A REPORT PREPARED FOR THE TEXAS CHARTER SCHOOL ASSOCIATION:

COMPARATIVE ANALYSES OF REVENUES GENERATED FROM THE TEXAS FOUNDATION SCHOOL PROGRAM FOR INDEPENDENT SCHOOL DISTRICTS AND CHARTER SCHOOL DISTRICTS

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BY:

R. C. Wood & Associates
8711 SW 46th Lane
Gainesville, Florida 32608-4137
Phone: 352-538-9600 **Fax**: 352-335-8158
Email: rcwoodassoc@cox.net
Website: http://www.rcwoodassoc.com/

INTRODUCTION

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, CSDs are believed to operate with fewer regulatory restrictions on administrative, instructional, and pedagogical methods. To be clear, just like traditional independent school districts (ISDs) across the state, charter school districts are subject to all TEA-required administrative, instructional, and pedagogical standards. Despite these commonalities, to date, no independent fiscal analysis of ISD-CSD revenue distributions have been conducted. As such, The Texas Charter Schools Association (TCSA) contracted with R.C. Wood and Associates (http://www.rcwoodassoc.com/) to conduct comparative analyses of revenues generated from the Texas Foundation School Program (FSP) for independent school districts and charter school districts. Accordingly, Dr. Anthony Rolle (Principal Researcher) and Dr. Craig Wood (Co-Principal Researcher) developed this policy monograph for TCSA detailing the following:

A *An explanation of the Texas public school district funding mechanism*

B. *A detailed description of methodological and data analysis techniques*

C. *An equity analysis of traditional and charter school district revenue distributions*

D. *A discussion of analytical conclusions*

As part of this analysis, Texas funding formula components for ISDs and CSDs were analyzed to assess and compare overall revenue generation levels, to assess and compare levels of equity exhibited by revenue distributions, and to assess and compare demographic and financial data.

A. AN EXPLANATION OF THE TEXAS PUBLIC SCHOOL DISTRICT FUNDING MECHANISM [1]

All public schools in Texas, both traditional independent school districts and charter school districts, receive state revenue funds based on the average daily attendance (ADA) of students. Specifically, the Texas school funding mechanism – called the Texas Foundation School

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

Program (FSP) (http://www.tea.state.tx.us/index2.aspx?id=410) – is the source of state funding for all Texas school districts. And, 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" (http://www.tea.state.tx.us/index2.aspx?id=7721&menu_id=645). The major differences between ISDs and CSDs are that CSDs do not receive funds from local tax revenue sources; and, CSDs do not have access to state facilities allotments.

Comprised of three funding sections, the funding formula originally was designed to generate substantially equal revenues for school district daily maintenance and operation – not capital or debt servicing – expenses. Tier I 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 bilingual or economically disadvantaged students within a district) (see *Chart 1*, p. 3). In addition, each district also 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 M&O tax rates set by local districts. For example, every cent of tax the district levied is guaranteed to receive a specified dollar amount per weighted student (see *Chart 2*, p. 4). Under a third section for facilities, revenues for capital and debt services (i.e., Interest and Sinking, or I & S, rates) are unadjusted formulaically. But, three state programs – Existing Debt Allotment (EDA), Instructional Facilities Allotment (IFA), and New Instructional Facilities Allotment (NIFA) – assist districts with these types of costs. As such, districts bear the primary responsibility for facilities costs, which typically are funded through voter-approved property tax assessments.

Chart 1. *
Texas Foundation School Program Funding Formula
Adjustments for District and Student Characteristics

Classification	Description	Weight
Bilingual/ESL	Based on the number of students that 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 that are eligible for free or reduced-price lunch, additional funding assists students performing below grade level. An additional component is utilized for program serving pregnant students.	0.2 2.41
Cost of Education Index	Accounts for differences in resource costs that are beyond the control of the district. The five components are the: (a) average beginning salary of teachers in contiguous school districts, (b) percent of economically disadvantaged students, (c) district size, (d) location in a rural county with less than 40,000 people, and (e) 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, or 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

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

Chart 2.
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 per cent 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

While the preponderance of education revenues generated by the FSP are represented by this three-part funding system, state revenues are affected by one more major feature of the funding mechanism: Fiscal Recapture (known derogatorily as "Robin Hood"). The recapture provision of Texas's school finance program requires districts with property tax wealth per WADA above the 88th percentile (known as Chapter 41 Districts) to share their 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 non-resident students by partnering with a poorer district.
5. Consolidate the tax base with one or more other districts.

Most Chapter 41 districts (less than 15% of all districts) chose either the third or fourth option. Revenue received by the state under Option 3 was counted as state revenue when state aid was distributed to districts. FSP tiers, adjustments, and recapture provision enacted in 1993 to enhance revenue equity across the state remain largely in place.

For charter school districts, 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, 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 charter school district. Two more items are important to note: a) Charter school districts do not receive I & S fund revenues; and contrary to popular belief, b) Charter school districts may choose to receive transportation funding, though not all choose to do so.[2]

[2] 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 House Bill 3646 (2007). 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.

B. A DETAILED DESCRIPTION OF METHODOLOGICAL AND DATA ANALYSIS TECHNIQUES [3]

Data analyzed were obtained, defined, calculated, and reported from one primary source: The Public Education Information Management System (PEIMS) managed by the Texas Education Agency (TEA). The data elements are: a) Combined state-local revenues from general fund sources (i.e., excludes all I & S revenues); b) Combined state-local revenues from all fund sources (i.e., includes all I & S revenues); and, c) District and student characteristics defined by specific components within the FSP (e.g., maintenance and operations taxing effort). Statistical analyses will focus 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 during the 2005 to 2009 academic years. Univariate statistics – means, medians, standard deviations, ranges, and percentiles – are used to provide general descriptions of individual variables. Standard equity statistics – percentile ratios and coefficients of variation – are used to determine levels of horizontal equity.[4]

C. AN EQUITY ANALYSIS OF TRADITIONAL AND CHARTER SCHOOL DISTRICT REVENUE DISTRIBUTIONS

From 2005-2009, average combined state and local education revenue per weighted student for all ISDs increased from $4779 to $5954 – an annual average gain of 5.7% over the five-year period (see *Table 1*, p. 7). 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

[3] Standardized regression coefficients are examined to discern levels of vertical equity present in Texas school districts. F-statistics are reported in lieu of R^2 or adjusted-R^2 because this research is concerned with the magnitude and direction of relationships – not determining the accuracy of any particular predictive model.

[4] 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.

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

		General Fund Revenues						All Funds Revenues					
Year		**2005**	**2006**	**2007**	**2008**	**2009**	**Avg Annual**	**2005**	**2006**	**2007**	**2008**	**2009**	**Avg Annual**
n		1037	1033	1031	1031	1030	**Pct. Change**	1037	1033	1031	1031	1030	**Pct. Change**
Mean		4779	4934	5111	5731	5954	5.71	5209	5390	5595	6262	6602	6.16
Median		4704	4787	4954	5407	5653	4.74	5115	5206	5425	5960	6270	5.26
Std Dev		756	1003	928	1199	1185	13.31	897	1187	1078	1335	1542	15.62
CV		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*	5857	6336	6446	7781	7943	8.18	6809	7106	7280	8768	9024	7.54
	90	5304	5622	5811	6761	7060	7.53	6150	6431	6611	7597	8039	7.03
	75	4960	5059	5267	5912	6189	5.76	5505	5662	5869	6598	6919	5.95
	25	4454	4573	4747	5147	5379	4.85	4719	4844	5018	5546	5827	5.46
	10	4145	4239	4479	4927	4927	4.48	4364	4473	4736	5204	5510	6.03
	5	3884	3995	4228	4748	4748	5.25	4044	4205	4457	4954	5233	6.69
Percentile	*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
Ratios	*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

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

		General Fund Revenues						All Funds Revenues					
Year		**2005**	**2006**	**2007**	**2008**	**2009**	**Avg Annual**	**2005**	**2006**	**2007**	**2008**	**2009**	**Avg Annual**
n		86	186	177	187	192	**Pct. Change**	86	186	177	187	192	**Pct. Change**
Mean		4474	4776	4471	4955	5269	4.38	4640	5023	4643	5155	5475	4.48
Median		4307	4455	4455	4976	5285	5.34	4446	4624	4730	5198	5437	5.20
Std Dev		1929	4491	985	872	875	10.90	1901	4583	1018	933	931	13.68
CV		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*	5992	5743	5777	6245	6323	1.45	6283	6611	5898	6564	6649	1.76
	90	5243	5275	5280	5866	5972	3.40	5510	5715	5433	6099	6335	3.73
	75	4723	4810	4890	5246	5532	4.06	4847	5015	5068	5517	6731	8.85
	25	3963	4146	4220	4708	5002	6.05	4055	4323	4394	4866	5172	6.32
	10	3512	3695	3888	4264	4607	7.04	3607	3789	4004	4348	4847	7.70
	5	3130	3402	2928	3669	4138	8.21	3233	3457	3462	3711	4239	7.12
Percentile	*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
Ratios	*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

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%. And, even though statistical evidence shows slow degenerations 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 and local education revenue per weighted student increased in real terms during the five-year period examined, levels of inequity increased.[5] Examining revenues from all funds yielded similar results.

From 2005-2009, average combined state and local education revenue per weighted student for all CSDs increased from $4474 to $5269 – an annual average gain of 4.4% over the five-year period (see *Table 2*, p. 7). 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.[6] 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 shows slow improvements in levels of equity, high expenditure CSDs still spent as much as 1.5 times more than their 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 (see p. 9) compares mean differences in combined state and local revenues per student – as well as district and student demographic characteristics – between ISDs and CSDs

[5] 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 authors for details.

[6] 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 is due to said policy changes.

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

	General Revenue Funds						All Revenue Funds					
Year	**2005**	**2006**	**2007**	**2008**	**2009**	**Average Difference**	**2005**	**2006**	**2007**	**2008**	**2009**	**Average Difference**
Charter N	185	186	178	187	192		185	186	178	187	192	
District N	1037	1033	1031	1031	1030		1037	1033	1031	1031	1030	
Combined State and Local (WADA)	305	---	639	776	685	601	569	---	951	1107	1127	939
Combined State and Local (ADA)	1347	1493	1646	1712	1498	1539	1755	1839	2108	2195	2148	2009
Pct. 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
Pct. Economically Disadvanaged	-15.2	-15.7	-16.1	-15.4	-15.4	-15.6	-15.2	-15.7	-16.1	-15.4	-15.4	-15.6
Pct. 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
Pct. Special Education	---	---	---	---	---	---	---	---	---	---	---	---
Pct. Vocational	5.9	7.2	10.1	10.9	10.8	9.0	5.9	7.2	10.1	10.9	10.8	9.0

from 2005-2009. Traditional ISDs receive an average of $601 more in combined state and local general fund revenue per WADA over the five-year period – and $1539 more per ADA – than CSDs. When examining state and combined educational revenue from all funds, ISDs receive an average of $939 more in combined state and local all fund revenue per WADA over the five-year period – and $2009 more per ADA – than CSDs. Concomitantly, ISDs tend to service five (5) percentage points more students receiving gifted/talented, and nine (9) percentage points more student receiving vocational education services, than CSDs. Specifically, from 2005-2009, 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 charter school districts – received vocational education services.

On the other hand, even while receiving less revenue, CSDs provide educational services to equivalent percentages of students receiving special education services, three (3) percentage points more students receiving bilingual educational services, and over fifteen (15) percentage points more students classified as economically disadvantaged. Specifically, from 2005-2009, 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 compared all ISDs to all CSDs. Accordingly, these analyses also would include high enrollment districts (e.g., Austin ISD, El Paso ISD, or Houston ISD) and compare them to relatively low enrollment charter school districts. Understanding that certain economies of scale may influence comparative analyses, supplemental analyses of "charter equivalent" districts – that is, comparing only ISDs that have 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 mirror the results of the all ISD and all CSD analyses.

From 2005-2009, among "charter size equivalent" ISDs, average combined state and local education revenue per weighted student increased from $4733 to $6031 – an annual average gain of 6.3% over the five-year period (see *Table 4*, p. 11). 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 examine percentile ratios, the 95^{th} to 5^{th} ratio showed an average annual increase of 0.9%; the 90^{th} to 10^{th} ratio showed an average annual increase of 1.2%; and, the 75^{th} to 25^{th} ratio showed a slight average annual increase of 1.0%. And, even though statistical evidence shows

Table 4.
Horizontal Equity Statistics for "Charter Size Equivalent" Texas Public School Districts
Combined State and Local Education Revenue per Weighted Student
2005-2009

		General Revenue Fund						All Revenues Fund					
Year		**2005**	**2006**	**2007**	**2008**	**2009**	**Avg Annual**	**2005**	**2006**	**2007**	**2008**	**2009**	**Avg Annual**
n		680	715	708	707	707	**Pct. Change**	680	715	708	707	707	**Pct. Change**
Mean		4733	4916	5119	5804	6031	6.32	5066	5278	5494	6218	6564	6.75
Median		4638	4734	4921	5424	5704	5.35	4911	5044	5286	5824	6177	5.94
Std Dev		881	1165	1066	1385	1353	12.84	982	1341	1193	1507	1744	16.89
CV		0.186	0.237	0.208	0.239	0.224	5.95	0.194	0.254	0.217	0.242	0.266	9.44
Percentile	*95*	6272	6756	6965	8399	8433	7.95	6933	7445	7504	9033	9348	8.01
	90	5502	5759	5997	7093	7297	7.49	5925	6330	6562	7799	8191	8.59
	75	4910	5030	5293	6037	6288	6.47	5327	5472	5726	6493	6877	6.67
	25	4351	4484	4665	5112	5362	5.39	4558	4696	4916	5446	5731	5.93
	10	3991	4130	4370	4831	5063	6.16	4193	4332	4632	5066	5378	6.44
	5	3708	3870	4099	4633	4833	6.91	3935	4064	4333	4808	5079	6.62
Ratios	*95/5*	1.691	1.746	1.699	1.813	1.745	0.87	1.762	1.832	1.732	1.879	1.841	1.24
	90/10	1.379	1.394	1.372	1.468	1.441	1.18	1.413	1.461	1.417	1.539	1.523	1.99
	75/25	1.128	1.122	1.135	1.181	1.173	0.98	1.169	1.165	1.165	1.192	1.200	0.67

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

	General Fund Revenues						All Funds Revenues					
Year	**2005**	**2006**	**2007**	**2008**	**2009**	**Average Difference**	**2005**	**2006**	**2007**	**2008**	**2009**	**Average Difference**
Charter N	184	186	173	181	185		184	186	173	181	185	
District N	680	715	708	707	707		680	715	708	707	707	
Combined State and Local (WADA)	---	---	650	853	776	---	426	---	851	1067	1102	862
Combined State and Local (ADA)	1984	2101	2312	2517	2292	2241	2314	2368	2679	2901	2863	2625
Pct. Bilingual	-4.8	-4.9	-4.6	-4.3	-5.5	-4.8	-4.8	-4.9	-4.6	-4.3	-5.5	-4.8
Pct. Economically Disadvanaged	-14.8	-15.4	-16.2	-15.6	-16.0	-15.6	-14.8	-15.4	-16.2	-15.6	-16.0	-15.6
Pct. Gifted and Talented	6.1	5.5	4.8	4.1	4.1	4.9	6.1	5.5	4.8	4.1	4.1	4.9
Pct. Special Education	---	---	---	---	---	---	---	---	---	---	---	---
Pct. Vocational	6.8	8.1	11.5	12.2	12.2	10.2	6.8	8.1	11.5	12.2	12.2	10.2

slow degenerations in levels of equity, high expenditure ISDs still spent as much as 1.7 times more than their low expenditure counterparts. Therefore, even the though 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 (p. 11) 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 receive an average of $760 more in combined state and local general fund revenue per WADA over the five-year period – and $2241 more per ADA – than CSDs. When examining state and combined educational revenue from all funds, ISDs receive an average of $862 more in combined state and local all fund revenue per WADA over the five-year period – and $2625 more per ADA – than CSDs. Concomitantly, ISDs tend to service five (5) percentage points more students receiving gifted/talented, and ten (10) percentage points more student receiving vocational services, than CSDs. Specifically, from 2005-2009, 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.

On the other hand, even while receiving less revenue, CSDs provide educational service to equivalent percentages of students receiving special education services, five (5) percentage points more students receiving bilingual educational services, and over fifteen (15) percentage points more students classified as economically disadvantaged. Specifically, from 2005-2009, 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.

D. A DISCUSSION OF ANALYTICAL CONCLUSIONS

In this monograph, Texas funding formula components for ISDs and CSDs were analyzed to assess and compare overall revenue generation levels, to assess and compare levels of equity exhibited by revenue distributions, and to assess and compare 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 – are used to provide general descriptions of individual variables. Standard equity statistics – percentile ratios and coefficients of variation – are used to determine levels of horizontal equity. Unfortunately, when examining combined local-state expenditures, levels of inequity remained constant or worsened slightly depending on the measure analyzed. In fact, evidence examined shows that disparities in per-student funding – and ultimately access to a variety of educational services – are driven primarily by the ability of school districts to generate revenues from local property wealth.

Additional analyses showed that traditional ISDs receive an average of $601 more in combined state and local general fund revenue per WADA over the five-year period – and $1539 more per ADA – than CSDs. When examining state and combined educational revenue from all funds, ISDs receive an average of $939 more in combined state and local all fund revenue per WADA over the five-year period – and $2009 more per ADA – than CSDs. Concomitantly, traditional ISDs tend to service five (5) percentage points more students receiving gifted/talented, and nine (9) percentage points more student receiving vocational education services, than CSDs. On the other hand, even while receiving less revenue, CSDs provide educational services to equivalent percentages of students receiving special education services, three (3) percentage points more students receiving bilingual educational services, and over fifteen (15) percentage points more students classified as economically disadvantaged.

Consequently, if education finance equity and equality of educational opportunity between traditional ISDs and CSDs is 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 is that: a) Charter school districts do not receive funds from local tax revenue sources; and, b) Charter school districts do not receive facilities funding. These two items currently are components of the Texas FSP mechanism. Yet, CSDs are denied access to these revenue generation components.
2) *Adjustments for community complexity*: For charter school districts, the Texas FSP mechanisms generates 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 under-funded (or over-funded) by the state.

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.

SUPPLEMENTAL APPENDIX:

Multivariate statistical analyses were conducted to examine operationalized variables and efficacy relationships for Texas school districts during the 2005 to 2009 academic years. Standardized beta coefficients from ordinary least squares (OLS) regression analyses are used to make inferences about the effects of various district characteristics on spending; and, their influence on levels of combined state and local expenditures per student. Five findings are of particular note: (a) The strongest predictor of combined state and local general fund revenue per pupil is assessed valuation; (b) The FSP components representing percentages of students receiving bilingual services is an insignificant predictor of expenditures per student; (c) The FSP components representing percentages of students receiving gifted and talented services is an insignificant predictor of expenditures per student; (d) The influence of maintenance and operations taxing effort is a positive *and* negative predictor of expenditures per student; and, (e) The influence of average teacher beginning teacher salary is a positive *and* negative predictor of expenditures per student.

An Efficacy Analysis of FSP Components

From 2005-2009, the strongest predictor of combined state and local general fund revenue per pupil is assessed valuation. 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 is caused by changes in assessed valuation). The standardized beta coefficient ranged from 0.450 up to 0.576; and, were statistically significant for all years examined (see *Appendix Chart 1*, next page). The second strongest predictor – the sparsity adjustment controlling for low enrollment ISDs – had coefficients ranging from 0.230 up to 0.309; and, were statistically significant for all years examined. And, the third strongest predictor – transportation costs – had coefficients ranging from 0.195 up to 0.277; and were statistically significant for all years examined.

Appendix 1.
Analysis of Texas FSP Components for All Texas Public School Districts in Predicting Combined State and Local Revenues per Student
2005-09

General Fund Revenues
Standardized Regression Coefficients

Year	Tax Rate	Assessed Value	Bilingual Education Pct	Econ Disad Pct	Gifted-Talented Pct	Special Education Pct	Vocational Education Pct	Avg Beg. Teacher Salary	Transpo	Small-Mid Adjust	Sparsity Adjust	F-Score	Adj R^2 Full Model	Adj R2 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 Pct	Econ Disad Pct	Gifted-Talented Pct	Special Education Pct	Vocational Education Pct	Avg Beg. Teacher Salary	Transpo	Small-Mid Adjust	Sparsity Adjust	F-Score	Adj R^2 Full Model	Adj R2 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

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 has 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 is nearly twice as strong as the second strongest predictor. Examining revenues from all funds yielded similar results.

Appendix 2.
Analysis of Texas FSP Components for "Charter Size Equivalent" Texas Public School Districts in Predicting Combined State and Local Revenues per Student
2005-09

General Fund Revenues
Standardized Regression Coefficients

Year	Tax Rate	Assessed Value	Bilingual Education Pct	Econ Disad Pct	Gifted-Talented Pct	Special Education Pct	Vocational Education Pct	Avg Beg. Teacher Salary	Transpo	Small-Mid Adjust	Sparsity Adjust	F-Score	Adj R^2 Full Model	Adj R2 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	LPP	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 Pct	Econ Disad Pct	Gifted-Talented Pct	Special Education Pct	Vocational Education Pct	Avg Beg. Teacher Salary	Transpo	Small-Mid Adjust	Sparsity Adjust	F-Score	Adj R^2 Full Model	Adj R2 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	LPP	0.118	LPP	0.244	n/a	0.209	74.931	0.548	0.408

For "charter size equivalent" ISDs, the strongest predictor of combined state and local general fund revenue per pupil also is assessed valuation from 2005-2009 examined (see *Appendix Chart 2*, p. 17). 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, 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, were statistically significant for all years examined. And, the third strongest predictor – transportation costs – had coefficients ranging from 0.201 up to 0.292; and, were statistically significant for all years examined. To a lesser extent, the percentage of students receiving vocational educational services also was the only other statistically significant predictor of revenues. Overall, the magnitude of the influence for assessed valuation is more than twice as strong as the second strongest predictor. Examining revenues from all funds yielded similar results.

Summary: An Efficacy Analysis of FSP Components

As such, in its efforts to improve levels of equity in Texas, the state's distribution formula is failing to "counter-balance" 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 also is having on one specific demographic subgroup: students receiving bilingual services. Therefore, if education finance equity and equality of educational opportunity is 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. In particular, attention needs to focus on: 1) *Cost of Education Index* – The structure of the regression used to calculate the index needs to be evaluated to determine its efficacy. Due

to model specification errors, collinearity of independent predictors, or data errors, estimators – and the predictions based on them – may be producing spurious equalization results; and, 2) *Community Complexity* – The current fiscal capacity index does not (nor FSP) alleviate negative – or reward positive – community characteristics; as a result, school districts with differential school climates are being under-funded (or over-funded) by the state.

ABOUT THE CONSULTANTS

Dr. R. Anthony Rolle, Professor of K-12 Education Finance and Economics at the University of South Florida, conducts research that explores and improves relative measures of economic efficiency for public schools. Concomitantly, his research explores and applies measures of vertical equity to analyses of state education finance mechanisms. Utilizing these techniques recognizes that demographic differences among communities affect organizational processes; and, does not assume that all public schools have the same expenditure priorities. Dr. Rolle's work is published in books, journals, and monographs such as *To What Ends and By What Means? The Social Justice Implications of Contemporary School Finance Theory and Policy* (2007), *Modern Education Finance and Policy* (2007), *Measuring School Performance and Efficiency* (2005), *Journal of Education Finance*, *Peabody Journal of Education*, *School Business Affairs*, *School Administrator,* and *Developments in School Finance*. In addition, Dr. Rolle has conducted K-12 education finance and policy research for such organizations as the University of Washington's Institute for Public Policy & Management, the Washington State Legislature and Democratic House Majority Whip, the Indiana Education Policy Center, the National Education Association, the Texas House of Representatives' Office of the Speaker, the Office of U.S. Representative Jim Cooper (5th District - Nashville, TN) as well as agencies and commissions in Arkansas, Colorado, Missouri, North Carolina, South Carolina, Tennessee, and Texas. Formerly a member of the Board of Directors for the American Educational Finance Association (AEFA), and the 2002 AEFA Jean Flanigan Dissertation Award winner, Dr. Rolle received a Bachelor of Science in Political Science from Santa Clara University; a Masters Degree in Public Administration from the University of Washington's Graduate School of Public Affairs; and, a Ph.D. in Educational Policy Studies from the School of Education at Indiana University.

Dr. R. Craig Wood, past President of the American Education Finance Association, is one of the leading scholars in the field of public education finance. He currently is a Research Foundation Professor at the University of Florida. Dr. Wood's theoretical and applied research regarding the constitutional challenges of state methods of distributing school finance aid has appeared in a number of scholarly journals, chapters, and texts. In fact, he is one of the most prolific authors in America regarding constitutional challenges to state aid plans. Dr. Wood's publication record includes more than 250 book chapters, monographs, and scholarly journal articles including the American Education Finance Association's *Annual Yearbooks, Journal of Education Finance,* Education Law Association's *Handbook of School Law* series. His books include *Education Finance Law, Fiscal Leadership for Schools, Principles of School Business Management*, and *Money and Schools.* His latest text, *Financing Public and Private Education* is forthcoming. Additionally, Dr. Wood is the executive editor of the *Florida Journal of Educational Administration & Policy*; and, he serves on the editorial boards of West's *Education Law Reporter, Journal of Education Finance,* and *Educational Considerations* and the *University of Florida Journal of Law and Public Policy*. He has conducted education finance litigation workshops for the National Conference on State Legislatures and the National Association of Attorneys General. Dr. Wood's education finance litigation activities include serving as lead expert for states of Florida, Missouri, Montana, South Dakota and recently designed the education finance distribution formula for the state of Missouri, which has withstood constitutional challenges.