

Section 1

Education Cost Indexing in Theory and Practice

1.1 INTRODUCTION

This section presents Texas school district officials' perspectives on the issue of uncontrollable costs of education. We gathered information about their perspectives through interviews conducted in the spring and summer of 2000, to provide a snapshot of the current cost environment faced by Texas school district officials. This section also contains an overview of the various funding adjustments used in Texas and in other states to address the issue of uncontrollable costs.

1.2 PRACTICAL ISSUES REGARDING ADJUSTMENTS TO EDUCATIONAL SPENDING

Over the course of this study, we maintained an open dialogue with many school administrators, school board members, regional service center representatives, and leaders from education associations, by means of regional presentations, roundtable discussions, electronic mailing lists, and many informal discussions. Between February and June 2000, our research team also conducted formal interviews with administrators and officials from twenty-seven Texas school districts, in order to gain a practical view of the financial pressures currently faced by Texas school districts. Our researchers posed general questions about the cost pressures that Texas school districts face, with particular emphasis on costs beyond the control of district officials. Many of the costs cited were universal, while others were unique to districts with specific characteristics.

The issues raised most frequently by school district officials concerned uncontrollable costs associated with

- Teacher and auxiliary personnel salary costs,
- Recruitment costs,
- The cost of health insurance and other employee benefits, and
- The cost of building and maintaining schools.

Several administrators suggested that the recruitment of teachers is moving from a local market to a statewide and national market, thus dramatically increasing costs. The current strength of the economy has also made it more difficult to recruit and retain people for auxiliary positions. This problem is most severe for positions that require skills that are easily transferable to other industries, such as computer technicians and accountants. One official, whose district uses a software commonly used in many types of businesses, explained, Our people are sought for knowledge that is transferable between us and any other business that runs that software. The marketplace actually sets the price levels we have to pay and, let me tell you, they are considerably higher.

The rising cost of employee benefits, particularly health insurance, was another topic of great concern. The difficulty of finding a high-quality but affordable medical insurance provider, defined

by an official as one that provides reasonably good coverage and doesn't cost them a fortune, was mentioned again and again. District personnel recognize that prospective teachers examine compensation packages along with salaries and are especially concerned about the competitiveness of their benefit packages: It's not just the beginning teacher salary, [it is] what kind of compensation package is required of you. Many officials advocated for the creation of an insurance pool of a larger group of districts or teachers, in order to gain bargaining power in the search for affordable medical insurance. As one administrator stated, [P]rovide some type of assistance to teachers through the system of state employee benefits and use the leverage of the state, the size, to leverage costs with the big insurance carriers.

Officials from small and rural school districts raised several issues specific to the size and isolation of their home communities. Many of these officials felt that limited availability of certain goods and services caused their districts to pay more than market rates for some items. In many cases, only one source of supplies or services was available in their area. As one official noted, [W]e usually get one bid for anything that we need done. And we try to find somebody that is going to do the best job and the most professional job. You just have to pay what they charge. There is no competition. School districts in small communities reported that a lack of housing, particularly rental housing, made it difficult to attract and retain teachers. We try to pay a little above always so that we can get good teachers to drive out here since there is not housing available. Remote locations also impose additional transportation and delivery costs on the districts. As one superintendent pointed out, When you live rurally, you always have to have more travel expenses [because] you are going to go farther.

Officials from large school districts also highlighted several unique circumstances that affect their ability to attract and retain teachers, including long commute times, safety concerns, and a shortage of affordable housing. One official said, Many people find big cities less preferable to life in the suburban areas or in rural areas. That is because of congestion and perceived inner city factors such as safety, proximity to other people, and having your space. Most people would prefer to be on the outskirts of the big city so we find ourselves at the competitive disadvantage when it comes to our suburban neighbors. Administrators from large districts also noted that many teachers believe that urban students are more difficult to work with than students from suburban or rural areas and so require higher salaries. One superintendent said, I think they consider the type of student they are going to be working with. If the district is [students of] high economic [status], teachers think the students will be easier to work with [and that] they won't have as many problems.

Large urban districts also face a fiercely competitive job market that pulls personnel away from school districts. We have to compete directly with business, was a common response. As one administrator explained, The competition is much keener in the Metroplex area to attract and retain teachers and staff. It is not just teachers. It is your entire district all employees.

1.3 ADDRESSING UNCONTROLLABLE VARIATIONS IN COST

In the early 1900s, Ellwood P. Cubberley and Paul R. Mort published a number of books and articles that set the tone for subsequent discussions of school finance. Their work spawned a substantial professional literature focused on strategies for adjusting school finance formulas to address uncontrollable cost variations. That literature can be roughly divided into two categories: cost-of-living adjustments and cost-of-education adjustments.

1.3.1 The Cost of Living Approach

The premise behind the cost of living approach to making adjustments to school district funding 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 thus becomes a proxy for the cost of education that cannot be directly influenced by school district policy.

There are two strategies for estimating variations in the local cost of living. One strategy is to examine the cost of a specified collection of goods and services used by consumers in each community in a method called the market basket approach. The total costs of a basket of consumer goods and services in each community are compared to illustrate differences in the cost of living. The second strategy is to calculate the true cost of hiring teachers by observing the regional variations of salaries of comparable professionals (Richard Rothstein and James Smith, 1997; James Guthrie and Richard Rothstein, 1999). This strategy does not assume that teacher salaries are exactly the same as salaries of other professionals; rather, it assumes a relatively constant relationship across localities between the salaries of teachers and other professionals (Rothstein and Smith, 1997). The application of this second strategy requires the calculation of an index based on the salaries or wages of people in occupations that are similar to school district employees, but not including school district employees.

There are a number of advantages to the cost of living approach. The clearest advantage is that cost of living indices measure costs that are beyond the control of school district administrators. The cost of living approach is also quite straightforward. While there are still many complex measurement issues involved (Rothstein and Smith, 1997; Mark Wynne and Fiona Sigalla, 1994), the approach produces cost measures that can be compared relatively easily and directly.

There are also a number of disadvantages to the cost of living approach. First, high-quality, current data can be expensive to collect. In addition, using the market basket approach can be problematic because people in different locales often purchase different mixes of goods and services. In other words, a market basket approach relies on comparability: for researchers to make a viable comparison, the items purchased in the compared communities must be similar. This poses some challenges, since, for example, people in urban areas often buy different items than do people in rural areas (Rothstein and Smith, 1997). Further, the market basket approach does not reflect local variations in community characteristics such as climate, crime rates, or cultural amenities.

Walter McMahon (1994) argues that because teachers may live outside the district in which they teach, the cost of living index values for districts may misestimate their actual cost of education. Education cost adjustments based on a cost of living index may overcompensate districts that face a high cost of living but which also have a number of amenities that make those districts desirable places to work (Rothstein and Smith, 1997).

1.3.2 The Cost-of-Education Approach

The second approach to making adjustments to school district funding is the cost-of-education approach. This approach uses data on educational expenditures to estimate either the cost of providing a comparable level of educational services (Jay Chambers, 1997) or the cost of producing comparable educational outcomes (William Duncombe, John Ruggiero, and John Yinger, 1996; Jennifer Imazeki and Andrew Reschovsky, 1999). The former strategy generates an estimate of the amount each district would have to spend to hire a typical staff. The latter strategy generates an estimate of 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).

The cost-of-education approach has a number of attractive features. Instead of using indirect proxies of education cost differences, as the cost of living approach does, it directly examines actual school district expenditures. The cost-of-education approach goes beyond the direct comparison of district expenditures, however, by using regression analysis to estimate the cost of providing equivalent levels of educational services or outcomes. Regression analysis is a mathematical model that allows researchers to separate the effects of cost factors under the control of school district administrators from cost factors beyond their control (Chambers, 1981; 1995; 1997; Eric Hanushek, 1999; Laurie Peternick, et al., 1997). This 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 which are not considered in most cost of living adjustments (Chambers, 1981; Peternick, et al., 1997). Finally, 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.

There are also a number of potential disadvantages to the cost-of-education approach. McMahon (1994) questions the reliance on an analysis of district expenditures, arguing that district officials can manipulate many of these expenditures. He further argues that increases in district spending that are improperly interpreted could unfairly lead to increased state aid allocations. Rothstein and Smith (1997) share this concern that districts that spend the most may get the biggest reward in state funding. A proper accounting for all relevant uncontrollable and discretionary cost factors may be difficult because of incomplete theoretical guidance, measurement difficulties, and missing data (Chambers, 1981). Dan Goldhaber (1999) pointed out, for example, that 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.

1.4 ADJUSTMENTS USED IN TEXAS

The adjustment that Texas currently uses to compensate school districts for costs beyond the control of district officials is the Cost-of-Education Index. The Cost-of-Education Index was developed by the Legislative Education Board and adopted by the Foundation School Fund Budget Committee in December 1990.¹ The method for calculating the Cost-of-Education Index is described in section 16.102(a) of the Texas Education Code: The basic allotment for each district is adjusted by multiplying the amount of the basic allotment by an index factor that reflects the geographic variation in known resource costs and costs of education due to factors beyond the control of the school district.

Texas began using its first adjustment to state aid for school districts as early as 1915 (David Monk and Billy Walker, 1991). This adjustment was focused on assisting rural school districts. The state did not move to a system of input-based adjustments to more fully address issues of inequity among school districts until 1984 (Monk and Walker, 1991). This adjustment, called the Price Differential Index, was adopted in a special session of the 68th Legislature as part of House Bill 72. It was originally based upon two factors: 1) a measurement of the average salary enrichment of teachers in a limited geographic area designed to reflect each district's labor market and 2) the percentage of students who qualified for compensatory education funding. However, this version of the index was only temporary.

Soon afterwards, the State Board of Education appointed an advisory committee to develop a new version of the Price Differential Index that was based on a regression model of teacher salaries from the 1983—84 school year. The State Board of Education adopted this version of the Price Differential Index in December of 1984. This index was applied to seventy-six percent of the Basic Allotment for school districts.

The index for Texas was again amended in December 1990, when the Cost-of-Education Index was adopted. At that time, only four other states Alaska, Florida, Missouri, and Ohio had educational finance systems that were designed to address differences in the cost of inputs, and the adjustment used in Missouri was not funded.

The Cost-of-Education Index adopted in 1990 did not resolve all of the difficulties associated with earlier education finance adjustments. The very definition of the index used in Texas raised some questions since only certain costs beyond the control of the school district were included in the construction of the index. Differences in opinions existed as to which costs were beyond the control of districts (Monk and Walker, 1991) and debate continues on this question, as our interviews with school administrators illustrated. In addition, the school district data used to compute the Cost-of-Education Index was from 1989–90, and Texas has used the index since that time without updating the underlying data. Issues related to the appropriateness of this data have raised concerns among many Texas legislators regarding the CEI and prompted the 76th Legislature to call both for an examination of the current index and for recommendations of new indices.

1.5 ADJUSTMENTS USED IN OTHER STATES

Several different types of state aid adjustments related to district economic circumstances and resource cost differences are in use in other states. Each of these adjustments responds to a different type of funding inequity. The various adjustments, their construction, and the funding inequity they target are detailed below. It is important to bear in mind, however, that every adjustment is based on different assumptions. Due to the fact that large sums of money are linked to these assumptions, creating or modifying an adjustment is often a highly politicized process.

The most common forms of funding adjustment are

- Scale adjustments for small or rural districts,
- Cost of living or consumer market basket adjustments,
- Teacher education and experience adjustments, and
- Cost-of-education index adjustments.

Scale adjustments are a common mechanism for addressing price issues faced by small and rural school districts. When Deborah Verstegen's *School Finance at a Glance* was published in 1988, thirty-one states included this type of adjustment in their state funding formulas.

Florida, Colorado, Ohio, and Wyoming use **cost of living adjustments**. This approach can be costly, due to the large amount of data that must be collected in order to make the necessary comparisons. For example, until last year, Florida spent approximately \$250,000 per year collecting consumer price data. This year, because less information is being collected and because it is being collected by phone rather than in person, the data collection process in Florida will cost roughly \$100,000.

Teacher education and experience adjustments attempt to compensate for the additional costs of attracting teachers with various levels of education and experience to a district (Stephen Barro, 1992).

Teacher characteristics can affect school districts' willingness to pay because they represent the employee's potential productivity. For example, a school district may be willing to pay more for teachers with advanced degrees if district officials believe that these teachers are more effective in the classroom. Since wealthier districts have more funding with which to attract and retain teachers, one criticism of teacher education and experience adjustments is that they may further existing educational inequities. In other words, teachers are more likely to remain in a higher paying district and to attain higher education levels if they receive additional compensation for further education. Nevertheless, this strategy may provide adjustments to districts that already have more resources to recruit and retain teachers with more experience and education.

Cost-of-Education Index Adjustments are 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. Currently, Texas is the only state that uses a Cost-of-Education Index. Details regarding the Texas Cost-of-Education Index, its data, and possible alternatives to the existing CEI are discussed in detail in the following sections.

¹ The Foundation School Fund Budget Committee adopted the existing CEI in December 1990. The Committee also readopted the 1990 CEI in 1993, 1995, and 1997. The Committee was abolished by statute in 1997.