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# When What You Know Ain't Necessarily So: A Comparative Analysis of the Texas School Foundation Program Revenues for Independent and Charter School Districts

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# When What You Know Ain't Necessarily So: A Comparative Analysis of Texas Foundation School Program Revenues for Independent and Charter School Districts[1]

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Texas charter school districts (CSDs) are accredited and monitored by the Texas Education Agency (TEA) utilizing the various components within the state accountability systems for both state and federal requirements. Yet, Texas CSDs are believed to operate with few regulatory restrictions on administrative, instructional, and pedagogical methods. Texas independent school districts (ISDs) and charter school districts are subject to some TEA-required administrative, instructional, and pedagogical standards. Despite these commonalities, to-date no independent fiscal analysis of ISD-CSD revenue distributions has been conducted. As such, the purpose of this article is to conduct comparative analyses of revenues generated from the Texas Foundation School Program (FSP) for ISDs and CSDs. As part of this analysis, Texas funding formula components for ISDs and CSDs were analyzed to assess and compare overall revenue generation levels, levels of equity exhibited by revenue distributions, and demographic and financial data.

### An Explanation of the Texas Public School District Funding Mechanism

Public schools in Texas receive state revenue funds based on the average daily attendance of students. The Texas school funding formula, called the Texas Foundation School Program (FSP), is the source of state funding for all Texas school districts.[2,3] In its current form, the FSP is meant to ensure that all school districts, regardless of property wealth, receive "substantially equal access to similar revenue per student at similar tax effort."[4] In fact, the major differences between ISDs and CSDs are that CSDs do not receive funds from local tax revenue sources and do not have access to state facilities allotments.

The FSP funding formula originally was designed to generate substantially equal revenues for school district daily maintenance and operation–not capital or debt servicing–expenses. (See Appendix A.) Comprised of three funding sections, Tier I of the FSP is structured as a basic foundation formula, consisting of a basic allotment per student and a series of weighted adjustments that account for differences in student and district characteristics, e.g., population density or the percentage of students labeled as economically disadvantaged within a district.[5] In addition to these components, each district qualifies for transportation allotments based on the number of students riding buses divided by the approved route miles. As such, the basic allotments plus the district, student, and transportation adjustments sum to provide a district's per student state allocation within Tier I. This amount is adjusted by a district's "Local Fund Assignment," i.e., revenue generated through local taxation at a specific rate. Consequently, adjusted state aid equals the Tier I Entitlement minus the Local Fund Assignment.

Tier II operates as a guaranteed-yield funding mechanism. Unlike Tier I, Tier II state revenue is generated based on the maintenance and operation tax rates set by local districts. For example, every cent of tax the district levies is guaranteed to receive a specified dollar amount per weighted student. (See Appendix B.) Under a third section for facilities, informally known as Tier III, revenues for capital and debt services, i.e., "Interest and Sinking," or I&S, rates, are unadjusted formulaically. However, three state programs–"Existing Debt Allotment" (EDA), "Instructional Facilities Allotment" (IFA), and "New Instructional Facilities Allotment" (NIFA)–are designed to assist districts with these types of costs. Nonetheless, districts bear the primary responsibility for facilities costs that typically are funded through voter-approved property tax assessments.

While the preponderance of education revenues generated by the FSP are represented by this three-part funding system, state revenue generation is affected by one more major feature of the funding mechanism referred to as "Fiscal Recapture." The recapture provision of Texas's school finance program requires districts with property tax wealth per "Weighted Average Daily Attendance" (WADA) above the 88th percentile (known as Chapter 41 districts) to share the local wealth by choosing one of five options:

(1) Consolidate with a poorer school district.
(2) Detach property to another school district for taxation purposes.
(3) Purchase average daily attendance credits from the state.
(4) Contract for the education of nonresident students by partnering with a poorer district.
(5) Consolidate the tax base with one or more other districts.

Most Chapter 41 districts, which comprise less than 15% of all districts, choose either the third or fourth option.

For CSDs, on the other hand, the FSP calculates revenues based on an average adjusted allotment–a value that is ubiquitous to all CSDs–not a specific district-based adjusted allotment. Specifically,

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this statewide average adjusted allotment is applied to all individual CSDs regardless of school size, level of sparsity among students living in the district, and cost of education differentials that vary by CSD. Two more items are important to note: CSDs do not receive I&S fund revenues, and, contrary to popular belief, CSDs may choose to receive transportation funding, though not all choose to do so.[6] It is with the understanding of these differences in revenue generation formulas that forms the context for the analysis in this examination.

## Description of Methodological and Data Analysis Techniques

Data analyzed were obtained, defined, calculated, and reported from one primary source–the Public Education Information Management System (PEIMS) managed by the TEA. The data elements were combined state-local revenues from general fund sources (excludes all I&S revenues), combined state-local revenues from all fund sources (includes all I&S revenues), and district and student characteristics defined by specific components within the FSP, e.g., maintenance and operations taxing effort.

Statistical analyses focused on these data elements because the Texas state funding mechanism is in place to distribute resources equitably while reducing the influence of individual district wealth and various student needs. Univariate and multivariate statistical analyses were conducted to examine operationalized variables and equity relationships for Texas ISDs and CSDs for the 2005 to 2009 academic years. Univariate statistics – means, medians, standard deviations, ranges, and percentiles–were used to provide general descriptions of individual variables. Standard equity statistics–percentile ratios and coefficients of variation–were used to determine levels of horizontal equity.[7] Multivariate statistical analyses were conducted to examine operationalized variables and efficacy relationships for Texas school districts over the same period.[8] Standardized beta coefficients from ordinary least squares (OLS) regression analyses were used to make inferences concerning the effects of various district characteristics on spending and their influence on levels of combined state and local expenditures per student.

## Equity Outcomes of the Current Utilized FSP Components

From 2005 to 2009, average combined state and local education revenue per weighted student for all ISDs increased from $4,779 to $5,954–an annual average gain of 5.7% over the five-year period. (See Table 1.) Median combined state and local education revenue per weighted student experienced similar increases. While the standard deviation increased throughout the period examined, the coefficient of variation also increased from 0.158 to 0.199–an annual average gain of 7.1%. Analyzing horizontal measures that examine percentile ratios, the 95th to 5th ratio showed an average annual increase of 2.7%; the 90th to 10th ratio showed an average annual increase of 2.9%; and the 75th to 25th ratio showed a slight average annual increase of 0.8%. Even though statistical evidence showed slow degeneration in levels of equity, high expenditure ISDs still spent as much as 1.6 times more than their low expenditure counterparts. Therefore, even the though the average combined state

**Table 1**
***Horizontal Equity Statistics for All Texas Public School Districts: Combined State and Local Education Revenue per Weighted Student, 2005-2009***

| Year | General Fund Revenues | | | | | | All Fund Revenuew | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | Average Annual Percent Change | 2005 | 2006 | 2007 | 2008 | 2009 | Average Annual Percent Change |
| Mean | 4,779 | 4,934 | 5,111 | 5,731 | 5,954 | 5.71 | 5,209 | 5,390 | 5,595 | 6,262 | 6,602 | 6.16 |
| Median | 4,704 | 4,787 | 4,954 | 5,407 | 5,653 | 4.74 | 5,115 | 5,206 | 5,425 | 5,960 | 6,270 | 5.26 |
| Standard Deviation | 756 | 1,003 | 928 | 1,199 | 1,185 | 13.31 | 897 | 1,187 | 1,078 | 1,335 | 1,542 | 15.62 |
| Coefficient of Variation | 0.158 | 0.203 | 0.182 | 0.209 | 0.199 | 7.04 | 0.172 | 0.220 | 0.193 | 0.213 | 0.234 | 8.90 |
| Percentile: | | | | | | | | | | | | |
| 95 | 5,857 | 6,336 | 6,446 | 7,781 | 7,943 | 8.18 | 6809 | 7106 | 7280 | 8768 | 9024 | 7.54 |
| 90 | 5,304 | 5,622 | 5,811 | 6,761 | 7,060 | 7.53 | 6150 | 6431 | 6611 | 7597 | 8039 | 7.03 |
| 75 | 4,960 | 5,059 | 5,267 | 5,912 | 6,189 | 5.76 | 5505 | 5662 | 5869 | 6598 | 6919 | 5.95 |
| 25 | 4,454 | 4,573 | 4,747 | 5,147 | 5,379 | 4.85 | 4719 | 4844 | 5018 | 5546 | 5827 | 5.46 |
| 10 | 4,145 | 4,239 | 4,479 | 4,927 | 4,927 | 4.48 | 4364 | 4473 | 4736 | 5204 | 5510 | 6.03 |
| 5 | 3,884 | 3,995 | 4,228 | 4,748 | 4,748 | 5.25 | 4044 | 4205 | 4457 | 4954 | 5233 | 6.69 |
| Percentile Ratios: | | | | | | | | | | | | |
| 95/5 | 1.508 | 1.586 | 1.525 | 1.639 | 1.673 | 2.72 | 1.684 | 1.690 | 1.633 | 1.770 | 1.724 | 0.70 |
| 90/10 | 1.280 | 1.326 | 1.297 | 1.372 | 1.433 | 2.91 | 1.409 | 1.438 | 1.396 | 1.460 | 1.459 | 0.91 |
| 75/25 | 1.114 | 1.106 | 1.110 | 1.149 | 1.151 | 0.83 | 1.167 | 1.169 | 1.170 | 1.190 | 1.187 | 0.45 |
| n | 1,037 | 1,033 | 1,031 | 1,031 | 1,030 | | 1,037 | 1,033 | 1,031 | 1,031 | 1,030 | |



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**Table 2**
***Horizontal Equity Statistics for All Texas Charter School Districts: Combined State and Local Education Revenue per Weighted Student, 2005-2009***

| Year | General Fund Revenues | | | | | | All Funds Revenue | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | Average Annual Percent Change | 2005 | 2006 | 2007 | 2008 | 2009 | Average Annual Percent Change |
| Mean | 4,474 | 4,776 | 4,471 | 4,955 | 5,269 | 4.38 | 4,640 | 5,023 | 4,643 | 5,155 | 5,475 | 4.48 |
| Median | 4,307 | 4,455 | 4,455 | 4,976 | 5,285 | 5.34 | 4,446 | 4.624 | 4.730 | 5.198 | 5.437 | 5.20 |
| Standard Deviation | 1,929 | 4,491 | 985 | 872 | 875 | 10.90 | 1,901 | 4,583 | 1,018 | 933 | 931 | 13.68 |
| Coefficient of Variation | 0.431 | 0.940 | 0.220 | 0.176 | 0.166 | 3.94 | 0.410 | 0.912 | 0.219 | 0.181 | 0.170 | 5.81 |
| Percentile: | | | | | | | | | | | | |
| 95 | 5,992 | 5,743 | 5,777 | 6,245 | 6,323 | 1.45 | 6,283 | 6.611 | 5,898 | 6,564 | 6,649 | 1.76 |
| 90 | 5,243 | 5,275 | 5,280 | 5,866 | 5,972 | 3.40 | 5,510 | 5,715 | 5,433 | 6,099 | 6,335 | 3.73 |
| 75 | 4,723 | 4,810 | 4,890 | 5,246 | 5,532 | 4.06 | 4,847 | 5,015 | 5,068 | 5,517 | 6,731 | 8.85 |
| 25 | 3,963 | 4,146 | 4,220 | 4,708 | 5,002 | 6.05 | 4,055 | 4,323 | 4,394 | 4,866 | 5,172 | 6.32 |
| 10 | 3,512 | 3,695 | 3,888 | 4,264 | 4,607 | 7.04 | 3,607 | 3,789 | 4,004 | 4,348 | 4,847 | 7.70 |
| 5 | 3,130 | 3,402 | 2,928 | 3,669 | 4,138 | 8.21 | 3,233 | 3,457 | 3,462 | 3,711 | 4,239 | 7.12 |
| Percentile Ratios: | | | | | | | | | | | | |
| 95/5 | 1.914 | 1.688 | 1.973 | 1.702 | 1.528 | -4.73 | 1.943 | 1.912 | 1.704 | 1.769 | 1.569 | -5.00 |
| 90/10 | 1.493 | 1.428 | 1.358 | 1.376 | 1.296 | -3.43 | 1.528 | 1.508 | 1.357 | 1.403 | 1.307 | -3.69 |
| 75/25 | 1.192 | 1.160 | 1.159 | 1.114 | 1.106 | -1.84 | 1.195 | 1.160 | 1.153 | 1.134 | 1.301 | 2.39 |
| n | 86 | 186 | 177 | 187 | 192 | | 86 | 186 | 177 | 187 | 192 | |

and local education revenue per weighted student increased in real terms during the five-year period examined, levels of inequity increased.[9] Examining revenues from all funds yielded similar results.

From 2005 to 2009, average combined state and local education revenue per weighted student for all CSDs increased from $4,474 to $5,269–an annual average gain of 4.4% over the five-year period. (See Table 2.) Median combined state and local education revenue per weighted student experienced similar increases. While the standard deviation decreased throughout the period examined, the coefficient of variation also decreased from 0.431 to 0.166.[10] Analyzing horizontal measures that examine percentile ratios, the 95th to 5th ratio showed an average annual decrease of 4.7%; the 90th to 10th ratio showed an average annual decrease of 3.4%; and, the 75th to 25th ratio showed a slight average annual decrease of 1.8%. Moreover, even though statistical evidence showed slow improvements in levels of equity, high expenditure CSDs still spent as much as 1.5 times more than low expenditure counterparts. Therefore, as average combined state and local education revenue per weighted student increased in real terms during the five-year period examined, levels of equity increased slightly. Examining revenues from all funds yielded similar results.

Table 3 compares mean differences in combined state and local revenues per student–as well as district and student demographic characteristics–between ISDs and CSDs 2005-2009. Traditional ISDs received an average of $601 more in combined state and local general fund revenue per WADA over the five-year period and $1,539 more per ADA (Average Daily Attendance) than CSDs. When examining state and combined educational revenue from all funds, ISDs received an average of $939 more in combined state and local all fund revenue per WADA over the five-year period and $2,009 more per ADA than CSDs. Concomitantly, ISDs tended to service five percentage points more students receiving gifted/talented services, and nine percentage points more students receiving vocational education services than CSDs. Specifically, from 2005 to 2009, 6.7% of all students in ISDs–compared to 1.7% of all students in charter school districts–received gifted/talented services; and, 24.3% of all students in ISDs–compared to 15.4% of all students in CSDs–received vocational education services.

On the other hand, even while receiving less revenue, CSDs provided educational services to equivalent percentages of students receiving special education services, three percentage points more students receiving bilingual educational services, and over 15 percentage points more students classified as economically disadvantaged. Specifically, from 2005 to 2009, 12.0% of all students in CSDs–compared to 12.3% of all students in independent school districts–received special education services; 10.3% of all students in CSDs–compared to 7.2% of all students in independent school districts–received bilingual education services; and, 68.6% of all students in CSDs–compared to 53.0% of all students in independent school districts–received additional education services for economically disadvantaged students.

The analyses to this point have compared all ISDs to all CSDs. Accordingly, these analyses also would include high enrollment districts, e.g., Austin ISD, El Paso ISD, Houston ISD, and compare

**Table 3**

***Analysis of Mean Differences in Revenues per Student and Demographic Characterstics: All Texas Public School Districts Minus All Charter School Districts, 2005-2009***

| Year | General Fund Revenues | | | | | | All Fund Revenues | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | Average Difference | 2005 | 2006 | 2007 | 2008 | 2009 | Average Difference |
| Combined State and Local WADA | 305 | --- | 639 | 776 | 685 | 601 | 569 | --- | 951 | 1,107 | 1,127 | 939 |
| Combined State and Local ADA | 1,347 | 1,493 | 1,646 | 1,712 | 1,498 | 1,539 | 1,755 | 1,839 | 2,108 | 2,195 | 2,148 | 2,009 |
| Bilingual (%) | -3.2 | -3.3 | -3.0 | -2.5 | -3.6 | -3.1 | -3.2 | -3.3 | -3.0 | -2.5 | -3.6 | -3.1 |
| Economically Disadvantaged (%) | -15.2 | -15.7 | -16.1 | -15.4 | -15.4 | -15.6 | -15.2 | -15.7 | -16.1 | -15.4 | -15.4 | -15.6 |
| Gifted and Talented (%) | 6.0 | 5.6 | 4.9 | 4.3 | 4.3 | 5.0 | 6.0 | 5.6 | 4.9 | 4.3 | 4.3 | 5.0 |
| Special Education (%) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vocational Education (%) | 5.9 | 7.2 | 10.1 | 10.9 | 10.8 | 9.0 | 5.9 | 7.2 | 10.1 | 10.9 | 10.8 | 9.0 |
| n (Charter schools) | 185 | 186 | 178 | 187 | 192 | | 185 | 1863 | 178 | 187 | 192 | |
| n (School districts) | 1,037 | 1,033 | 1,031 | 1,031 | 1,030 | | 1,037 | 1,033 | 1,031 | 1,031 | 1,030 | |

Note: WADA = Weighted Average Daily Attendance. ADA = Average Daily Attendance.

**Table 4**

***Horizontal Equity Statistics for Charter-Size-Equivalent Texas Public School Districts: Combined State and Local Education Revenue per Weighted Student, 2005-2009***

| Year | General Revenue Fund | | | | | | All Revenues Fund | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | Average Annual Percent Change | 2005 | 2006 | 2007 | 2008 | 2009 | Average Annual Percent Change |
| Mean | 4,733 | 4,916 | 5,119 | 5,804 | 6,031 | 6.32 | 5,066 | 5,278 | 5,494 | 6,218 | 6,564 | 6.75 |
| Median | 4,638 | 4,734 | 4,921 | 5,424 | 5,704 | 5.35 | 4,911 | 5,044 | 5,286 | 5,824 | 6,177 | 5.94 |
| Standard Deviation | 881 | 1,165 | 1,066 | 1,385 | 1,353 | 12.84 | 982 | 1,341 | 1,193 | 1,507 | 1,744 | 16.89 |
| Coefficient of Variation | 0.19 | 0.24 | 0.21 | 0.24 | 0.22 | 5.95 | 0.19 | 0.25 | 0.22 | 0.24 | 0.27 | 9.44 |
| Percentile: | | | | | | | | | | | | |
| 95 | 6,272 | 6,756 | 6,965 | 8,399 | 8,433 | 7.95 | 6,933 | 7,445 | 7,504 | 9,033 | 9,348 | 8.01 |
| 90 | 5,502 | 5,759 | 5,997 | 7,093 | 7,297 | 7.49 | 5,925 | 6,330 | 6,562 | 7,799 | 8,191 | 8.59 |
| 75 | 4,910 | 5,030 | 5,293 | 6,037 | 6,288 | 6.47 | 5,327 | 5,472 | 5,726 | 6,493 | 6,877 | 6.67 |
| 25 | 4,351 | 4,484 | 4,665 | 5,112 | 5,362 | 5.39 | 4,558 | 4,696 | 4,916 | 5,446 | 5,731 | 5.93 |
| 10 | 3,991 | 4,130 | 4,370 | 4,831 | 5,063 | 6.16 | 4,193 | 4,332 | 4,632 | 5,066 | 5,378 | 6.44 |
| 5 | 3,708 | 3,870 | 4,099 | 4,633 | 4,833 | 6.91 | 3,935 | 4,064 | 4,333 | 4,808 | 5,079 | 6.62 |
| Percentile Ratios: | | | | | | | | | | | | |
| 95/5 | 1.69 | 1.75 | 1.70 | 1.81 | 1.74 | 0.87 | 1.76 | 1.83 | 1.73 | 1.88 | 1.84 | 1.24 |
| 90/10 | 1.38 | 1.39 | 1.37 | 1.47 | 1.44 | 1.18 | 1.41 | 1.46 | 1.42 | 1.54 | 1.52 | 1.99 |
| 75/25 | 1.13 | 1.12 | 1.13 | 1.18 | 1.17 | 0.98 | 1.17 | 1.17 | 1.16 | 1.19 | 1.20 | 0.67 |
| n | 680 | 715 | 708 | 707 | 707 | | 680 | 715 | 708 | 707 | 707 | |



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them to relatively low enrollment charter school districts. Understanding that certain economies of scale may influence comparative analyses, supplemental analyses of "charter equivalent" districts, i.e., ISDs that had enrollment less than or equal to the highest enrollment CSD, also were conducted to support or question the all-inclusive analytical results. The analytical results presented for the charter equivalent districts mirrored the results of the all ISD and all CSD analyses.

From 2005 to 2009, among charter size equivalent ISDs, average combined state and local education revenue per weighted student increased from $4,733 to $6,031–an annual average gain of 6.3% over the five-year period. (See Table 4.) Median combined state and local education revenue per weighted student experienced similar increases. While the standard deviation increased throughout the period examined, the coefficient of variation also increased from 0.186 to 0.224–an annual average gain of almost 6.0%. Analyzing horizontal measures that examined percentile ratios, the 95th to 5th ratio showed an average annual increase of 0.9%; the 90th to 10th ratio showed an average annual increase of 1.2%; and the 75th to 25th ratio showed a slight average annual increase of 1.0%. Even though statistical evidence showed slow degeneration in levels of equity, high expenditure ISDs still spent as much as 1.7 times more than their low expenditure counterparts. Therefore, although the average combined state and local education revenue per weighted student increased in real terms during the five-year period examined, levels of inequity increased. Examining revenues from all funds yielded similar results.

Table 5 compares mean differences in combined state and local revenues per student for charter size equivalent ISDs and CSDs, as well as district and student demographic characteristics, from 2005-2009. Traditional ISDs received an average of $760 more in combined state and local general fund revenue per WADA over the five-year period–and $2,241 more per ADA–than CSDs. When examining state and combined educational revenue from all funds, ISDs received an average of $862 more in combined state and local all fund revenue per WADA over the five-year period–and $2,625 more per ADA–than CSDs. Concomitantly, ISDs tended to service five percentage points more students receiving gifted/talented services and ten percentage points more student receiving vocational services than CSDs. Specifically, from 2005 to 2009, 6.6% of all students in ISDs–compared to 1.6% of all students in charter school districts–received gifted/talented services; and, 25.6% of all students in ISDs–compared to 15.4% of all students in charter school districts–received vocational education services.

Despite receiving less revenue, CSDs provided educational service to equivalent percentages of students receiving special education services, five percentage points more students receiving bilingual educational services, and over 15 percentage points more students classified as economically disadvantaged. Specifically, from 2005 to 2009, 12.8% of all students in CSDs–compared to 12.1% of all students in independent school districts–received special education services; 10.2% of all students in CSDs–compared to 5.4% of all students in independent school districts–received bilingual education services; and, 68.6% of all students in CSDs–compared to 53.0% of all students in independent school districts–received additional education services for economically disadvantaged students.

### An Efficacy Analysis of FSP Components

From 2005 to 2009, the strongest predictor of combined state and local general fund revenue per pupil was assessed valuation.

**Table 5**
***Analysis of Mean Differences in Revenues per Student and Demographic Characterstics: All Similarly Sized Public School Districts Minus Texas Charter School Districts, 2005-2009***

| Year | General Fund Revenues | | | | | | All Fund Revenues | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 | Average Difference | 2005 | 2006 | 2007 | 2008 | 2009 | Average Difference |
| Combined State and Local WADA | --- | --- | 650 | 853 | 776 | --- | 426 | --- | 851 | 1,067 | 1,102 | 862 |
| Combined State and Local ADA | 1,984 | 2,101 | 2,312 | 2,517 | 2,292 | 2,241 | 2,314 | 2,368 | 2,679 | 2,901 | 2,863 | 2,625 |
| Bilingual (%) | -4.80 | -4.90 | -4.60 | -4.30 | -5.50 | -4.82 | -4.80 | -4.90 | -4.60 | -4.30 | -5.50 | -4.82 |
| Economically Disadvantaged (%) | -14.80 | -15.40 | -16.20 | -15.60 | -16.00 | -15.60 | -14.80 | -15.40 | -16.20 | -15.60 | -16.00 | -15.60 |
| Gifted and Talented (%) | 6.10 | 5.50 | 4.80 | 4.10 | 4.10 | 4.92 | 6.10 | 5.50 | 4.80 | 4.10 | 4.10 | 4.92 |
| Special Education (%) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vocational Education (%) | 6.8 | 8.1 | 11.5 | 12.2 | 12.2 | 10.2 | 6.8 | 8.1 | 11.5 | 12.2 | 12.2 | 10.2 |
| n (Charter schools) | 184 | 186 | 173 | 181 | 185 | | 184 | 186 | 173 | 181 | 185 | |
| n (School districts) | 680 | 715 | 708 | 707 | 707 | | 680 | 715 | 708 | 707 | 707 | |

Note: WADA = Weighted Average Daily Attendance. ADA = Average Daily Attendance.

The full model exhibited an adjusted R-square of 58.5% with 35.3 percentage points solely accounted for by assessed value and M&O rate, i.e., over 60% of the explained variation shown in revenue was caused by changes in assessed valuation. The standardized beta coefficients ranged from 0.450 up to 0.576, and these were statistically significant for all years examined. (See Table 6.) The second strongest predictor–the sparsity adjustment controlling for low enrollment ISDs–reflected coefficients ranging from 0.230 up to 0.309, and these were statistically significant for all years examined. The third strongest predictor–transportation costs–had coefficients ranging from 0.195 up to 0.277, and these were statistically significant for all years examined.

Other significant predictors of combined state and local general fund revenue per pupil were percentage of students receiving vocational education services, the small-mid-size adjustment which also controls for low enrollment districts, and average beginning teacher salary. Here, it is important to note that average beginning teacher salary actually had an inverse relationship to revenue. There were no consistent statistically significant relationships between combined state and local general fund revenue per pupil and district M&O taxing effort nor percentages of gifted/talented, bilingual, or economically disadvantaged students. Overall, the magnitude of the influence for assessed valuation was nearly twice as strong as the second strongest predictor. Examining revenues from all funds yielded similar results.

For charter size equivalent ISDs, the strongest predictor of combined state and local general fund revenue per pupil also was assessed valuation from 2005 to 2009. (See Table 7.) The full model exhibited an adjusted R-square of 53.8% with 35.9 percentage points solely accounted for by assessed value and M&O rate, i.e., approximately 67% of the explained variation shown in revenue is caused by changes in assessed valuation. The standardized beta coefficient ranged from 0.466 up to 0.612, and these were statistically significant for all years. The second strongest predictor–the sparsity adjustment controlling for low enrollment ISDs–had coefficients ranging from 0.223 up to 0.301; and, these were statistically significant for all years examined. The third strongest predictor–transportation costs–had coefficients ranging from 0.201 up to 0.292, and these were statistically significant for all years examined. To a lesser extent, the percentage of students receiving vocational educational services was the only other statistically significant predictor of revenues. Overall, the magnitude of the influence for assessed valuation was more than twice as strong as the second strongest predictor. Examining revenues from all funds yielded similar results.

**Table 6**

***Analysis of Texas FSP Components for All Texas Public School Districts in Predicting Combined State and Local Revenues per Student, 2005-2009***

***General Fund Revenues: Standardized Regression Coefficients***

| Year | Tax Rate | Assessed Value | Bilingual Education (%) | Economically Disadvantaged (%) | Gifted and Talented (%) | Special Education (%) | Vocational Education (%) | Avg. Beginning Teacher Salary | Transportation | Small-Mid Adjustment | Sparsity Adjustment | F-Score | Adjusted $R^2$ Full MOdel | Adjusted $R^2$ Property and M&O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.096 | 0.454 | 0.065 | 0.077 | --- | 0.140 | 0.094 | -0.150 | 0.225 | 0.085 | 0.309 | 115.357 | 0.573 | 0.291 |
| 2006 | --- | 0.483 | --- | 0.083 | 0.081 | 0.103 | 0.106 | -0.116 | 0.195 | 0.077 | 0.254 | 93.413 | 0.522 | 0.318 |
| 2007 | --- | 0.450 | --- | --- | --- | 0.058 | 0.145 | -0.061 | 0.277 | 0.124 | 0.244 | 107.080 | 0.556 | 0.323 |
| 2008 | --- | 0.576 | 0.068 | --- | --- | 0.062 | 0.168 | -0.140 | 0.204 | 0.102 | 0.240 | 169.391 | 0.665 | 0.444 |
| 2009 | --- | 0.507 | --- | --- | --- | --- | 0.168 | -0.082 | 0.267 | 0.121 | 0.230 | 130.774 | 0.610 | 0.389 |
| Average | LPP | 0.494 | LPP | LPP | LPP | 0.091 | 0.136 | -0.110 | 0.234 | 0.102 | 0.255 | 123.203 | 0.585 | 0.353 |

***All Funds Revenues: Standardized Regression Coefficients***

| Year | Tax Rate | Assessed Value | Bilingual Education (%) | Economically Disadvantaged (%) | Gifted and Talented (%) | Special Education (%) | Vocational Education. (%) | Avg. Beginning Teacher Salary | Transportation | Small-Mid Adjustment | Sparsity Adjustment | F-Score | Adjusted $R^2$ Full MOdel | Adjusted $R^2$ Property and M&O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.058 | 0.472 | 0.075 | --- | 0.053 | 0.139 | 0.102 | -0.074 | 0.216 | 0.068 | 0.037 | 105.588 | 0.551 | 0.332 |
| 2006 | --- | 0.533 | --- | --- | 0.081 | 0.083 | 0.103 | -0.083 | 0.183 | --- | 0.239 | 95.433 | 0.527 | 0.379 |
| 2007 | 0.056 | 0.501 | --- | --- | --- | 0.058 | 0.131 | --- | 0.273 | 0.100 | 0.224 | 110.678 | 0.564 | 0.380 |
| 2008 | --- | 0.614 | 0.090 | --- | --- | 0.060 | 0.150 | -0.099 | 0.201 | 0.083 | 0.218 | 164.055 | 0.657 | 0.493 |
| 2009 | --- | 0.528 | --- | --- | --- | --- | 0.146 | --- | 0.265 | 0.076 | 0.179 | 103.419 | 0.552 | 0.406 |
| Average | LPP | 0.530 | LPP | LPP | LPP | 0.085 | 0.126 | LPP | 0.228 | 0.082 | 0.179 | 115.835 | 0.570 | 0.398 |

Note: M&O = Maintenance and Operations.



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**Table 7**

***Analysis of Texas FSP Components for Charter-Size-Equivalent Texas Public School Districts in Predicting Combined State and Local Revenues per Student, 2005-2009***

***General Fund Revenues: Standardized Regression Coefficients***

| Year | Tax Rate | Assessed Value | Bilingual Education (%) | Economically Disadvantaged (%) | Gifted and Talented (%) | Special Education (%) | Vocational Educ. (%) | Avg. Beginning Teacher Salary | Transportation | Small-Mid Adjust | Sparsity Adjustment | F-Score | Adjusted $R^2$ Full MOdel | Adjusted $R^2$ Property and M&O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.126 | 0.485 | --- | 0.071 | --- | 0.140 | 0.083 | --- | 0.242 | n/a | 0.301 | 65.753 | 0.526 | 0.324 |
| 2006 | --- | 0.499 | --- | 0.075 | 0.077 | 0.105 | 0.107 | -0.064 | 0.201 | n/a | 0.254 | 56.317 | 0.474 | 0.260 |
| 2007 | --- | 0.466 | --- | --- | --- | --- | 0.133 | --- | 0.292 | n/a | 0.241 | 63.248 | 0.505 | 0.333 |
| 2008 | --- | 0.612 | 0.071 | --- | --- | 0.073 | 0.166 | -0.064 | 0.217 | n/a | 0.239 | 102.654 | 0.623 | 0.475 |
| 2009 | --- | 0.532 | --- | --- | --- | --- | 0.157 | --- | 0.286 | n/a | 0.223 | 77.103 | 0.562 | 0.402 |
| Average | LPP | 0.519 | LPP | LPP | LPP | 0.091 | 0.129 | LPP | 0.248 | n/a | 0.252 | 73.015 | 0.538 | 0.359 |

***All Funds Revenues: Standardized Regression Coefficients***

| Year | Tax Rate | Assessed Value | Bilingual Education (%) | Economically Disadvantaged (%) | Gifted and Talented (%) | Special Education (%) | Vocational Educ. (%) | Avg. Beginning Teacher Salary | Transportation | Small-Mid Adjust | Sparsity Adjustment | F-Score | Adjusted $R^2$ Full MOdel | Adjusted $R^2$ Property and M&O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.088 | 0.496 | --- | --- | --- | 0.142 | 0.089 | --- | 0.221 | n/a | 0.299 | 66.024 | 0.527 | 0.352 |
| 2006 | --- | 0.550 | --- | --- | 0.079 | 0.086 | 0.104 | --- | --- | n/a | 0.146 | 62.547 | 0.518 | 0.384 |
| 2007 | 0.072 | 0.516 | --- | --- | --- | --- | 0.119 | --- | 0.279 | n/a | 0.219 | 71.820 | 0.538 | 0.389 |
| 2008 | --- | 0.645 | 0.089 | --- | --- | 0.071 | 0.146 | -0.053 | 0.205 | n/a | 0.214 | 108.838 | 0.637 | 0.515 |
| 2009 | --- | 0.538 | --- | --- | --- | --- | 0.133 | --- | 0.271 | n/a | 0.169 | 65.424 | 0.521 | 0.400 |
| Average | LPP | 0.549 | LPP | LPP | LPP | 0.085 | 0.118 | LPP | 0.244 | n/a | 0.209 | 74.931 | 0.548 | 0.408 |

Note: M&O = Maintenance and Operations.

Five findings were of particular note: (1) The strongest predictor of combined state and local general fund revenue per pupil was assessed valuation; (2) The FSP components representing percentages of students receiving bilingual services were an insignificant predictor of expenditures per student; (3) The FSP components representing percentages of students receiving gifted and talented services were an insignificant predictor of expenditures per student; (4) The influence of maintenance and operations taxing effort was a positive *and* negative predictor of expenditures per student; and (5) The influence of average teacher beginning teacher salary was a positive *and* negative predictor of expenditures per student.

**Conclusions and Recommendations**

In this study, Texas funding formula components for ISDs and CSDs were analyzed to assess and compare overall revenue generation levels, levels of equity exhibited by revenue distributions, and demographic and financial data. Univariate and multivariate statistical analyses were conducted to examine operationalized variables and equity relationships for Texas ISDs and CSDs during the 2005 to 2009 academic years. Univariate statistics–means, medians, standard deviations, ranges, and percentiles–were used to provide general descriptions of individual variables. Standard equity statistics–percentile ratios and coefficients of variation–were used to determine levels of horizontal equity. When examining combined local-state expenditures, levels of inequity remained constant or worsened slightly depending on the measure analyzed. In fact, evidence examined showed that disparities in per-student funding–and ultimately access to a variety of educational services–were driven primarily by the ability of school districts to generate revenues from local property wealth.

Additional analyses showed that traditional ISDs received an average of $601 more in combined state and local general fund revenue per WADA over the five-year period–and $1,539 more per ADA–than CSDs. When examining state and combined educational revenue from all funds, ISDs received an average of $939 more in combined state and local all fund revenue per WADA over the five-year period–and $2,009 more per ADA–than CSDs. Concomitantly, traditional ISDs tended to service five percentage points more students receiving gifted/talented services and nine percentage points more student receiving vocational education services than CSDs. On the other hand, even while receiving less revenue, CSDs provided educational services to equivalent percentages of students receiving special education services, three percentage points

more students receiving bilingual educational services, and over 15 percentage points more students classified as economically disadvantaged.

Consequently, if education finance equity and equality of educational opportunity between traditional ISDs and CSDs were to remain a policy goal, the Texas school funding mechanism needs to be reconceptualized and restructured around two primary policy areas to alleviate inequities currently generated by:

1) Adjustments for fiscal capacity. The major differences between the ISD and CSD funding structures are: CSDs do not receive funds from local tax revenue sources and they do not receive facilities funding. These two items currently are components of the FSP mechanism. Yet, CSDs do not qualify for these revenue generation components.
2) Adjustments for community complexity. For CSDs, the FSP mechanisms generate revenues based on an average adjusted allotment–a value that is ubiquitous to all CSDs. Specifically, this average adjusted allotment is applied to all individual CSDs regardless of school size, level of sparsity among students living in the district, and cost of education differentials that vary by charter school district. The direct result of this averaging is a failure to alleviate negative–or reward positive–community characteristics.

As a result, school districts with differential school climates, i.e., those CSDs that are not represented well by the average are being underfunded (or overfunded) by the state.

In its efforts to improve levels of equity in Texas, the state's distribution formula is failing to counterbalance the effect of local spending efforts. Moreover, given that the magnitude and influence of local expenditures is the primary predictor for expenditure levels across multiple spending categories, it can be inferred that general levels of equity are dictated specifically by levels of local property values. Of particular note is the effect the influence of local expenditures is having on one specific demographic subgroup–students receiving bilingual services. Therefore, if education finance equity and equality of educational opportunity are to remain a policy goal for the state of Texas, the Foundation School Program – and its structural components–needs to be reconceptualized and restructured to alleviate fiscal inequities. The ultimate goal of educational finance and economic research is to improve the quantity and quality of educational opportunities provided to all children. As such, in both a methodological and practical sense, additional comparative examinations of ISD and CSD funding will be necessary to continuously improve academic opportunities for the children of Texas.

## Endnotes

[1] This article was developed by the authors from a policy monograph for the Texas Charter Schools Association, *Comparative Analyses of Revenues Generated from the Texas Foundation School Program for Independent School Districts and Charter School Districts* (February 2011).

[2] For a complete description of the Texas Foundation School Program, go to http://www.tea.state.tx.us/index2.aspx?id=7022.

[3] For further information, go to http://www.tea.state.tx.us/index2.aspx?id=410.

[4] For information on Texas charter school funding, go to http://www.tea.state.tx.us/index2.aspx?id=7721&menu_id=645.

[5] For a more complete description of general funding formulas, see James W. Guthrie, Matthew G. Springer, R. Anthony Rolle, and Eric A. Houck, *Modern Education Finance and Policy* (Boston, MA: Allyn & Bacon, 2007); and David C. Thompson, Faith E. Crampton, and R. Craig Wood, *Money and Schools*, 5th ed. (Larchmont, NY, Eye on Education, 2012).

[6] ISDs and CSDs also receive "Additional State Aid for Tax Reduction" (ASATR) which provides additional funding for revenue decreases due to rate compression changes, teacher salary increases, high school allotment and increases to the minimum per weighted. ASATR revenue provides additional levels of funding to schools to provide relief for tax reduction in Texas House Bill 3646 (H. B. 3646, 2009 Leg., 81st Sess. Tx. 2009). The amount of ASATR funding received is adjusted based upon the local revenue or tax collections for the schools and the per student guarantees set by the state. Again, the adjustments for CSDs are based on state averages.

[7] The coefficient of variation (CoV) is calculated by dividing the standard deviation by the mean; and, the values of the ratio range from 0 to $+\infty$. As the CoV increases, inequities in revenue distributions increase.

[8] For the purposes of this article, "efficacy" is defined as the ability or capacity to produce desired outcomes. Operationally, each individual element measuring a specified district, school, or individual policy-determined characteristic, i.e., tax rate, should have a positive, statistically significant influence on educational revenue generation. In the analysis presented in this article, only components that meet this criteria are detailed. Where information is not detailed, the individual component failed to meet efficacy criteria.

[9] It is important to note that the majority of education finance and economic literature report equity analyses utilizing average daily attendance (ADA), not weighted average daily attendance (WADA). The usage of WADA is unique to Texas. As such, horizontal equity statistics also were calculated using ADA and showed similar results. Contact the authors for details.

[10] Previously, it was mentioned that state averages were used in the calculation of some specific CSD revenues. This reduction in the magnitude of the standard deviation most likely was due to said policy changes.



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## Appendix A

### *Texas Foundation School Program Funding Formula Adjustments for District and Student Characteristics*

| *Classification* | *Description* | *Weight* |
|---|---|---|
| Bilingual/ESL | Based on the number of students who participate in programs, additional funds are used for salaries and instructional resources. | 0.1 |
| Career and Technology Education | Based on the amount of time students spend in eligible career technology courses, additional funds pay for salaries and instructional resources. | 1.35 |
| Compensatory Education | Based on the number of students who are eligible for free or reduced-price lunch, additional funding assists students performing below grade level. | 0.2 |
| | An additional component is utilized for program serving pregnant students. | 2.41 |
| Cost of Education Index | Accounts for differences in resource costs that are beyond the control of the district. The five components are: (1) Average beginning salary of teachers in contiguous school districts; (2) percent of economically disadvantaged students; (3) district size; (4) location in a rural county with fewer than 40,000 people; and (5) district classified as independent town or rural. | 1.02 to 1.20 |
| Gifted/Talented | Based on individual district requirements, additional funding pays for salaries and instructional resources. State funding is capped at 5% of each district's ADA. | 0.12 |
| Small and Mid-Sized Districts | Designed to supplement higher fixed costs of operating districts in less populated areas. Small is less than 1,600 ADA. Mid-sized is between 1,601 to 5,000 ADA. | 1.0 to 1.61 |
| Sparsity Adjustment | Based on the number of students in district, range of grade levels available, and distance to a district with a high school if necessary. | Enrollment increased by 60, 75, 0r 130 |
| Special Education | There are 12 special education instructional arrangements with varying weights based on duration of the daily service and location of the instruction. | 1.7 to 5.0 |

Note: Go to http://ritter.tea.state.tx.us/school.finance/index.html for a complete description of the Texas FSP mechanism.

# Appendix B

## *Texas Foundation School Program Funding Formula Outline of Tier I, Tier II, and Facilities Funding Characteristics*

### TIER I: BASIC ALLOTMENT FUNDING

**Local fund assignment:** District revenue from property tax of $.0.86 per $100 of assessed value

**Basic allotment** = $4,765 (for 2009-10) per ADA

**Tier I entitlement** = Basic allotment + district level adjustments + student level adjustments + transportation allotment

**State aid to district** = Tier I Entitlement - Local Fund Assignment

### TIER II: GUARANTEED YIELD FUNDING

**Level 1: Basic equalization**

**FY 2010 yield:** $59.02 per WADA; or the amount of district tax revenue per WADA percent of tax effort generated for this level of guaranteed yield funding for the last school year

**Equalization basis:** Property tax wealth per WADA in 88th percentile of all school districts

**Subject to recapture:** Yes

**Requires voter approval:** No

**Level 2: Above enrichment level**

**FY 2010 yield:** $31.95 per penny of M&O tax above enrichment level (maximum M&O tax = $1.17)

**Equalization basis:** Property tax wealth per WADA in 88th percentile of all school districts

**Subject to recapture:** Yes

**Requires voter approval:** Yes

### FACILITIES FUNDING

**FY 2010 Yield** = Property Tax Rate × Assessed Property Value



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