographic cost of living index, and average daily attendance (in both Tier I and Tier II) is adjusted with weights for students in certain program categories.

Given that Texas has specific performance goals as part of their accountability system, and that there are sanctions imposed on districts that consistently do not meet the student performance standards, it is particularly important that the state ensure that districts have sufficient resources to allow them to achieve these goals. Without additional aid, schools in high-cost districts may fail to meet the accountability standards, not because of their own inability to educate children, but because they have insufficient fiscal resources to do the job. Thus, the adjustments included in the FSP play a crucial role in helping districts increase academic performance.

The weights and adjustments used in Texas, however, may not be the most appropriate way to account for variations in school district costs. The origin of many of these weights is

unclear. We suspect that the explicit and implicit weights used in the school aid formulas are the result of political negotiations, rather than the product of the careful measurement of differences in the costs of educating various groups of students.<sup>11</sup> Because the accuracy of these adjustments and weights is unknown, it is possible that school districts with high concentrations of low-income or special education students may not be receiving sufficient resources to meet the new accountability standards. Table 3 shows the distribution of revenue per pupil for K-12 districts, divided into quintiles by districts characterized in various ways, such as the percent of poor students.<sup>12,13</sup> With the current FSP adjustments, districts with the highest proportion of ESL students generally have *lower* revenue per pupil than districts with fewer such students. Small districts and districts with a high proportion of poor children, and with a high proportion of special education students do, however, have higher levels per pupil revenues than larger districts and districts with relatively few poor and special education students.

The question that needs to be addressed is whether the additional revenue being targeted to certain groups of students is enough to cover the costs of educating those students up to an acceptable level of academic performance? To begin answering this question, Table 4 divides districts into quintiles according to several characteristics, such as their proportion of poor students, and then displays data on several alternative measures of average student performance in each quintile. Although the average passing rates on standardized tests do not vary much among districts with high and low values of property per pupil, pass rates are generally lower in

---

<sup>11</sup> We refer here to the pupil weights used for students in various programs (such as 0.2 for a student in compensatory education or 5.0 for a student in a speech therapy program), and the adjustments for district size. The cost-of-education index is the one component of the system whose construction has been transparent and well-documented (see Alexander et al., 2000).

<sup>12</sup> Quintiles are weighted by student enrollment; that is, each quintile contains twenty percent of all *students* in Texas K-12 schools, not twenty percent of all K-12 *districts*.

<sup>13</sup> Similar analysis was conducted using expenditure per pupil. The qualitative results were the same.

school districts with high rates of poverty and high concentrations of ESL students than in districts with lower concentrations of poor or ESL students.

One reason for the variation in student performance across school districts may be because the school funding system does not guarantee school districts with high concentrations of needy students enough money to educate their students to a level required by the accountability standards. In other words, the pupil weights and other cost adjustments currently in the FSP may not allocate an adequate amount of resources to certain school districts with high concentrations of students who are costly to educate.

In an attempt to provide an independent estimate of the amount of money school districts with various characteristics need to achieve state-mandated student performance goals, we have estimated a cost function for K-12 education in Texas. A cost function quantifies the relationship between per-pupil spending for education, student performance, various student characteristics and the economic, educational and social characteristics of school districts. The 'output' of public schools is measured by student performance and is assumed to be a function of school inputs (e.g., teachers and textbooks), characteristics of the student body, and the family and neighborhood environment in which the students live. This relationship can be represented by equation (1), where  $S_{it}$  represents an index of school output,  $X_{it}$  is a vector of direct school inputs,  $Z_{it}$  is a vector of student characteristics, and  $F_{it}$  is a vector of family and neighborhood characteristics. The subscript  $i$  refers to the school district and subscript  $t$  refers to the year.

$$(1) \quad S_{it} = g(X_{it}, Z_{it}, F_{it})$$

The amount that a district will need to spend in order to produce a particular level of output is a function of school inputs and the prices of those inputs. This is shown in equation (2), where per pupil expenditures,  $E_{it}$ , are considered as a function of school inputs, a vector of input prices,  $P_{it}$ , and  $\epsilon_{it}$ , a vector of unobserved characteristics of the school district.

$$(2) \quad E_{it} = f(X_{it}, P_{it}, \varepsilon_{it})$$

Finally, by solving equation (1) for  $X_{it}$ , and plugging  $X_{it}$  into equation (2), we arrive at the cost function represented by equation (3), where  $u_{it}$  is a random error term.

$$(3) \quad E_{it} = h(S_{it}, P_{it}, Z_{it}, F_{it}, \varepsilon_{it}, u_{it})$$

Typically, equation (3) is assumed to be log-linear and estimated with district-level data for a given state. The resulting coefficients indicate the contribution of various district characteristics to the cost of education, holding constant the level of output. Table 5 shows the results of an estimate of equation (3) using 2000-01 data for K-12 school districts in Texas.<sup>14</sup> Reschovsky and Imazeki (2003) provide a full discussion of the data and estimation procedures used. Scores on the Texas Assessment of Academic Skills (TAAS) and the percent of students taking either the SAT I or the ACT exams and who achieve a particular score (1,110 on the SAT I and 24 on the ACT), are used as measures of school output. The percent of students in poverty increases the cost of achieving a given level of output; however, the percent of students with severe disabilities (i.e., autistic, deaf or deaf/blind) and the percent of students with limited English proficiency are associated with lower costs.<sup>15</sup> We find that enrollment has a U-shaped relationship with spending per pupil: costs start out high for small districts and fall as enrollment increases, until roughly 12,735 students, at which point costs begin to rise again.<sup>16</sup>

---

<sup>14</sup> To account for endogeneity of school output and input prices, the equation is estimated using two-stage least squares.

<sup>15</sup> In contrast to the results of some other studies, we find that costs appear to be *lower* when a district serves more limited English proficient or severely disabled students. These puzzling results could perhaps be explained by economies of scale; there are certainly fixed costs associated with having specialized programs for these students and thus, having *more* students in these programs could mean lower average costs. When a quadratic term for LEP students is included, there is some evidence that the relationship is U-shaped; the coefficient on the quadratic term is positive, though not highly statistically significant. In the case of severely disabled students, over a third of districts do not have any such students at all. When we include a dummy variable for simply having *any* severely disabled students, the coefficient on this variable is positive and statistically significant. Thus, the presence of these students does increase spending relative to districts that do not have any, but conditional on having any severely disabled students at all, then having more can reduce costs.

<sup>16</sup> To account for the large variance in district size in Texas, the regressions are weighted by district enrollment and a dummy variable is included for Dallas and Houston. If the indicator for Dallas and Houston is not included, the

The results of our cost function estimates displayed in Table 5 are quite similar to results from similar studies of education costs conducted for New York State (Duncombe and Yinger, 1999, 2000), for Illinois (Reschovsky and Imazeki, 2000), and for Wisconsin (Reschovsky and Imazeki, 1998). A cost function for Texas schools was recently estimated by Timothy Gronberg as part of a large study completed by the Charles A. Dana Center (Alexander, et al., 2000). Although he included some different variables in his study, his results are qualitatively similar to ours.

The cost function estimation results can be used to build a cost index, which summarizes all the information about costs into a single number for each district. By holding the output measures constant at some chosen level, and allowing the cost factors to vary across districts, we can predict the level of spending required for each district to achieve the chosen output level. For example, if we assume that the policymakers in Texas define the minimum standard for an accountability system as the current average level of student performance, then a cost index can be constructed that will indicate, for any given district, how much that district must spend, relative to the district with average costs, in order for its students to meet the performance standard. Using the cost function estimates from Table 5, and setting the performance standard equal to the Texas state average achievement on the TAAS and ACT exams, the district with average costs (i.e., each of the cost factors set equal to its mean) must spend \$6,925 per pupil (in 2000-01) to achieve the performance standard. For any given school district, the product of this average spending level and its cost index (divided by 100) will indicate the minimum amount that district must spend in order to meet the performance goal. Thus, for example, a district

---

coefficients on the enrollment variables change so that average costs appear to fall for districts up to 53,565 students. The cost indices (discussed below) generated from either specification are highly correlated (a correlation coefficient equal to 0.98).

whose cost index is 125 will need to spend \$8,656 (\$6,925 times 1.25) to reach the same performance standard.

Alternatively, the cost index can be used to gauge whether a district's actual revenue is sufficient to reach the performance goal. A district's cost-adjusted revenue per pupil can be calculated as current revenue per pupil divided by the district's cost index. If this amount is less than the average, it indicates that the district does not have sufficient revenue to meet the performance goals.

Table 6 shows the distribution of current and cost-adjusted revenue per pupil.<sup>17</sup> The table indicates that Texas does a mixed job at providing sufficient resources to high-cost districts. The FSP does well at allocating resources to districts with high concentrations of special education students, and districts that have high costs because of diseconomies of scale (i.e., low enrollments). The FSP, however, is not as successful at allocating sufficient resources to districts with high concentrations of poor and bilingual students.<sup>18</sup> For example, while average cost-adjusted revenue per pupil is over \$500 per pupil higher in the quintile with the smallest school districts relative to the quintile with the largest school districts (\$7,120 compared to \$6,608), the cost adjusted revenue per pupil in the quintile with the highest proportion of poor children is \$2,200 per student **lower** than cost-adjusted revenue in the quintile with the smallest proportion of poor students (\$5,852 compared to \$8,095). The pattern of student performance illustrated in Table 4 is consistent with the patterns illustrated in Table 6 describing the distribution of resources. Thus, TAAS passing rates are higher and dropout rates lower in the

---

<sup>17</sup> Note that because the cost function analysis did not include all K-12 districts in 2000-01, the distribution of current revenue per pupil in Table 6 differs somewhat from the distribution shown in Table 3. For ease of comparison, the distribution of revenue was re-calculated for only those districts used in the cost analysis.

<sup>18</sup> In a recent paper we explicitly compare the distribution of a cost index generated from the estimation of a cost function with a cost index based on the pupil weights and other adjustments used in the Texas school aid formulas (Reschovsky and Imazeki, 2003). This comparison allows us to quantify the changes in the distribution of state aid that would be needed to achieve educational adequacy.

smallest district size quintile relative to the largest district size quintile, while, paralleling the pattern of resource availability, the TAAS passing rate is lowest and the dropout rate highest in the quintile with the highest proportion of poor children.

## **VI. Funding Texas Schools: An Impending Crisis?**

The past 30 years of Texas history have been characterized by almost continuous changes in the way the state financed public education. Often forced to act by the courts, the state Legislature has crafted a system of state aid to local school districts that is both innovative and complex. By most measures, Texas has made great strides over this period in increasing the equity of its school funding system and, more importantly, in improving the quality of education received by most Texas public school students. In recent years, student performance on state-mandated standardized tests has improved substantially, with the largest percentage gains being achieved by African-American and Hispanic students and by students from disadvantaged backgrounds (Legislative Budget Board, 2000).<sup>19</sup>

Even though state legislators, local school official, and parents may all long for a period of stability in the Texas education financing, for reasons to be explained below, the current system of school finance is inherently unstable. Unless the Legislature makes substantial changes to the current system within the next few years, a serious fiscal crisis will develop and there is a high probability that the Supreme Court will again declare the funding system unconstitutional. Complicating the search for a solution to its education funding problems is the overall fiscal climate of the state. Texas faced a budget deficit of nearly \$10 billion in fiscal year

---

<sup>19</sup> The conclusion that the achievement gap between white and minority students has been reduced is subject to some controversy. As reported by Murnane and Levy (2001), two studies conducted by different teams of researchers at the Rand Corporation compared the TAAS score results with the scores of Texas students on the National Assessment of Educational Progress (NAEP) and came to quite different conclusions. One study reported that the gap in math test scores between racial groups was very large and was actually increasing. In contrast, the second

2004, and unless the economic recovery is very strong, like most other states, it faces the prospect of future budget shortfalls.

There are four elements of the school finance system in Texas, which, unless further action is taken, will in our view inevitably lead to a full-scale funding crisis. These elements are the continuously falling state share of public school revenues, the rising costs of meeting state and federal accountability standards, the fact that an increasing number of school districts are hitting the state's \$1.50 tax rate cap, and the growing opposition to the state's Chapter 41 recapture provisions. In the following paragraphs, we will explain how these elements interact with each other and how each of them increases the probability that major changes will have to be made to the current system of public education finance in Texas.

#### **The Falling State Share of Education Funding.**

Although there has been a steady increase in the amount of state money that has been allocated to elementary and secondary education in Texas, over the past few years, the share of education spending through the Foundation School Program that was financed by the state has been declining. In the year 2000, the state share was 47 percent. It is estimated to fall to 42 percent in 2002 and to 41 percent by 2003 (Legislative Budget Board, 2001).

The reasons for the falling state share are straightforward. Both the state's foundation formula (Tier I) and its guaranteed tax base formula (Tier II) are not automatically adjusted for the rising costs of education. This means that as a school district's property tax base per pupil rises from one year to the next, both its Tier I and Tier II state aid allocations are reduced.

Although increases in property values generate more property tax revenues for school districts, these same increases in value result in reductions in state aid allocations. As a result, school

---

Rand study reported that nationwide the largest improvements in NAEP scores (in fourth grade reading and math tests) occurred in Texas and North Carolina.

districts are forced to raise their property tax rates, both to make up for reductions in state aid and to meet rising education costs. Over the past decade, the state has on several occasions raised both the foundation level (called the basic allotment) and the Tier II guaranteed tax base. Nevertheless, between the 1993-94 and 2001-02 academic years, the real (CPI-adjusted) basic allotment has fallen by over \$200, while the guaranteed yield from the Tier II formula has only barely kept up with inflation.<sup>20</sup>

### **The Rising Costs of Providing an Adequate Education**

Texas has been requiring its public school students to take standardized tests since the mid-1980s. Beginning in the 1990-91 school year, students were required to pass the 10<sup>th</sup> grade TAAS test in order to graduate from high school. As indicated previously, the state rates the performance of every public school on the basis of student performance on the TAAS exams and on the basis of several other criteria, such as dropout rates. Schools are expected to improve not only the average test scores of their students, but also the test scores and pass rates of each racial/ethnic group and the scores of students classified as economically disadvantaged. As explained in detail by Murnane and Levy (2001) there has been considerable controversy concerning the role that student testing in Texas has played in increasing student performance, especially among low-income and minority students. Regardless of the controversy, accountability standards for both students and for schools are being steadily raised. Meeting these new, higher standards will have important fiscal implications for all school districts.

Texas is introducing a set of changes to its accountability system starting in the 2002-03 school year. The changes include a new set of tests called the Texas Assessment of Knowledge and Skills (TAKS). New, tougher, promotion standards are to be adopted covering promotion

---

<sup>20</sup> In constant 1994 dollars, the Basic Allotment fell from \$2,300 in 1993-94 to \$2,094 in 2001-02. Also in 1994 dollars, the guaranteed yield in the Tier II formula went from \$20.55 in 1993-94 to \$21.30 in 2001-02.

from the 3<sup>rd</sup>, 5<sup>th</sup> and 8<sup>th</sup> grade, and passage of a TAKS exam administered in the 11<sup>th</sup> grade will be required for graduation from high school.<sup>21</sup> Texas will also have to comply with the new federal education legislation, which requires annual testing of all students in grades 3 through 8, and requires that schools make annual progress in meeting student performance goals for all students and for separate groups of students characterized by race, ethnicity, poverty, disability, and limited English proficiency (U.S. Department of Education, 2002).

Our research on the costs of education in Texas (summarized in the previous section of the paper) makes it clear that raising standards of student performance has a direct implication on the minimum amount of money necessary to meet those standards. For example, we estimate that raising test scores from the average (50<sup>th</sup> percentile) to the 75<sup>th</sup> percentile would raise expenditures per pupil in the district with average costs from \$6,925 to \$9,752. The cost implications of raising performance standards will be particularly striking in school districts with above average concentrations of pupils with limited English proficiency and from economically disadvantaged households. Under current law, school districts are required to provide “intensive programs of instruction” for those students that fail to pass the standardized tests (Legislative Budget Board, 2000). These programs are supposed to be designed to enable students to meet state-imposed standards of annual improvement in academic performance.

The Texas Education Agency (2002b) estimates that if the higher test standards scheduled to go into effect in 2003 had been in place for the Spring 2002 TAAS tests, the percent of students that would have met the minimum standard would have declined, with the impact falling particularly heavily on students characterized as “at risk.” For example, while 69 percent of “at risk” students met current minimum standards for both the third grade reading and

---

<sup>21</sup> According to an article in the *New York Times*, fearing that too many students would fail to pass the new tests, the State Board of Education voted in late 2002 to reduce the number of test questions students would need to answer

mathematics tests administered in Spring 2002, only 49 percent of these students would have met the new higher standards. This suggests that substantial amounts of additional resources will be needed in order to first maintain, and then raise student performance standards of “at risk” children.

Predictions by the National Center for Education Statistic (2001b) suggest that demographic trends in Texas will place further pressure on Texas school districts to increase spending over the next few years. For the nation as a whole, elementary and secondary public school enrollment is projected to be essentially unchanged between 2001 and 2011. During this same period, enrollment is projected to fall in the Northeast and in the Midwest by 4.8 and 3.0 percent, respectively. The picture is quite different in Texas, where enrollment is projected to rise by 5.4 percent over this period.

#### **The \$1.50 Property Tax Rate Cap.**

The combination of rising accountability standards and growth in enrollment creates substantial pressure on most school districts to increase public school spending. Faced with these spending pressures and a declining share of FSP state aid, school districts will have no choice but to raise local property tax rates. For a growing number of school districts that are currently taxing at a rate of \$1.50 per \$100 of assessed valuation, the option of raising property tax rates is not available. State law prohibits levying a tax rate for “maintenance and operations” in excess of \$1.50. From the late 19<sup>th</sup> century when the property tax was first introduced as a source of school financing, Texas has placed either statutory or constitutional limits on the rate of property taxation. In the mid-1880s, property taxes were limited to \$0.20 in rural areas and \$0.50 in cities (Thomas and Walker, 1982). Over time these limits have been raised.

For the 2000-01 school year, approximately 19 percent of all school districts were taxing at the \$1.50 limit. By the 2003-04 school year, nearly 40 percent of districts were at the limit. For those school districts, the existence of a binding tax limit means that they are completely unable to respond to the rising costs of education, whether they are attributable to the costs of meeting the new accountability standards, increased enrollment, or other reasons. As more school districts hit the limit, there is a chance that the courts will argue that the current school finance system is unconstitutional because it prevents a sizeable number of districts from providing their students with an *adequate* education, or in the words of Article 7, Section 1 of the Constitution, enough money to guarantee a “general diffusion of knowledge.”

In April 2001, four school districts used the tax rate cap as a basis of a suit filed in District Court. In *West Orange-Cove Consolidated Independent School District v. Nelson* (2001), the plaintiff school districts claimed that because of the tax limit, a significant number of districts no longer have meaningful control over their school tax rates, and thus the local property tax becomes a *de facto* state *ad valorem* property tax; something that is constitutionally prohibited. In July 2001, the District Court ruled that not enough districts were at the tax rate limit to render the system unconstitutional. The judge suggested that the system wouldn't be unconstitutional until the tax rate limit was binding on something like one-half of all school districts. An appeal of the West Orange case is currently pending before the Texas Supreme Court. Preliminary data for the 2003-04 school year indicate that 39 percent of all districts will be at the \$1.50 rate cap, and 34 percent will be within 10 cents of the cap.<sup>22</sup> This suggests to us that unless other aspects of the school finance system are changed, not many years will pass before at least one-half of all school districts are at the \$1.50 limit.

### **Growing Opposition to the Chapter 41 ‘Recapture’ Provisions.**

In 2003, 118 school districts with property wealth in excess of \$305,000 are contributing over \$750 million to help finance education spending by poorer districts. Opposition to the recapture provisions appear to be growing, especially as an increasing number of Chapter 41 districts are reaching the \$1.50 tax cap. In April 2001, four taxpayers filed suit against the Dallas and the Highland Park Independent School Districts. The plaintiffs challenged the constitutionality of the recapture provision and are seeking to prohibit high-wealth school districts from collecting taxes for recapture (Legislative Budget Board, 2001). The case has not yet been heard.

It is not surprising that residents of high-wealth districts are opposed to the recapture provisions. Not only are these school districts unable to increase spending on education, but residents face a tax-price for education that is greater than one. This implies that a dollar increase in per pupil spending will cost residents more than a dollar per pupil. Both Chapter 41 school districts and their residents have strong incentives to use both the political process and the courts to try to eliminate the recapture provision. In addition, Chapter 41 school districts have strong incentives to keep as much revenue as possible out of the equalization system by finding ways to legally shelter local tax revenue.

A strategy that appears to be growing in popularity among Chapter 41 school districts involves granting new business development long-term property tax abatements in return for the business making voluntary “contributions” to the school district (Moak, 2002). Alternatively, in return for a property tax abatement, a company can promise to construct a new school building and donate it to the school district. In both these cases, the school district secures cash or in-kind funding that is not subject to recapture.

---

<sup>22</sup> These percentages were calculated from data available from the Texas Education Agency (2003).

The recapture provision also provides incentives for individual residents of high-wealth school districts to act in ways that may reduce the equity of the school finance system. Because residents of high-wealth districts receive very little direct benefit from the FSP state aid system, they have a strong incentive to try to influence the political process in a way that minimizes the level of state support for education. As the recapture provisions limit the amount of financial support school districts subject to recapture can spend on the public education of their children, residents in those districts may choose to send their children to private school and to oppose proposed increases in both the Tier I base allotment and in the Tier II guaranteed tax base.

### **The Way Forward**

In the previous pages, we have argued that the current system of school finance in Texas is not sustainable in the long run. To meet ever tougher accountability standards, public spending on education in Texas must rise. Without changes, the current state aid system results in an increasing portion of total education revenue coming from local school district property taxes. As more school districts run up against the \$1.50 property tax rate limit, the probability that the system of education finance will yet again be declared unconstitutional increases. Finally, if successful, attempts to eliminate or subvert the recapture provisions would further reduce the amount of money that is available to finance equalization.

These developments suggest that within a few years, the State of Texas will have to substantially increase the fiscal contributions it makes to the financing of education. Without question, finding new sources of revenue to finance a major increase in state aid to education will prove to be very difficult politically, in light of the constitutional prohibition against a state property tax and the long-standing antithesis in Texas to the use of the individual income tax.

Although developing a full reform plan for state aid to education in Texas is well beyond the scope of this paper, we conclude with a brief outline of a possible reform plan. We would leave intact most of the major elements of the existing state aid program. First, we would convert the existing Tier I foundation formula into a inflation and cost-adjusted foundation formula. The foundation amount (or Base Allotment) would be indexed for inflation and adjusted for differences across school districts in the costs of education. We propose replacing the existing system of pupil weights and other cost adjustments with either a single cost index of the type described in Section V of this paper, or with a set of pupil weights, where the value of the weights are generated from a careful study of the costs of different groups of students reaching student performance goals. We would retain the Tier II guaranteed tax base formula, but would index the guaranteed tax base for annual increases in prices. Also, we would retain a property tax limit, although raise it to a level somewhat higher than \$1.50. Finally, because they have become a lightning rod for opposition to the current system of school finance, we would eliminate the recapture provisions. However, to limit taxpayer inequity and to encourage residents of high-wealth school districts to maintain support for adequate funding of public education, we would limit the maximum allowable spending per student to a fixed dollar amount per student in excess of the Tier I base (or foundation) amount.

By indexing Tiers I and II and by making appropriate cost adjustments, the state aid system would guarantee all Texas public school students an “efficient” education. Although, eliminating the recapture provisions would allow somewhat higher spending per pupil in property-wealthy districts, in our view, accepting some degree of spending inequality and less than perfect fiscal neutrality is a quite reasonable price to pay for a system of school funding that would guarantee every student an adequate education.

## References

- Alexander, Celeste D., et al. 2000. *A Study of Uncontrollable Variations in the Costs of Texas Public Education*, A summary report prepared for the 77<sup>th</sup> Texas Legislature, Austin: Charles A. Dana Center, University of Texas-Austin, November. Available at <http://www.utdanacenter.org/researchpolicy/reportsandbriefs.html>.
- Berne, Robert and Leanna Stiefel. 1984. *The Measurement of Equity in School Finance*, Baltimore: Johns Hopkins University Press.
- Carrollton-Farmers Branch School District v. Edgewood Independent School District*. 1992. 826 S.W.2d 489, 1992.
- Center for Public Policy Priorities. 1998. "Measuring Up: The State of Texas Education--History of School Finance in Texas." Available at <http://www.cppp.org/kidscount/education/finance2.html>.
- Claremont School District v. Gregg*. 1997. 635A2d 1375, NH, 1997.
- Coons, John E., William H. Clune III, and Stephen D. Sugarman. 1970. *Private Wealth and Public Education*, Cambridge, MA: Harvard University Press.
- Dillon, Sam. 2003. "States Cut Test Standards to Avoid Sanctions," *New York Times*, May 22. Available at <http://www.nytimes.com/2003/05/22/education/22EDUC.html>.
- Duncombe, William and John Yinger. 1999. "Performance Standards and Educational Cost Indexes: You Can't Have One Without the Other." In *Equity and Adequacy in Education Finance; Issues and Perspectives*, edited by Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen, Washington, D.C.: National Academy Press: 260-297.
- Duncombe, William and John Yinger. 2000. "Financing Higher Student Performance Standards: the Case of New York State," *Economics of Education Review* 19: 363-386.
- Edgewood Independent School District et al. v. Kirby et al.* 1989. 777 S.W.2d 391, 1989.
- Edgewood Independent School District v. Meno*. 1995. 917 S.W.2d 717, 1995.
- Johns, Thomas L. 1976. "1975 School Aid Legislation: A Look at Three States," *Journal of Education Finance* 1 (Winter): 397-406.
- Legislative Budget Board. 2000. *Fiscal Size-Up; 2000-01 Biennium Texas State Services*, Austin: Texas Legislature, January.
- Legislative Budget Board. 2001. *Financing Public Education in Texas-Kindergarten through Grade 12: Legislative Primer*, Third Edition, prepared the Legislative Budget Board

- staff, Texas Legislature, October. Available at [http://www.lbb.state.tx.us/Education/Public/Finance\\_PublicEd\\_3dEd\\_1001.pdf](http://www.lbb.state.tx.us/Education/Public/Finance_PublicEd_3dEd_1001.pdf).
- Moak, Lynn. 2002. "Economic Development versus Equity," paper presented at the Annual Conference of the American Education Finance Association, Albuquerque, New Mexico, March 8.
- Minorini, Paul A. and Stephn D. Sugarman. 1999. "School Finance Litigation in the Name of Educational Equity: Its Evolution, Impact, and Future," in *Equity and Adequacy in Education Finance; Issues and Perspectives*, edited by Helen F. Ladd, Rosemary Chalk, and Janet S. Hansen, Committee on Education Finance, Commission on Behavioral and Social Sciences and Education, National Research Council, Washington, DC: National Academy Press.
- Murnane, Richard J. and Frank Levy. 2001. "Will Standards-Based Reforms Improve the Education of Students of Color?" *National Tax Journal* 54 (June): 401-415.
- National Center for Education Statistics. 2001a. *NCES Statistics in Brief*, Revenues and Expenditures for Public Elementary and Secondary Education: School Year 1998-99, Table 5. Washington, DC: NCES, March. Available at <http://nces.ed.gov/pubs2001/2001321.pdf>.
- National Center for Education Statistics. 2001b. *Projections of Education Statistics*, Chapter 1, Table 4: Enrollments in Grades K-12 in Public Elementary and Secondary Schools, by Region and State, with Projections: Fall 1993 to Fall 2011. Washington, D.C.: NCES.
- Picus, Lawrence O. and Linda Hertert. 1993. "Three Strikes and You're Out: Texas School Finance After *Edgewood III*," *Journal of Education Finance* 18 (Spring): 366-389.
- Picus, Lawrence O. and Laurence A. Toenjes. 1994. "Texas School Finance: Assessing the Equity Impact of Multiple Reforms," *Journal of Texas Public Education* 2 (3): 39-61.
- Reschovsky, Andrew and Jennifer Imazeki. 1998. "The Development of School Finance Formulas to Guarantee the Provision of Adequate Education to Low-Income Students." In *Developments in School Finance, 1997*, Washington, D.C.: National Center on Education Statistics, U.S. Department of Education, 1998:121-148.
- Reschovsky, Andrew and Jennifer Imazeki. 2000. "Developing a Cost Index for School Districts in Illinois," a report submitted to the Illinois State Board of Education, Madison, WI: La Follette School of Public Affairs, University of Wisconsin-Madison, April.
- Reschovsky, Andrew and Jennifer Imazeki. 2003. "Let No Child Be Left Behind: Determining the Cost of Improving Student Performance," *Public Finance Review* 31 (May): 263-290.
- Rodriguez v. San Antonio Independent School District*. 1973. 411 U.S. 1, 1973.

- Rose v. Council for Better Education*. 1989. 790 S.W.2d 186, KY, 1989.
- Texas Association of School Boards. 1996. *The Basics of Texas Public School Finance*. Sixth edition. Austin, TX.
- Texas Education Agency. 2000. *Snapshot 2000: 1999-2000 School District Profiles*, Division of Performance Reporting, Austin: TEA. Available at <http://www.tea.state.tx.us/perfreport/snapshot/2000/pdf/snap001.pdf>.
- Texas Education Agency. 2002a. *Pocket Edition 2000-01; Texas Public School Statistics*, "Students" table, Division of Performance Reporting, Austin: TEA. Available at <http://www.tea.state.tx.us/perfreport/pocked/2001/panel3.html>.
- Texas Education Agency. 2002b. *TAAS 2003 Early Indicator Summary Report; Comparison of Results at Current and Higher Standards*, Grade 3 report, Austin: TEA. Available at <http://www.tea.state.tx.us/student.assessment/taks/eipart2/2002/g3.pdf>.
- Texas Education Agency. 2003. "CPTD Tax Preliminary: Tax Year 2002 and School Funding Year 2003-2004," Available at <http://www.tea.state.tx.us/school.finance/>.
- Texas State Historical Association. 2001. "Edgewood ISD v. Kirby," in *Handbook on Texas Online*. Available at <http://www.tsha.utexas.edu/handbook/online/articles/view/EE/jre2.html>.
- Thomas, Stephen B. and Billy Don Walker. 1982. "Texas Public School Education," *Journal of Education Finance* 8 (Fall): 223-281.
- U.S. Department of Education. 2002. *The No Child Left Behind Act of 2001: Executive Summary*. Available at <http://www.ed.gov/offices/WESE/esea/exec-sum.html>.
- West Orange-Cove Consolidated Independent School District v. Nelson*. 2001. No. GV1-00528, \*2, 250<sup>th</sup> Judicial District Court, Travis County.

<p style="text-align: center;"><b>Table 1</b></p> <p style="text-align: center;"><b>Equalized Property Value and Revenue per Pupil</b></p> <p style="text-align: center;"><b>Texas K-12 School Districts, 2001-01</b></p>		
	Equalized Property Value per pupil	Revenue Per Pupil
Number of districts	958	958
Mean	\$210,586	\$7,214
Standard Deviation	199,106	1,498
Range	2,156,904	15,881
Minimum	11,295	2,717
Maximum	2,168,199	18,598
Restricted Range	311,474	2,901
10th percentile	79,907	5,940
90th percentile	391,381	8,841
Coefficient of variation	0.945	0.223
Gini coefficient	0.389	0.102
Wealth Elasticity		0.125
Correlation:		
Revenue per pupil and equalized property value per pupil	0.5849	

**Table 2**  
**Changes in School Financing Equity, 1987-88 to 2000-01**  
**Texas K-12 School Districts**

School Year	Distribution of Revenue Per Pupil				
	Average	Standard Deviation	Coefficient of Variation	Gini Coefficient	Wealth Elasticity
1987-88	\$3,926	\$1,082	0.276	0.129	0.199
1988-89	\$4,027	\$1,145	0.284	0.130	0.219
1989-90	\$4,262	\$1,171	0.275	0.127	0.217
1990-91	\$4,703	\$1,244	0.264	0.124	0.190
1991-92	\$5,100	\$1,537	0.301	0.127	0.167
1992-93	\$5,360	\$1,360	0.254	0.118	0.139
1993-94	\$5,397	\$1,533	0.284	0.121	0.156
1994-95	\$5,435	\$1,194	0.220	0.106	0.126
1995-96	\$5,831	\$1,314	0.225	0.107	0.108
1996-97	\$5,800	\$1,271	0.219	0.105	0.114
1997-98	\$6,225	\$1,525	0.245	0.111	0.134
1998-99	\$6,417	\$1,547	0.241	0.109	0.131
1999-2000	\$6,925	\$1,456	0.210	0.099	0.110
2000-01	\$7,233	\$1,611	0.223	0.102	0.125

<b>Table 3</b>					
<b>Distribution of Revenue Per Pupil by Pupil-Weighted Quintiles for Selected District Characteristics</b>					
<b>Texas K-12 School Districts, 2000-01</b>					
<b>Quintiles</b>	<b>Quintile Statistics</b>				<b>Revenue Per Pupil</b>
	Mean	Number of Districts	Minimum Value	Maximum Value	
<b>District Size (Number of Students)</b>					
1	1,040	765	56	3,745	\$7,430
2	6,433	125	3,815	12,983	6,334
3	19,615	41	13,161	29,875	6,372
4	41,835	19	31,536	57,273	6,534
5	96,989	8	58,866	208,462	6,280
<b>Percent of Students from Poor Families</b>					
1	18.9%	140	0%	26.8%	\$6,853
2	36.2	268	26.9	43.6	7,121
3	49.3	244	43.7	55.2	7,133
4	63.0	219	55.3	74.4	7,527
5	83.9	87	74.5	97.3	7,522
<b>Percent of Students Enrolled in English as a Second Language (ESL)</b>					
1	1.4%	474	0%	3.6%	\$7,378
2	5.2	197	3.7	7.1	6,955
3	9.7	161	7.2	12.8	7,202
4	17.4	82	13	27	7,182
5	40.7	44	27.2	61.3	6,709
<b>Percent of Students in Special Education</b>					
1	8.3%	103	2.3%	9.9%	\$7,172
2	10.5	74	10	11	7,401
3	11.7	121	11.1	12.2	6,753
4	13.3	223	12.3	14.2	6,856
5	17.6	437	14.3	41.3	7,502
<b>Equalized Property Value per Pupil</b>					
1	\$90,383	331	\$11,295	\$122,392	\$6,850
2	141,339	184	122,555	163,194	6,840
3	185,352	170	163,208	211,513	6,815
4	246,168	114	211,735	292,214	7,471
5	542,426	159	292,831	2,168,199	8,649

<b>Table 4</b>							
<b>Distribution of Student Outcomes by Pupil-Weighted Quintiles for Selected District Characteristics</b>							
<b>Texas K-12 School Distircts, 2000-01</b>							
<b>Quintiles</b>	<b>Passing Rate for TAAS Exams</b>				<b>Dropout Rate</b>	<b>% Taking College Board Exams</b>	<b>% Passing College Board Exams</b>
	<b>All Students</b>	<b>African- Americans</b>	<b>Hispanics</b>	<b>Poor Students</b>			
<b>District Size (Number of Students)</b>							
1	84.22	73.66	78.53	78.51	0.71	61.43	19.76
2	83.56	76.23	78.34	75.98	1.02	61.07	24.99
3	83.41	78.19	78.58	76.30	1.20	57.53	26.00
4	84.63	77.91	77.73	75.28	0.86	70.23	31.45
5	77.03	70.65	71.40	69.03	1.81	61.46	27.91
<b>Percent of Students from Poor Families</b>							
1	89.68	79.56	82.76	80.64	0.55	69.08	30.84
2	86.37	74.96	79.32	79.20	0.59	62.31	23.11
3	84.92	74.66	79.06	79.04	0.79	61.41	20.29
4	80.80	70.11	76.43	75.86	0.90	57.89	17.90
5	73.61	76.49	72.23	71.91	1.39	54.59	7.45
<b>Percent of Students Enrolled in English as a Second Language (ESL)</b>							
1	85.97	75.51	80.75	79.98	0.61	62.73	22.25
2	84.97	73.86	78.38	77.68	0.79	62.10	22.33
3	81.99	72.14	75.64	75.32	0.98	59.14	21.11
4	81.18	75.31	76.38	76.33	1.06	60.29	17.52
5	72.11	77.50	70.20	69.89	1.39	54.40	8.97
<b>Percent of Students in Special Education</b>							
1	82.82	76.94	77.25	76.50	0.90	64.36	22.25
2	82.76	77.51	77.36	76.10	0.77	62.40	21.99
3	84.29	73.20	78.89	77.46	0.90	60.41	23.99
4	83.93	73.46	77.85	77.21	0.85	61.21	20.59
5	84.55	74.72	79.08	79.10	0.69	60.89	20.01
<b>Equalized Property Value per Pupil</b>							
1	83.13	76.15	78.14	78.22	0.85	58.31	17.30
2	83.57	73.84	77.35	77.39	0.83	59.13	20.59
3	83.77	72.48	77.64	76.42	0.76	62.39	23.31
4	84.14	73.85	78.34	77.15	0.81	66.19	24.44
5	86.75	75.39	81.30	80.21	0.59	66.12	24.68

**Table 5**

**Education Cost Function, 2000-01  
875 K-12 School Districts**

Variable	Coefficient	t-statistic
Intercept	-2.53	-0.95
Log of composite exam score, 2000-01	9.19*	4.6
Log of lagged composite exam score, 1998-2000	-6.6*	-4.54
Percent passing College Board exams	0.98*	5.61
Teacher salary index	0.004*	5.84
Percent of students eligible for free and reduced price lunch	0.57*	5.84
Percent of students with disabilities	-0.08	-0.29
Percent of students with severe disabilities	-10.75*	-2.56
Percent of students with limited English	-0.17*	-1.9
Percent of students enrolled in high school	-0.37	-1.31
Log of student enrollment	-0.28*	-5.12
Square of log of student enrollment	0.015*	5.04
Indicator for Dallas or Houston	-0.259*	-4.65
SSE	8.265	

\* indicates statistically significant at the 5% level

\*\* indicates statistically significant at the 10% level

<b>Table 6</b>						
<b>Distribution of Revenue Per Pupil by Pupil-Weighted Quintiles for Selected District Characteristics</b>						
<b>Texas K-12 School Districts, 2000-01</b>						
<b>Quintiles</b>	<b>Quintile Statistics</b>				<b>Revenue Per Pupil</b>	<b>Cost-Adjusted Revenue Per Pupil</b>
	Mean	Number of Districts	Minimum Value	Maximum Value		
<b>District Size (Number of Students)</b>						
1	1,142	682	99	3,883	\$7,226	\$7,120
2	6,426	121	3,933	12,515	6,333	7,041
3	19,203	41	12,983	29,687	6,389	6,833
4	40,393	19	29,875	53,999	6,488	7,403
5	96,790	8	57,273	208,462	6,383	6,608
<b>Percent of Students from Poor Families</b>						
1	18.5%	128	1.2%	26.5%	\$6,843	\$8,095
2	36.1	268	26.6	44	6,977	7,380
3	49.6	218	44.1	55.3	7,079	6,997
4	63.0	183	55.4	74.4	7,223	6,608
5	84.4	74	74.5	97.3	7,026	5,852
<b>Percent of Students Enrolled in English as a Second Language (ESL)</b>						
1	1.5%	419	0%	3.6%	\$7,124	\$7,371
2	5.2	184	3.7	7.1	6,891	7,116
3	9.6	146	7.2	12.5	7,021	6,884
4	17.3	82	12.7	27.2	7,175	6,660
5	41.1	40	28	60.5	6,605	5,811
<b>Percent of Students in Special Education</b>						
1	8.5%	89	3.9%	9.9%	\$7,012	\$7,217
2	10.5	66	10	11	7,192	7,331
3	11.7	129	11.1	12.3	6,657	6,876
4	13.3	196	12.4	14.2	6,757	6,905
5	17.2	391	14.3	38.1	7,286	7,200
<b>Equalized Property Value per Pupil</b>						
1	\$89,969	307	\$11,295	\$122,392	\$6,781	\$6,603
2	140,996	170	122,555	162,905	6,711	6,701
3	183,380	148	163,134	208,702	6,706	7,026
4	242,796	112	208,870	292,831	7,153	7,370
5	524,200	134	293,547	1,340,059	8,314	8,581