Estimating the Costs of Meeting Student Performance Outcomes Adopted by the Kansas State Board of Education

Report Prepared for the
The Kansas Legislative Division of Post Audit

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1. Introduction

Over the past decade, there has been a growing interest among state governments in estimating the cost of providing an education that both meets state standards and complies with the federal No Child Left Behind Act (NCLB). It is well established in education finance and education policy research that some districts face more challenges in educating their students than other districts, because of several important factors that are outside district control. In estimating the costs for districts to provide an equal opportunity for their students to meet academic standards it is important to consider three external factors affecting costs: 1) the school district share of disadvantaged students; 2) school district size; and 3) geographic variation in resource prices.

The Kansas Legislative Division of Post Audit (LPA) has been required under 2005 Special Session SB 3 to conduct two professional cost study analyses to determine the following:

- *What should it cost school districts to meet the performance outcome standards set by the Board of Education?*
- *What should it cost school districts to deliver the curriculum, related services, and programs mandated by State statute?*

The objective of this project is to use a cost function approach to assist LPA in answering the first question. The cost function approach uses a statistical methodology and actual data to estimate the relationship between spending, student performance, student needs, resource prices and enrollment size. The cost function results can be used to directly estimate the impact of all three factors on the costs of meeting performance outcomes. The resulting estimates can also be used to construct several other measures, which can be used in education aid formulas: 1) an education cost index, which measures

how factors outside district control affect the variation in required spending across districts within the state, and 2) pupil weights, which indicate how much more a student with certain characteristics, or a student residing in a district of a certain size, cost to educate compared to students without these characteristics.

1.1 Project Scope

The statement of work as defined by LPA, "shall include a statistical cost function analysis of relevant demographic, spending, and outcome data for Kansas school districts to derive an estimate of what it "should cost" to achieve specified educational outcome measures adopted by the State Board of Education. This estimate derived by the statistical cost function analysis shall include a base funding amount for each pupil in a district, and a set of "weights" to account for cost differences due to district size, location, special needs of students, and other relevant factors."(LPA, 2005) In other words, this project involves estimation of a statistical cost function using performance measures adopted by the Kansas State Board of Education, and the results will be used to develop cost indices, pupil need weights, and measures of additional costs associated with district size, location, and other factors, such as teacher costs.

1.2 Output

This report is the principal output of this project, and LPA has specified that it shall include: "1) an explanation of the methodology behind the statistical analysis, 2) an articulation of the important limitations of the analysis, and 3) a presentation of the results." The results will include the results of the cost function estimates (multiple regression coefficients), an overall cost index for each district, cost indices for each major component (student need, size, and teacher costs), pupil need weights, and weights

associated with district size, and the minimum spending associated with particular performance standards. As specified in the contract, we have been in frequent contact with the staff of LPA, and they have reviewed preliminary drafts of the report. We have incorporated most of their recommendations into the final report. We would like to personally acknowledge the invaluable assistance of LPA staff in constructing the large database required for this project. We take full responsibility for recommendations made in this report, and for any errors or omissions that may exist.

1.3 Organization of the Report

The final report is organized into four sections including the introduction. In the next section we will discuss the cost function approach, and present data sources and measures used in the analysis. In the third section, we will present the empirical results of our analysis beginning with the cost function results. The cost function estimates will be used to construct cost indices, pupil weights, and the estimated cost of meeting performance outcomes. The final section is a summary of conclusions.

2. Methodology and Data

Several methods for estimating the cost of education have emerged over the last several decades, and have been used in various states around the country (Duncombe and Yinger, 2003; Guthrie and Rothstein, 1999; Baker, Taylor, and Vedlitz, 2004). The cost function approach, which is used in this report, uses a statistical methodology and actual historical data to estimate the relationship between spending, student performance, student needs, resource prices and enrollment size. In this section we will discuss the application of the cost function methodology to examining the education cost differences

across Kansas school districts. We begin by summarizing the theoretical basis of the cost function approach, and then discuss data sources, and measures.

2.1 Cost Function Approach

The term cost in economics refers to the minimum spending required to produce a given level of output. Applied to education, costs represent the minimum spending required to provide students in a district with the opportunity to reach a particular student performance level. Minimum spending can also be interpreted as the spending associated with current best practices for supporting student performance. Spending can be higher than costs because some districts may not use resources efficiently, that is, they may not use current best practices. Because we have data on spending, not costs, outcome-based approaches to estimating the costs of education must control for school district efficiency. Our approach to this issue is discussed in more detail below.

Education policy and finance scholars have established that the cost of producing educational outcomes depends not only on the cost of inputs, such as teachers, but also on the environment in which education must be provided (Bradford, Malt and Oates, 1969; Downes and Pogue, 1994; Duncombe, Ruggiero, and Yinger, 1996). One of the central findings in education policy research in the last several decades is the important role that non-school inputs, such as student characteristics, family background, neighborhood environment, and peers can have on a child's success in school (Coleman, 1966; Cohn and Geske, 1990; Bridge, Judd, and Moock, 1979; Haveman and Wolfe, 1994). In addition, significant research has examined the impact of school district size on the per pupil costs of providing education (Andrews, Duncombe, and Yinger, 2001; Fox, 1981).

To model the relationship between spending, student performance, and other important characteristics of school districts, a number of education researchers have employed one of the tools of production theory in microeconomics, cost functions. A cost function for school districts relates five factors to spending per pupil: 1) student performance; 2) the price districts pay for important resources, such as teacher salaries; 3) the enrollment size of the district; 4) student characteristics that affect their educational performance, such as poverty; and 5) other school district characteristics, such as the level of inefficiency. In other words, a cost function measures how much a given change in teacher salaries, student characteristics, or district size affects the cost of providing students the opportunity to achieve a particular level of performance.

The cost function methodology has been refined over several decades of empirical application, and cost function studies have been undertaken for New York (Duncombe and Yinger, 1996, 1998, 2000, 2005; Duncombe, Lukemeyer, and Yinger, 2003), Arizona (Downes and Pogue, 1994), Illinois (Imazeki, 2001), Texas (Imazeki and Reschovsky, 2004a, 2004b; Gronberg, et al., 2004), and Wisconsin (Reschovsky and Imazeki, 1998). In estimating the education cost function in Kansas, we have relied on standard methods used in past research modified to reflect education production in Kansas.[1]

2.2 Data Sources and Measures

The cost function estimates provided in this report are based on a number of databases. Most of the data is produced by the Kansas State Department of Education (KSDE). Five years of data (1999-2000 to 2003-2004) is used in the cost function

[1] For example, the specific form of the cost function we use, the so-called constant elasticity or Cobb-Douglas cost function, is the most common cost function used in empirical research. See Appendix A for a more detailed description of this function, and the reasons we chose this over alternative functions.

analysis. Three sets of districts consolidated during this time period.[2] To assure consistency, the information in the pre-consolidated districts is combined so that data is only available for the consolidated district. This section is organized by major type of variables used in the cost model, and summary statistics are reported in Table 1.[3]

Table 1. Cost Model Variables -- Descriptive Statistics (2004)

Variables	Observations	Mean	Standard Deviation	Minimum	Maximum
Per pupil expenditures	300	$6,887	$1,312	$4,915	$12,684
Combined outcome measure	294	71.4	7.9	47.5	90.3
Cost variables:					
Teacher salaries[a]	300	$39,322	$2,949	$28,796	$49,659
Percent free lunch students	300	26.7	11.2	1.7	67.6
Free lunch multiplied by pupil density[b]	300	5.1	22.5	0.0	222.8
Adjusted percent bilingual headcount[c]	300	4.2	7.4	0.0	53.5
Enrollment categories:					
Under 100 students	300	0.013	0.115	0	1
100 to 150 students	300	0.040	0.196	0	1
150 to 300 students	300	0.183	0.388	0	1
300 to 500 students	300	0.230	0.422	0	1
500 to 750 students	300	0.157	0.364	0	1
750 to 1,000 students	300	0.097	0.296	0	1
1,000 to 1,700 students	300	0.103	0.305	0	1
1,700 to 2,500 students	300	0.070	0.256	0	1
2,500 to 5,000 students	300	0.060	0.238	0	1
5,000 students and above	300	0.047	0.211	0	1
Efficiency-related variables:					
Consolidated districts	300	0.010	0.100	0	1
Per pupil property values	300	$48,588	$43,556	$721	$470,365
Per pupil income	300	$82,930	$30,972	$4,390	$312,999
Total aid/income ratio	300	0.08	0.10	0.00	1.78
Local tax share	300	1.37	0.88	0.00	4.58
Percent of adults that are college educated (2000)	300	17.97	6.74	5.78	64.44
Percent of population 65 or over (2000)	300	16.87	5.49	0.61	29.33
Percent of housing units that are owner occupied (2000)	300	88.56	5.67	70.00	97.92

[a]Estimated teacher salaries with state average percent with a graduate degree and state average total experience. Based on individual teacher level data for 2000 to 2004.

[b]Percent free lunch students multiplied by pupils per square mile divided by 100.

[c]Calculated by first regressing the share of bilingual headcount on the Census measure of poor English (with no intercept). The predicted value from this regression is used as the estimate of the share of bilingual headcount, except in those districts where the share of bilingual headcount is greater than zero. See text for more details.

[2] Herndon and Atwood merged to become Rawlins County, Nes Tre La Go, Smoky Hill, and Bazine merged to become Western Plains, and West Graham-Morland merged into Hill City.

[3] Most of the data used in this analysis was assembled by the staff at LPA, and they can provide more detailed information on definitions and sources.

District Expenditures

The dependent variable used in the cost function is district expenditures per pupil. To broadly reflect resources used in the production of educational outcomes in Kansas school districts, LPA selected a spending measure that included expenditures for six functional areas: instruction, student support, instructional support, school administration, general administration, operations and maintenance, and other.[4] Spending on special education, transportation, vocational education, food service, and school facilities are not included in the spending measure used in our analysis. The major source of spending data is the School District Budget mainframe data files maintained by KSDE.

Student Performance

The student performance measures used in the cost function correspond to the measures in the Quality Performance and Accreditation (QPA) standards adopted by the Kansas State Board of Education. The key test measures in the QPA are based on criterion-referenced exams in math and reading (Kansas Reading Assessment, Kansas Mathematics Assessment) in three grades for each subject areas (grades 4, 7, 10 for math, and grades 5, 8, and 11 for reading), which are administered by KSDE. The information reported on these exams is the percent of students reaching certain thresholds in performance: basic, proficient, advanced and exemplary. The accountability system focuses on the percent of students reaching proficiency or above in each exam, and this is the measure of exam performance used in this report.[5] In addition, a measure of graduation rate is also included in the accountability system. KSDE has developed a

[4] The funds and functions in the spending measure used in this report are presented in Appendix B.
[5] To evaluate the sensitivity of the cost function results to specification of the exam scores, we also looked at a measure of performance that gave additional weights to the percent of students reaching advanced status, and exemplary status. The results were not significantly different.

proxy measure for the percent of students entering 9th grade that graduate four years later (cohort graduation rate).[6] The accountability system also includes an attendance rate measure (average daily attendance divided by average daily membership). Since this measure has relatively little variation, it is difficult with statistical methods to detect the relationship between attendance rates and spending. As a result, we did not include attendance rates in the final performance measure.[7]

In developing an overall measure of student performance, a decision needed to be made about how to combine these various measures. Since each is on a similar scale (0 to 100), and they are all considered an important part of the accountability system, a decision was made by LPA to weight them all equally. In other words, the overall measure of performance is a simple average of these 7 student performance measures (3 math exams, 3 reading exams, and graduation results) calculated at the district level.

Figure 1 displays the variation in average student performance across types of districts as defined by the U.S. Census Bureau. Average performance is fairly similar across types of districts except in the large central cities (Kansas City, Topeka and Wichita), which have performance 25% below the state average.[8] Table 2 compares the distribution of student performance in 2004 by type of assessment, to the performance outcomes established by the Kansas State Board of Education. Average student

[6] This graduation rate is equal to the number of graduates in a given year divided by total graduates plus dropouts in this year and the 3 previous years.

[7] Another set of performance measures in the QPA are participation rates on exams. To examine the potential effect of participation rates, we multiplied participation rates by the percent proficient on each exam. The result is the percent of all students in that grade reaching proficiency. Because participation rates are very high, the correlation between this new proficiency measure based on all students and the original proficiency measure based on students tested is very high (over 0.90). This means that including participation rates in our analysis would not change the results significantly. As a result we do not use participation rates as a performance measure in our analysis.

[8] The U.S. Census Bureau classifies Kansas City and Topeka as medium cities. We have reclassified them as large central cities, because they have similar socio-economic characteristics as Wichita.

performance on most outcomes is above the performance outcomes in 2004 in over 75% of school districts. Even using the performance outcomes for 2007, over 50% of districts presently exceed this standard on most performance measures.

Figure 1: Performance Measures in 2004 by District Type

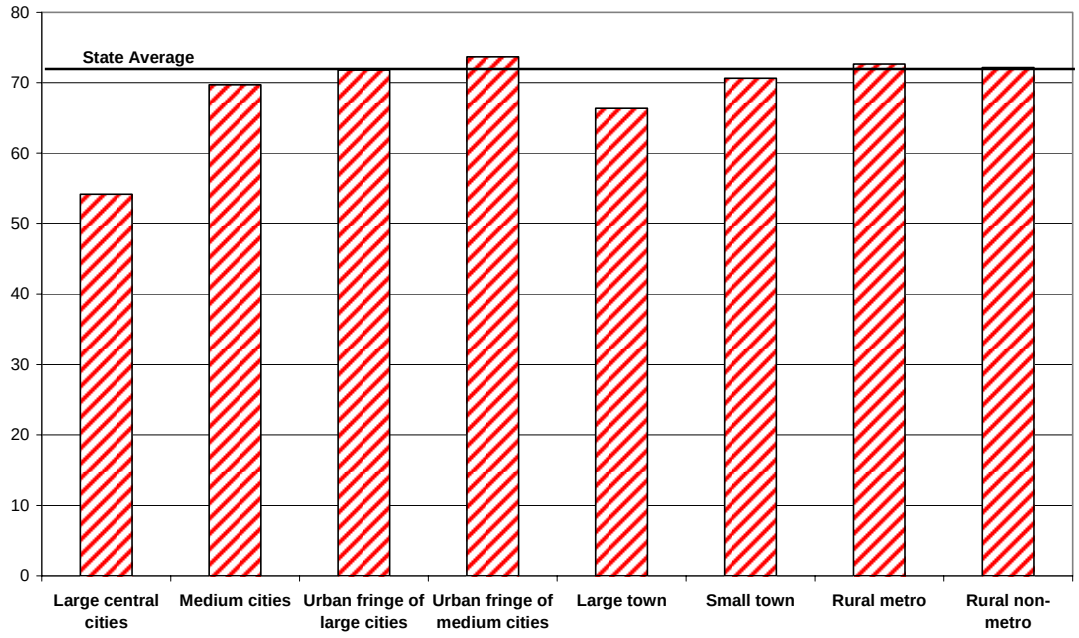

Table 2. Comparison of Performance in 2004 with Performance Outcomes

In This Percent of the Districts:	This Percent of Students Reached Proficiency or Lower on the Following Exams:						Graduation Rate	Overall Performance Measure[a]
	Math			Reading				
	4th	7th	10th	5th	8th	11th		
10 percent	100.0	87.7	72.0	89.9	88.6	78.3	100.0	88.1
25 percent	93.0	79.0	61.5	81.9	83.0	70.8	97.5	81.0
50 percent	85.7	69.1	51.1	72.7	75.0	62.5	93.6	72.8
75 percent	75.3	54.8	41.2	60.4	67.4	54.6	89.7	63.3
90 percent	64.4	46.8	33.3	52.9	60.0	44.8	85.4	55.4
Maximum	100.0	100.0	91.7	100.0	100.0	96.4	100.0	98.3
Minimum	36.8	21.4	7.7	23.1	35.7	21.4	60.0	29.5
Kansas State Board of Education Performance Outcomes:								
2004	53.5	53.5	38.0	57.3	57.3	51.0	75.0	55.1
2005	60.1	60.1	46.8	63.4	63.4	58.0	75.0	61.0
2006	60.1	60.1	46.8	63.4	63.4	58.0	75.0	61.0
2007	66.8	66.8	55.7	69.5	69.5	65.0	75.0	66.9
2008	73.4	73.4	64.6	75.6	75.6	72.0	75.0	72.8
2009	77.8	77.8	70.5	79.7	79.7	76.7	75.0	76.7
2010	82.3	82.3	76.4	83.7	83.7	81.3	75.0	80.7

[a]Simple average of the six test scores and graduation rate.

Student Enrollment Measures

A key variable in a cost model is the number of students served by the district. Student counts are used both directly as a variable in the cost model, and to transform other variables into per pupil measures. Three different student count measures are generally available: enrollment (typically counted on one day), average daily membership (ADM), which captures the average enrollment in a district over the course of the year, and average daily attendance (ADA), which is based on actual attendance rates. For most districts, these measures are usually very highly related. For this analysis, we employ an enrollment measure—fulltime equivalent students (FTE)—which is used in the General State Aid formula. FTE is based on the percent of time a student is enrolled in grades 1 through 12. Students in kindergarten and pre-kindergarten programs count as 0.5 FTE. The FTE enrollment is collected by KSDE from school districts using the Superintendent's Organization Report.

Student Poverty Measure

One of the key factors affecting the cost of reaching performance levels is the number of students requiring additional assistance to be successful in school. Poverty has consistently been found to be negatively associated with student performance. Poverty measures should accurately capture the percentage of a district's students living in low-income households. The most commonly used measure of poverty in education research is the share of students receiving free or reduced price lunch in a school.[9] Another

[9]The National School Lunch Program is administered by the U.S. Department of Agriculture, and individual school districts are reimbursed by the meal depending on the level of subsidy for which a child is eligible. Children with incomes at or below 130 percent of the federal poverty line are eligible for free lunch, and students between 130 and 185 percent of the poverty line are eligible for reduced price lunch. In addition, households receiving Food Stamps, Temporary Assistance to Needy Families (TANF), or the Food Distribution Program on Indian Reservations (FDPIR) are also eligible for free lunch. A description

measure of child poverty is the child poverty rate produced by the Census Bureau every ten years as part of the *Census of Population*.[10] For this study, we will use the percent of students receiving free lunch as the child poverty measure, because it is available every year, and is used presently as the at-risk measure in the General State Aid formula. The share of free lunch students, and the Census child poverty rate are strongly related (correlation = 0.7). The free lunch count is collected by KSDE from school districts using the Superintendent's Organization Report.

Nationally, there is some descriptive evidence suggesting that student performance in high poverty inner city schools is significantly worse than high poverty rural schools (Olson and Jerald, 1998). To examine whether this appears to be the case in Kansas, we have created an additional poverty variable, which is the percent free lunch students multiplied by pupil density (pupils per square mile). The higher the pupil density, the more urbanized we would expect the school district to be. If there is an urban poverty effect on costs, the regression coefficient on this measure should be positive and statistically significant from zero.

Bilingual Headcount

Another student characteristic that can affect the cost of bringing students up to a performance level is their fluency with English. Kansas has recognized this fact by including additional weighting for students requiring bilingual education services. The measure of bilingual education students used in this report is based on the bilingual headcount data districts report to KSDE in their local consolidated plans. To calculate the

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of the program and eligibility requirements is available on the Food and Nutrition Service website: http://www.fns.usda.gov/cnd/lunch/.

[10] While this measure is updated on a biennial basis, the updates are based on the original Census estimates, which implies that they may be quite inaccurate by the end of every decade.

share of bilingual students we divided the bilingual headcount by district FTE. An alternative measure available in the *2000 Census of Population*, which may indirectly measure limited English proficiency, is the percent of students, who live in a household where English is not spoken well at home.[11] Table 3 compares the distribution of the share of bilingual students to the Census measure of poor English at home. In 2004, only 10% of districts indicated that they had any bilingual headcount, while in 58% of districts there were some children in households where English is spoken poorly. If a district indicated it had bilingual headcount, however, the share of these students was typically much higher than the share of households where English is spoken poorly.

Table 3. Comparison of Distribution of Bilingual Measures

	Had This Share or Lower:	
This Percent of the Districts:	**KSDE Share of Bilingual Headcount**	**Census Percent of Students in Households with Poor English**
10 percent	0.0	0.0
25 percent	0.0	0.0
50 percent	0.0	0.5
75 percent	0.0	1.2
90 percent	9.3	2.2
Minimum	0.0	0.0
Maximum	53.5	7.5

Staff at KSDE indicated districts may not report the bilingual headcounts consistently. In addition, KSDE staff indicated districts with a relatively small number of bilingual students may not report any bilingual students, because reporting on and serving them can become financially onerous if the districts don't receive a significant amount of state bilingual aid. There was little that could be done about most reporting

[11] The data is from Table P318, which is titled, "Poverty by Language Spoken at Home and Ability to Speak English for Children 5 Years and Over." Only children attending public schools are included in the count.

inconsistencies. However, to try and correct for non-reporting by districts with very few bilingual students, we predicted the share of bilingual students using the Census measure of poor English spoken at home.[12] If the district reported it had bilingual students, we used the actual share of bilingual headcount, otherwise we used the predicted bilingual share.

Teacher salaries

A key part of a cost model are measures of prices for education resources. Since teachers are the primary resource used to produce education, teacher salaries is the most important resource price to include in the model. In addition, teacher salaries are typically highly correlated with salaries of other certified staff, so that teacher salaries serve as a proxy for salaries of all certified staff. While data on average teacher salaries is readily available for Kansas districts, average teacher salaries can also vary across districts due to differences in average experience and education of teachers in districts.

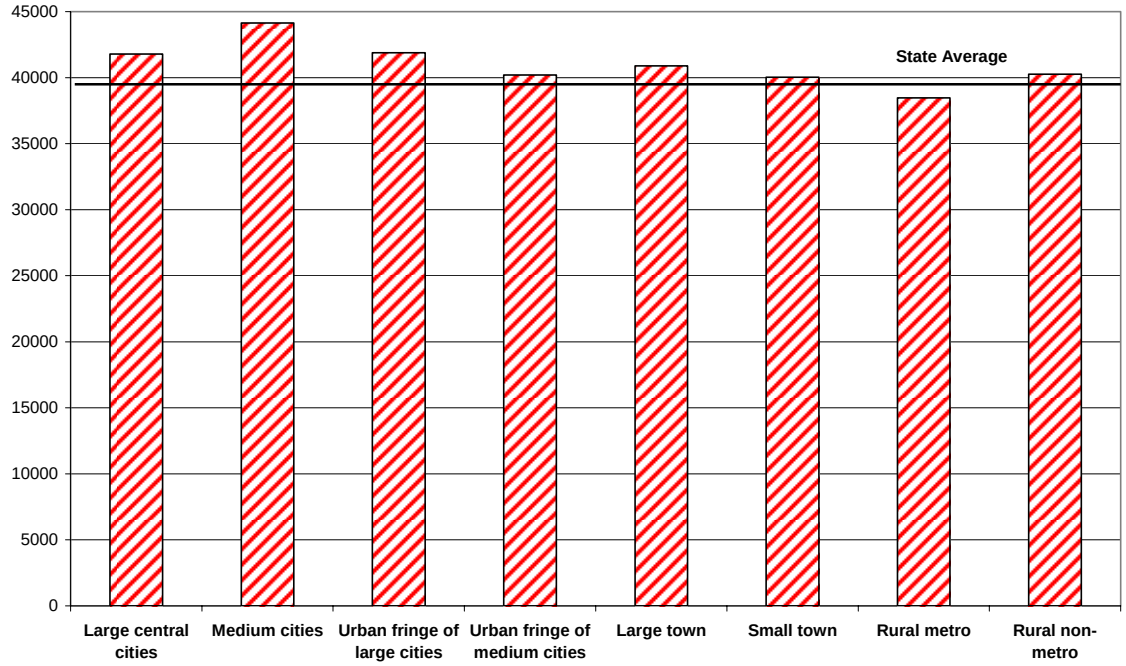
To measure salaries for comparable teachers, we use data on individual teachers from the *Licensed Personnel Report* from KSDE. Information is available in this report on total salary, years of experience, and educational attainment. Using this information, we predict what teacher salaries would be in each district if the teacher experience in the district equaled the state average (of teachers) in total experience, and the district had the state average share of teachers with a masters, doctorate or law degrees.[13] The result

[12] Specifically, we regressed the share of bilingual students on the Census measure restricting the intercept to be zero to assure only positive predictions. The fit from this regression was moderate (adjusted R-square = 0.44).

[13] We regressed the natural logarithm of a teacher's salary on the logarithm of their total experience and indicator variables (0-1) for whether they had a masters, doctorate, or law degree. The fit of this regression was fairly high (adjusted R-square = 0.56). We did not find that the model fit significantly improved when measures of teacher assignment (e.g., math teacher), or when measures of the teacher performance on certification exams are added to the model. There are a few districts with missing observations for salaries

should be a measure of teacher salaries that is comparable across school districts. Figure 2 presents adjusted teacher salaries by type of district. There is relatively little variation across types of districts in the average adjusted salary. Urban districts generally pay above average salaries, and rural districts below average salaries.

Figure 2: Adjusted Salaries in 2004 by District Type



Efficiency-Related Measures

Costs are defined as the minimum spending of school resources required to provide students an opportunity to reach a given level of student performance. However, the dependent variable in the cost model is per pupil spending. Some school districts may have higher spending relative to their level of student achievement not because of higher costs, but because of inefficient use of resources. In addition, some districts may choose to focus on other subject areas (e.g., art, music, athletics) that may not be directly related

in a few years. We used information on predicted salaries in adjacent years and statewide trends in average salaries to impute missing salary information.

to improving test score performance in math and reading or improving the graduation rate. Controlling for efficiency differences across districts is an important step in estimating education cost functions.

Unfortunately, directly measuring efficiency is very difficult. The approach that we use is to include in the cost model variables that have been found to be related to efficiency in previous research. The literature on managerial efficiency in public bureaucracies suggests three broad factors that might be related to productive inefficiency: fiscal capacity, competition, and factors affecting voter involvement in monitoring government (Leibenstein, 1966; Niskanen, 1971; Wyckoff, 1990). Research on New York school districts indicates that taxpayers in districts with high fiscal capacity (property wealth, income and state aid) may have less incentive to put pressure on district officials to be efficient (Duncombe, Miner, and Ruggiero, 1997; Duncombe and Yinger, 2000).[14] While we do not have good measures of competition, we can get information on other factors, which may be related to the level of monitoring of district budgets by voters. We might expect voters to have more incentive and capacity to monitor school district operations in districts where there are more college educated adults, more residents that are age 65 and over, a larger share of households that own their own homes, or where the typical voter pays a larger share of school taxes.[15] The latter concept is commonly referred to as a local tax share, and is measured as the median housing price

[14] Although aid per pupil might appear to be an appropriate way to measure the amount of aid a district receives, the underlying theory behind the use of fiscal capacity variables indicates that the appropriate measure of aid is actually per pupil aid divided by per pupil income (Ladd and Yinger, 2001). The measure used in the cost model is per pupil total aid (state general and supplemental aid plus federal aid) divided by per pupil adjusted gross income.

[15] The source of these three variables is the *2000 Census of Population*, Tables H6 ("Occupancy Status"), H85 ("Median Value for All Owner Occupied Housing Units"), and P37 ("Sex by Educational Attainment for the Population 25 Years and Over").

divided by per pupil property values.[16] Finally, we include a measure of whether a district has consolidated between 2000 and 2004 to reflect potential short-run adjustment costs associated with consolidation.

3. Empirical Results

In this section, we will present the cost function estimates, and construct key measures derived from the cost function results, which can be used to evaluate the present school finance system. One of the key outputs of a cost function is a cost index, which measures the percent difference in estimated costs between a specific district and a district with average characteristics to achieve a particular performance level. In addition, pupil weights are constructed that correspond to some extent to the weights in the present state aid system. Finally, we estimate the cost of providing students the opportunity to reach performance outcomes established by the Kansas State Board of Education. The results of this analysis can be used directly in a school aid formula, such as the General State Aid formula in Kansas. Detailed results for each district in Kansas are presented in appendices D, E, and F to this report.

3.1 Cost Function Estimates

We estimate a cost function for K-12 districts in Kansas using linear multiple regression techniques. One technical complexity arises in estimating this model. Budget decisions involve tradeoffs between desired student outcomes, constraints on local property tax rates, and decisions over salaries, particularly of professional staff. In other

[16] In communities with little commercial and industrial property, the typical homeowner bears a larger share of school taxes (higher tax share) than in communities with significant non-residential property. See Ladd and Yinger (2001), and Rubinfeld (1985) for a discussion of the tax share measure used in median voter models of local public service demand.

words, a district's spending levels, performance goals, and salary levels are set simultaneously as part of the annual budget process. Performance and teacher salaries could be endogenous (meaning they both affect and are affected by district spending) and standard regression techniques are likely to yield biased results. Accordingly, we estimate the cost function with appropriate regression methods that account for this simultaneity.[17]

Table 4 presents results of a cost model estimated for K-12 districts in Kansas using data for a five-year time period (1999-2000 to 2003-2004). The dependent variable is per pupil expenditures, and most of the independent variables are expressed in relative terms (either per pupil or as a percent).[18] There were 1500 potential observations to estimate the cost model (300 districts x 5 years). We used only 1468 observations, because test scores are not available for 6 districts.[19]

In general, the relationships between the different variables and per pupil spending are as we expected (the regression coefficients generally have the expected sign and most are statistically significant from zero at conventional levels). The outcome measures and teachers' salaries are positively related to per pupil spending. We find that, a one percent increase in teacher's salaries is associated with a 1.02 percent increase in per pupil expenditures. Because professional salaries typically represent 80 to 85 percent of operating spending, this result suggests that higher teacher salaries tend to be

[17] Specifically, we use a linear two-stage least squares regression with instruments based on values for performance, salaries, and other socio-economic characteristics in districts in neighboring counties. For a more complete description of the statistical methodology used in this study see Appendix C.

[18] Per pupil spending, the outcome measure, teacher salaries, pupil density, per pupil income, and per pupil property values are expressed as natural logarithms. For the variables that are already expressed as percent, it is not necessary to use this conversion.

[19] These districts include: Fort Leavenworth, West Solomon Valley, Montezuma, Highland, Midway, and Copeland. We are able to develop cost indices, pupil weights, and predicted spending for these districts, because outcomes for all districts are set at the same level.

associated with higher salaries for all personnel hired by a district, as well as with higher prices for contract services.

Table 4. Cost Model Results[a]

Variables	Coefficients	P-value[d]
Intercept	-6.84027	0.19
Performance measure[b]	0.83013	0.00
Cost variables:		
Teacher salaries[b]	1.01765	0.02
Percent free lunch students	0.00636	0.00
Free lunch multiplied by pupil density	0.00065	0.06
Adjusted percent bilingual headcount[c]	0.00139	0.05
Enrollment categories:		
100 to 150 students	-0.12987	0.05
150 to 300 students	-0.29443	0.00
300 to 500 students	-0.38580	0.00
500 to 750 students	-0.44523	0.00
750 to 1,000 students	-0.45612	0.00
1,000 to 1,700 students	-0.52671	0.00
1,700 to 2,500 students	-0.57252	0.00
2,500 to 5,000 students	-0.56802	0.00
5,000 students and above	-0.55366	0.00
Efficiency-related variables:		
Consolidated districts	0.14780	0.00
Per pupil income[b]	0.13097	0.00
Per pupil property values[b]	0.05341	0.02
Total aid/income ratio	0.80593	0.00
Local tax share[b]	-0.02102	0.40
Percent of adults that are college educated (2000)	-0.00666	0.00
Percent of population 65 or older (2000)	-0.00347	0.02
Percent of housing units that are owner occupied (2000)	-0.00218	0.07
Year indicator variables:		
2001	-0.02209	0.31
2002	-0.01666	0.62
2003	-0.08637	0.14
2004	-0.13924	0.09
Adjusted R-square	0.4868	
Sample Size	1468	

[a]Estimated with linear 2SLS with the log of per pupil base spending as the dependent variable. Performance and teacher salaries are treated as endogenous with instruments based on variables for adjacent counties. See Appendix D for methodology. Data is for 1999-2000 to 2003-04.

[b]Measured as natural logarithm.

[c]Calculated by first regressing the share of bilingual headcount from KSDE on the Census measure of poor English (with no intercept). The predicted value from this regression is used as the estimate of the share of bilingual headcount, except in those districts where the share of bilingual headcount is greater than zero. See text for more details.

[d]Probability of being wrong if the hypothesis that the coefficient is equal to zero is rejected. P-values are based on robust standard errors, which correct for heteroskedasticity.

The precision with which we estimate the coefficient on the outcome measure is especially important, because it is used to calculate the cost of providing the opportunity

of reaching different performance outcomes. A one percent increase in outcomes (as measured by reading and math test scores and the graduation rate) is associated with a 0.83 percent increase in per pupil expenditures. The coefficient for the outcome measure indicates that to increase student performance (as measured by reading and math test scores and the graduation rate) by a certain percent will require an almost equal percent increase in spending.[20]

As expected, the cost of operating a school district is higher in small school districts. School districts with 100 or fewer students are almost 30% more expensive to operate than districts with 150 to 300 students, 45% more expensive than districts between 500 and 1000 students, and 57% more expensive than districts with 1,700 to 2,500 students holding other cost factors constant (see Figure 3). Per pupil costs level off once a district gets to 1,700 students, and begin to increase slightly in districts over 5,000 students.[21]

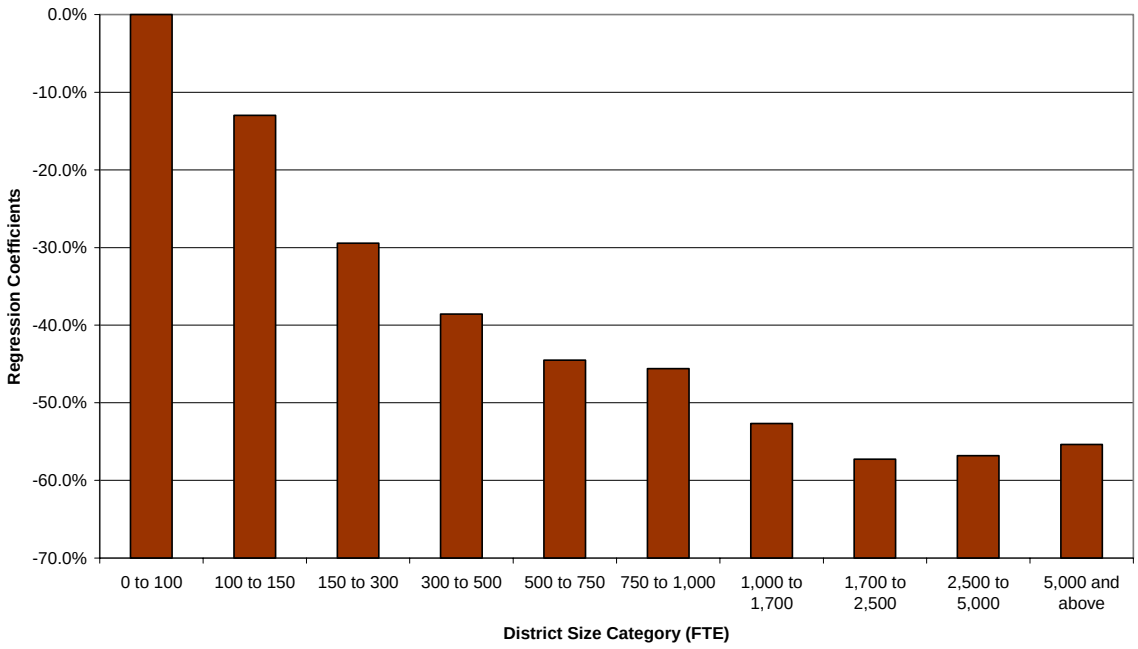
An important factor affecting the cost of providing educational opportunity is the share of disadvantaged students in the district. As discussed above, we have included two measures of disadvantage: 1) percent of FTE receiving free meals (child poverty measure); and 2) an adjusted measure of the share of bilingual headcount. We have also multiplied the share of free lunch students by pupil density to capture any concentrated urban poverty effect. The coefficients on all three measures are positive, and statistically significant. The coefficient on the bilingual variable implies that a one percentage point

[20]A coefficient equal to 1implies constant returns to scale technology in the production of this outcome measure. We cannot reject the hypothesis that the coefficient on outcomes is equal to 1.

[21] We looked at whether there is any statistical difference between districts with enrollment of 1,700 to 2,500 students, and larger districts, and found that there was not a statistically significant difference. For the sake of keeping the cost model as general as possible, we have kept the larger enrollment classes (2,500 to 5,000, and over 5,000) in the cost model. The results do suggest that making the same enrollment adjustment in the aid formula for districts of 1,700 students or more is appropriate.

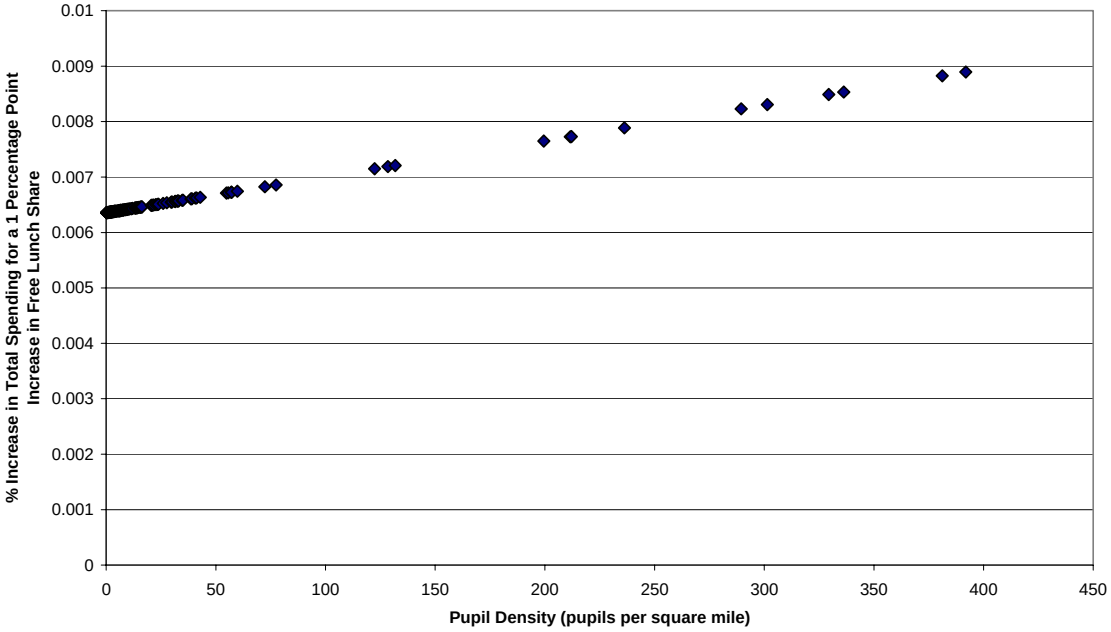
increase in share of bilingual headcount is associated with a 0.00139 percent increase in total per pupil spending (holding other variables in the model constant). The cost impact of bilingual students appears to be low, possibly because cost estimates for free lunch shares may already partially account for the higher costs of bilingual students.

Figure 3: Percent Reduction in Cost Compared to a District with 100 or Less Students



The impact of free lunch students on district costs depends on the pupil density of the district. For sparsely populated districts with low pupil density, a one percentage point increase in the free lunch share is associated with a 0.0064 percent increase in total per pupil spending. For highly urbanized districts the coefficient can increase over 35% to 0.089 (Figure 4). For 90% of districts this coefficient is between 0.0064 and 0.0066.

Figure 4: Effect of Poverty (Free Lunch Share) on Costs for Different Pupil Density Levels



A number of efficiency-related variables are included in the model to control for differences in productive efficiency, and for spending by districts on programs that do not directly improve test scores in math and reading or graduation rates. The variables had the expected relationship with spending, and most are statistically significant from zero. The positive coefficient on the consolidation variable may suggest that these districts have experienced short-term adjustment costs associated with consolidation.[22] Districts with higher fiscal capacity (income, property wealth, and state aid) spend more, all else being equal, possibly because they offer a broader curriculum than other districts, including many subjects and programs that are not reflected in the QPA standards. As hypothesized, districts serving more homeowners, college educated adults, or elderly residents are associated with lower spending. The tax share variable has the expected

[22] Another interpretation of this result is that consolidation raised long-term operating spending per student in the consolidating districts. Within the short timeframe of this study, it is not possible to distinguish between these two interpretations.

negative relationship with spending, but the coefficient is not statistically significant from zero at conventional levels. Finally, year indicator variables are included to measure changes across time, such as inflation or state policy changes, which affect all school districts.

Before reviewing empirical results it is appropriate to discuss some potential limitations of the cost function we have estimated. Compared to other approaches for estimating education costs, the cost function approach makes the best use of available information. Nevertheless, the accuracy of the results from the cost function approach depends on the quality of the available data and on statistical methods that are used (Downes, 2004).[23]

While significant care was taken in assembling the database used for this study, several of the measures are less than optimal. First, the measure of bilingual students collected by KSDE appears to underestimate the true level of these students in a number of districts. We have imputed missing values using data from the 2000 *Census of Population*, but these estimates may be inaccurate for certain districts. Second, the poverty measure we use, the share of free lunch students, can also be influenced by discretionary district decisions, such as how aggressively the district works to identify and enroll eligible students. Third, the efficiency-related variables in the model are selected based on theory and previous research, but efficiency cannot be measured directly and there is no consensus on the ideal list of such variables. To determine whether the results depend on which efficiency-related variables are included, we estimated our model with several different sets of such variables. We found that the

[23] Of course, data limitations affect every method for estimating educational costs. Poor data limits the absolute accuracy of the cost function approach, but there is no reason to believe that it limits the accuracy of the cost function approach relative to other approaches.

results are robust; that is, the results for the cost variables are similar for many different specifications of the efficiency variables.

Statistical analysis can yield misleading or biased results if the wrong statistical tools are used. By drawing on the literature on educational cost functions, we have identified potential sources of bias in our statistical procedures and selected methods designed to eliminate those sources of bias. All of the methods we use are well known to scholars and widely used in the educational cost literature.[24] Non-statistical approaches for estimating educational costs do not even recognize sources of bias, let alone correct for them.

3.2 Cost Index Results

Once an education cost function has been estimated, the results from this function can be used to construct an education cost index to reflect the impact of factors outside of district control on costs. Cost indices can be calculated in a few simple steps. For each variable a district can influence (outcome measure, and efficiency-related variables), the estimated coefficient of the cost model is multiplied by some constant, typically the state average for that variable.[25] "This approach holds these variables constant across school districts; that is, it does not allow factors inside a district's control to influence its relative educational cost." (Duncombe, Lukemeyer, and Yinger, 2003) Because actual teacher salaries are also under control of school officials, in constructing the cost index we use instead estimated salaries based on external factors related to the cost of hiring teachers.[26]

[24] For more discussion of the statistical methods used in the study see Appendix C.
[25] Technically, a district cannot influence directly the efficiency-related variables in the model. These variables are serving as proxies for district efficiency, which is under district control.
[26] Specifically, the predicted salary from a salary regression, which includes all exogenous variables in the cost model and the instruments, is used as the estimate of salaries. The local tax share variable is not available for Fort Leavenworth. We impute the tax share for Fort Leavenworth using the state average for this variable when estimating the salary model.

For each cost factor outside of district control, the estimated coefficient from the cost model is multiplied by the actual values for the district. It is the variation in these cost factors that drives variation in the cost index. The sum of the products for factors outside and within district control is used to predict costs in a district with average outcomes and efficiency.[27] Predicted costs are also calculated for a hypothetical average district which has average values for all variables in the cost model. Predicted costs in each district are divided by costs in this average district (and multiplied by 100) to get the overall cost index. The overall cost index indicates how much more or less a particular district needs to spend compared to a district with average characteristics to provide its students an opportunity to reach the same performance level. For example, a cost index of 120 indicates that a district will require 20% more spending than the average district to reach any student outcome level. A cost index is a measure of relative variation in costs.

Cost indices can be developed for each of the key external factors affecting costs. As illustrated in Figure 5, the overall cost index is the product of the cost indices for each factor (if the indices are divided by 100). The overall cost index for Kansas City is constructed by multiplying together the cost indices for poverty (free lunch), teacher salaries, enrollment size, and bilingual share. Using the component indices, it is possible to decompose for each district which factors have the most influence on the cost of education. The overall index for Kansas City is driven primarily by high poverty (which raises costs) and high enrollment (which lowers costs). Salaries and bilingual headcount

[27] The level of outcomes and efficiency used to construct a cost index does not matter, because the cost index measures relative differences in costs, not absolute cost levels. Because the cost function we use is of the constant elasticity form, to find predicted spending we need to take the anti-log of the sum of the products.

have a limited effect on the cost index. Cost indices for all districts in Kansas are reported in Appendix D.

Figure 5: Decomposing the Overall Cost Index Into Component Indices for Kansas City

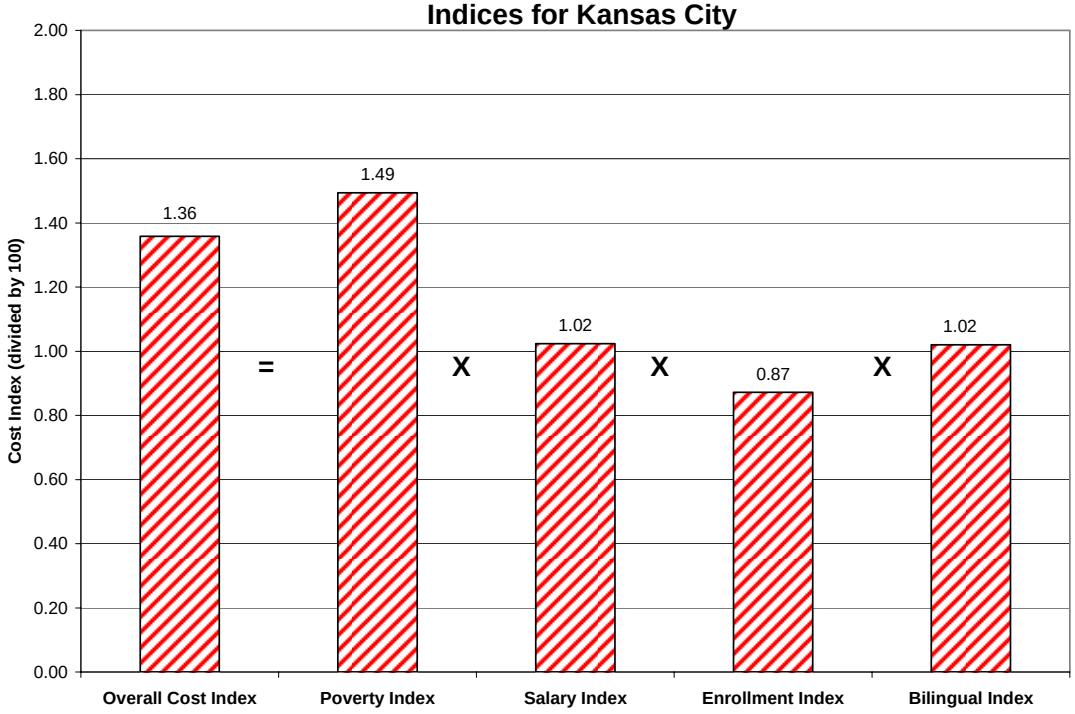


Table 5 presents the distribution of the overall cost index, and its component indices. The overall cost index ranges in value from 75 to 151, with 50 percent of the districts with index values between 93 and 108. Among component indices the poverty index and enrollment index have the most variation ranging from the 85 to 152. By contrast, there is very little variation in the index for the bilingual share, both because many districts have no bilingual students, and the estimated cost impact of these students (independent of poverty) is relatively small. The salary index falls in between in terms of the level of variation ranging from 85 to 116, with only 10% of districts with a salary index above 106.

Table 5. Distribution of Cost Indices Results by Type

This Percent of the Districts:	Had This Index or Lower:				
	Overall Index	Poverty Index	Salary Index	Enrollment Index	Bilingual Index
10 percent	85.9	91.4	95.2	85.9	99.4
25 percent	92.5	94.9	97.4	89.5	99.4
50 percent	98.3	99.5	100.4	97.1	99.7
75 percent	107.6	104.2	103.1	103.1	100.1
90 percent	117.6	110.0	105.6	113.0	101.0
Minimum	75.1	85.2	84.7	85.5	99.4
Maximum	151.0	149.4	115.6	151.6	107.1

Another way to illustrate the variation in relative costs is to examine how indices vary with the characteristics of the district. Table 6 presents average cost indices for districts in a particular enrollment, poverty, or bilingual category, or Census district type. The overall cost index declines as enrollment increases up to a district size of 2,500 students, and then starts to increase. Decreases in the enrollment index account for the declining index values until above average poverty and salary costs in large districts causes the overall index to increase. As expected the overall cost index goes up with poverty due to the large increase in the poverty index. The salary index is actually highest in low poverty districts, which probably reflects a higher cost of living in some low-poverty suburban districts. There is little relationship between the overall cost index, and the bilingual share except in districts with a very high bilingual share. As a group, large central cities (Kansas City, Topeka and Wichita) have costs that are 25% above the average district due almost entirely to very high poverty cost indices. Rural metro districts have costs 6% above average due to higher costs associated with low enrollment. The other type of district with above average costs, large towns, have above average poverty and teacher salary costs. The lowest costs are in districts on the urban fringe of a

large city (primarily suburbs), with below average poverty and a lower enrollment cost index.

Table 6. Cost Indices by District Category[a]

District Category	Overall Cost Index	Poverty Cost Index	Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
Enrollment categories:					
Under 100 students	129.2	99.2	86.1	151.6	99.8
100 to 150 students	123.5	102.6	90.0	133.2	100.3
150 to 300 students	112.2	102.3	96.9	113.0	100.1
300 to 500 students	101.0	99.4	98.5	103.1	100.0
500 to 750 students	96.6	98.1	101.5	97.1	99.9
750 to 1,000 students	99.7	100.1	103.9	96.1	99.9
1,000 to 1,700 students	89.7	98.3	102.3	89.5	99.6
1,700 to 2,500 students	85.9	98.4	102.4	85.5	99.8
2,500 to 5,000 students	92.1	102.3	104.6	85.9	100.2
5,000 -10,000 students	97.2	103.2	106.8	87.2	101.1
10,000 students and above	106.1	114.1	107.2	87.2	100.4
Free lunch share:					
0-10 percent	85.2	88.2	105.6	91.8	99.8
10-20 percent	91.6	93.2	101.4	97.4	99.7
20-30 percent	101.0	98.9	98.9	103.9	99.9
30-40 percent	106.0	105.0	99.3	102.2	100.0
Over 40 percent	116.5	116.3	100.1	99.5	101.3
Bilingual headcount share:					
0-10 percent	101.9	99.2	98.2	105.8	99.4
10-20 percent	90.3	97.5	102.8	90.7	99.6
20-30 percent	96.8	99.4	100.9	94.9	99.9
30-40 percent	105.8	103.7	99.9	102.2	100.7
Over 40 percent	121.6	108.7	103.7	104.6	103.6
Census district type:					
Large central cities	124.6	138.9	101.9	87.2	100.9
Medium cities	92.0	97.5	109.5	86.7	99.9
Urban fringe of large cities	87.1	95.8	104.1	87.6	99.8
Urban fringe of medium cities	91.8	96.1	101.5	94.2	99.8
Large town	102.5	111.1	104.4	86.8	101.8
Small town	96.3	103.3	102.2	91.3	100.0
Rural metro	105.7	100.9	98.0	107.2	100.1
Rural non-metro	94.5	95.3	102.0	97.7	99.7

[a]Simple average of cost indices for districts in each category.

3.3 Pupil Weight Estimates

Most states adjust for disadvantaged students either through categorical aid programs, or by providing extra weights for poverty students in the basic operating aid program (Baker and Duncombe, 2004; Carey, 2002). Kansas applies pupil weights for "at-risk" children, bilingual education, low enrollment, transportation, vocational

education, and students attending school in new facilities (KLRD, 2005). Using the cost function results, we can develop weights for poverty (free lunch), bilingual education, and low enrollment. The weights for poverty and enrollment can be compared to weights in the present aid program. The bilingual weight is not comparable, because we use a different measure of bilingual education.[28]

Pupil weights are calculated in several steps. First, we develop an estimate of baseline costs to meet the performance standards in a hypothetical district with a total enrollment between 1,700 and 2,500 students that has no students with special needs. The student performance variable is set at the performance standard, teacher salaries are set at the state average, and the efficiency related variables are set at values consistent with above average efficiency (67th percentile).[29] The baseline cost per pupil to meet the 2004 standards is estimated to be $3,698. The baseline cost of meeting the 2006 standards is $4,024 and for the 2007 standards the baseline cost is $4,346. Then, for each district, we calculate separate per pupil cost estimates when the district's actual values for enrollment, poverty, or bilingual education are used. For example, to predict the additional costs associated with poverty in a particular district, we calculate per pupil costs using all of the values from the hypothetical baseline district except for poverty (which is set at our particular district's actual value). The baseline cost per pupil is

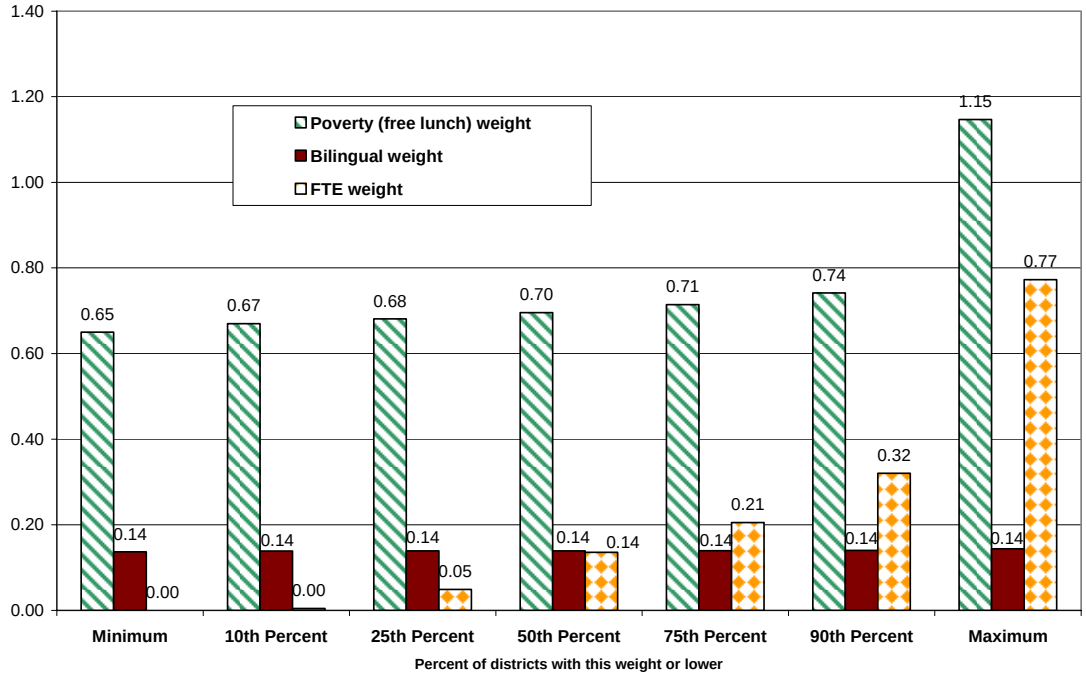
[28] The present aid program uses student contact hours to calculate the number of bilingual FTE in the district. In general, only time spent with a bilingual-endorsed teacher counts in computing bilingual FTE, which makes this a poor measure of the number of bilingual students within a district. Instead, we use bilingual headcount data from KSDE and data from the Census to estimate the number of bilingual students in a district (see pages 11-13).

[29] The fiscal capacity measures (property values, income, state aid) have coefficients with positive values. For example, if districts have higher property values per pupil, they spend more per pupil (a coefficient of 0.05341). An above-average level of efficiency is captured using the 33rd percentile of property values per pupil (where one-third of the districts have property values of this amount or less). Other relationships have coefficients with negative values. For example, if districts have more residents that are age 65 and over, they tend to spend less per pupil (a coefficient of -0.00347). In this case, an above-average level of efficiency is captured using the 67th percentile (where one-third of the districts have this percent of elderly residents or more).

subtracted from this predicted cost with poverty. The difference is divided by the share of free lunch students to estimate the increased cost associated with a free lunch student. Finally, the increased cost per free lunch student is divided by the original baseline cost per pupil to get the free lunch pupil weight.[30] A similar process is used for bilingual students and enrollment categories.[31]

Figure 6 illustrates the distribution of pupil weights for poverty, bilingual headcount, and enrollment (FTE) category. Pupil weights for all Kansas districts are available in Appendix E.

Figure 6: Distribution of Pupil Weights by Type



[30] Duncombe and Yinger (2005) show that the above process can be simplified to the following calculation: $W_i = (\exp(b_i C_i) - 1) / C_i$, where W_i is the pupil weight for cost factor i, b_i is the regression coefficient, and C_i is cost factor i, which in this case is the free lunch rate.

[31] In the case of enrollment categories, the weight simply reflects the percent difference in costs between a district in this enrollment category compared to base expenditures.

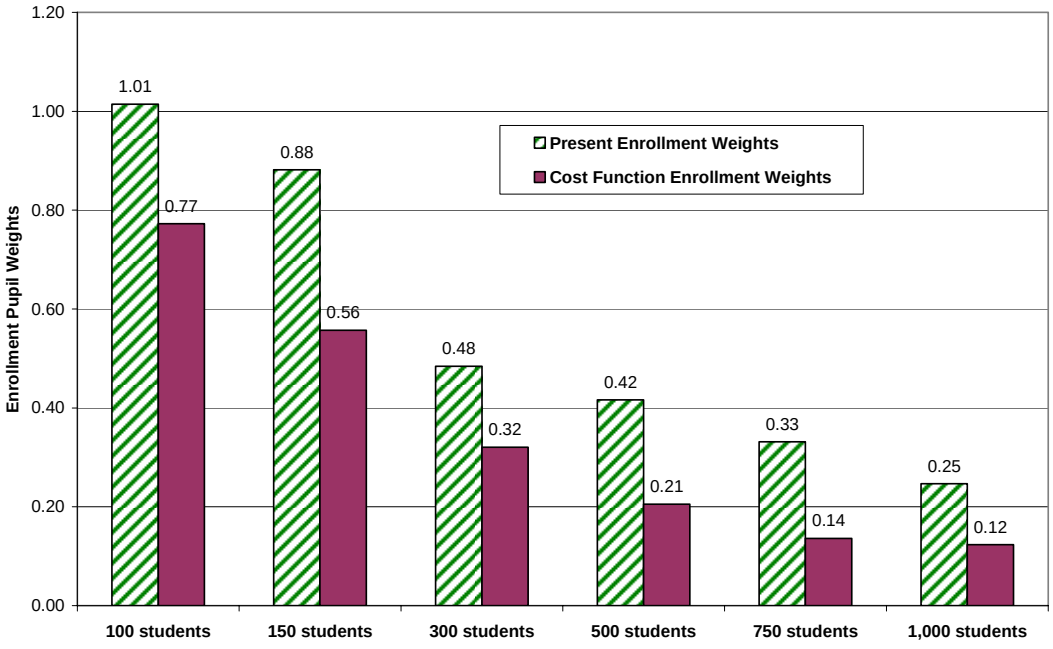
The poverty weight in the median district is 0.70, indicating that it costs 70% more to bring a free lunch student up to any performance level than a non-poverty student. The poverty weights range from 0.65 in rural districts to 1.15 in urban districts. This weight is significantly higher than the "at-risk" weight in the present General State Aid formula (0.193). By contrast, the bilingual weight averages 0.14, and varies little across districts. It is possible that the weight on the free lunch share is partially capturing the higher costs associated with bilingual students, if many bilingual students are also eligible for free lunch.

The pupil weight for enrollment size ranges from zero in districts between 1,700 and 2,500 students to 0.77 in districts with 100 or fewer students. The median pupil weight for enrollment is 0.14, and 75% of districts have a weight of 0.21 or lower. The enrollment weights derived from the cost function are lower than those used in the present aid formula in all enrollment categories (Figure 7).[32] For enrollment levels of 300 or below, the enrollment weights based on the cost model are 24% to 35% below the weights in the present formula. For enrollment levels of 500 students or higher the cost index weights are half or less than the enrollment weights in the present formula. We can think of two explanations for these differences. First, the enrollment effects estimated in a cost function are likely to be lower than simple comparisons of per pupil spending by district size, because cost functions control for other factors affecting costs, such as student performance, poverty, teacher salaries, and efficiency. Second, the cost function includes 10 enrollment categories compared to three enrollment categories in the present

[32] Enrollment weights for different enrollment levels from the General State Aid formula were obtained from LPA.

formula, which captures more accurately the sharp drop in costs between districts with 100 students to districts with 500 students.

Figure 7: Comparison of Present Enrollment Pupil Weights With Those From Cost Function



Distribution of pupil weights by type of districts is presented in Table 7. As expected, enrollment weights drop sharply between districts with 100 or less students (0.77), and districts with 500 students (0.14), and enrollment weights decline slowly up to 1,700 students. The enrollment weight averages 0.25 in rural metro districts, and 0.14 in rural non-metro districts. The free lunch pupil weight is higher in large districts (10,000 or more students), and in districts with very high poverty. The free lunch (poverty) weight is 1.15 in Kansas City and 1.06 in Wichita, and averages 0.79 or higher in medium cities and large towns. By contrast, there is little variation in pupil weights for bilingual students, which are approximately 0.14 for all districts.

Table 7. Pupil Weights by District Category[a]

District Category	Poverty Weight	Bilingual Weight	Enrollment Weight
Enrollment categories:			
Under 100 students	0.69	0.14	0.77
100 to 150 students	0.70	0.14	0.56
150 to 300 students	0.70	0.14	0.32
300 to 500 students	0.69	0.14	0.21
500 to 750 students	0.69	0.14	0.14
750 to 1,000 students	0.70	0.14	0.12
1,000 to 1,700 students	0.69	0.14	0.05
1,700 to 2,500 students	0.71	0.14	0.00
2,500 to 5,000 students	0.76	0.14	0.00
5,000 -10,000 students	0.75	0.14	0.02
10,000 students and above	0.98	0.14	0.02
Free lunch share:			
0-10 percent	0.69	0.14	0.07
10-20 percent	0.68	0.14	0.14
20-30 percent	0.69	0.14	0.21
30-40 percent	0.72	0.14	0.19
Over 40 percent	0.79	0.14	0.16
Bilingual headcount share:			
0-10 percent	0.69	0.14	0.24
10-20 percent	0.70	0.14	0.06
20-30 percent	0.72	0.14	0.13
30-40 percent	0.72	0.14	0.20
Over 40 percent	0.73	0.14	0.22
Census district type:			
Large central cities	1.11	0.14	0.02
Medium cities	0.79	0.14	0.01
Urban fringe of large cities	0.73	0.14	0.02
Urban fringe of medium cities	0.69	0.14	0.10
Large town	0.80	0.14	0.01
Small town	0.71	0.14	0.07
Rural metro	0.70	0.14	0.25
Rural non-metro	0.69	0.14	0.14

[a]Simple average of pupil weights for districts in each category.

3.4 Estimated Costs to Reach Student Performance Outcomes Set by Kansas State Board of Education

The bottom line in developing a school finance system to support student achievement standards is to assure that each school district has the resources necessary to reach these standards. The General State Aid formula used by Kansas is a variant on a "foundation program," which is the type of basic operating aid program used in most

states (Duncombe and Johnston, 2004). For a foundation program to support student performance standards, the first component of the aid formula should be an estimate of the minimum cost necessary to achieve these standards, which is commonly referred to as the ***foundation level***. In Kansas, this is analogous to each district's general fund budget. The second component of a foundation formula is required minimum local tax effort, typically measured as the product of the state-set minimum property tax rate and district property value. Different districts have different foundation levels and different minimum required local tax efforts. The difference between a district's foundation level and its minimum local tax effort equals the amount of state aid the district receives.

The cost function is well suited to estimating costs required for different student performance standards (i.e. foundation levels), because it directly links spending and performance, accounting for the effects of factors outside and within district control. We estimate these costs for Kansas in three steps. First, we set efficiency-related variables at values consistent with above-average efficiency (67^{th} percentile). In other words, our foundation levels are an estimate of what it could cost a district to reach the performance standards, if it were relatively efficient. Second, we use the performance outcomes set by the Kansas State Board of Education for the three math exams, the three reading exams, and the graduation rate. To construct a performance standard comparable to the outcome index used in the cost model, we took a simple average of the standards for these seven performance measures. Third, we allowed spending to vary across districts based on factors outside district control, namely, enrollment size, the concentration of disadvantaged students, and the predicted costs of hiring teachers.

Given the data used for our cost model, these three steps lead to an estimate of the ***minimum cost for achieving the seven performance targets in each school district (excluding special education, vocational education, and transportation). This cost is the district's estimated foundation spending level.*** Estimated costs (foundation spending levels) for all school districts in Kansas are presented in Appendix F for performance outcomes in 2004, 2006, and 2007. [33]

Figure 8 compares the implicit foundation levels in the General State Aid formula for 2005-06 (referred to as the adjusted general fund budget per pupil because of modifications to make it comparable to the spending measure included in the cost model) with the estimated cost of meeting the performance outcomes in 2004, 2006, and 2007.[34] The estimated cost to meet the 2004 standard is 5% above ($258 per pupil) the adjusted general fund budget per pupil in the General State Aid formula in 2005-06.[35] The estimated cost to reach the performance outcomes in 2006 is 14% above ($709 per pupil), and in 2007 it is 23% above ($1,153 per pupil) the adjusted general fund budget per pupil in 2005-06. Using 2003-04 FTE, the differences between total estimated costs and the total adjusted general fund budget are approximately $115 million for 2004 outcomes, $315 million for 2006 outcomes, and $513 million for 2007 outcomes.

[33] Given that the standards for 2005 and 2006 are the same, we only look at the standard for 2006.
[34] Several modifications are made to the general fund budget per pupil in the 2005-06 General State Aid formula to make it comparable to the results of the cost model. The measure of spending in the cost model does not include special education, vocational education, or transportation. The pupil weights for special education, vocational education, and transportation are removed from total weighted pupils. This adjusted total weighted pupils is multiplied by Base State Aid Per Pupil (BSAPP), and divided by total unweighted FTE to construct an adjusted general fund budget per pupil. Finally, the adjusted general fund budget per pupil is deflated by 1.06 (assuming 3% inflation in 2005 and 2006) so that it is comparable to the estimated costs, which are based on 2003-04 spending.
[35] We take the pupil-weighted average of estimated costs and adjusted general fund budget per pupil. To find the statewide total costs multiply the pupil weighted averages by total students.

Figure 8: Comparison of Adjusted General Fund Budget Per Pupil in 2005-06 with Estimated Costs to Meet Peformance Outcomes in Different Years
(all amounts are in 2003-04 dollars)

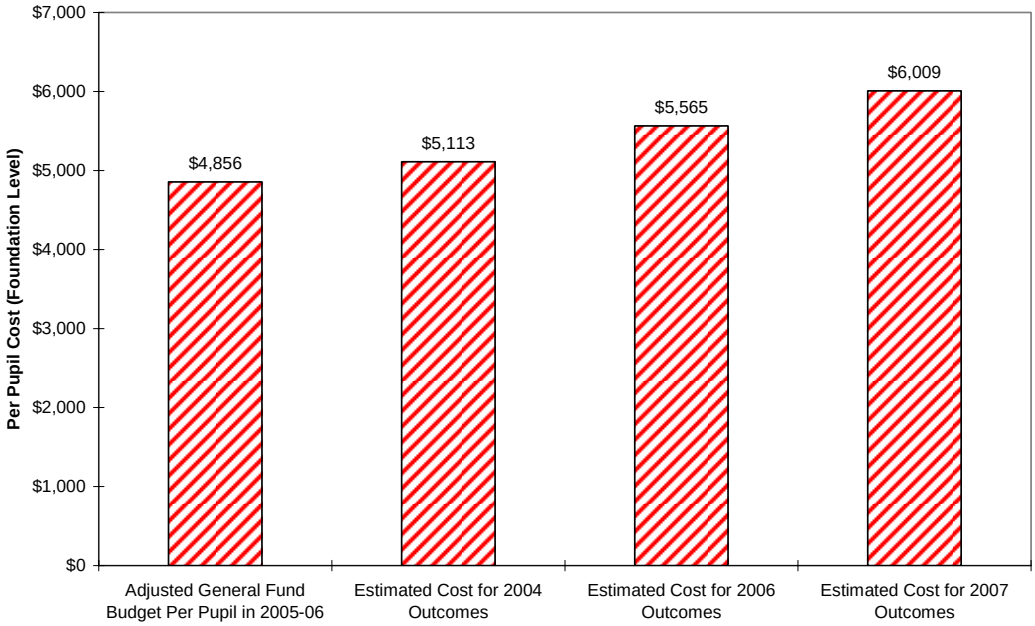


Table 8 compares the estimated cost of meeting the performance outcomes (foundation levels) to the adjusted general fund budget per pupil in 2005-06 for districts in different enrollment, free lunch, or bilingual categories, and for district types as defined by the Census.[36] The implicit foundation level in the present formula (adjusted general fund budget per pupil) exceeds our estimated costs for districts under 750 students for the 2004 and 2006 performance outcomes. For all years, however, adjusted general fund budget per pupil falls short of our estimated costs for districts with over 1,700 students. The present aid formula falls significantly below our estimated costs for districts with a high share of disadvantaged students, and for medium and large cities, and large towns. In the case of rural metro districts, on the other hand, our estimated costs for 2004 and 2006 are lower than the adjusted general fund budget per pupil for 2005-06.

[36] Table 8 presents pupil-weighted averages for each district category.

Table 8. Comparison Between Adjusted General Fund Budget Per Pupil in General State Aid Formula for 2005-06, and Estimated Costs to Meet Performance Outcomes[a] (All amounts are in 2003-04 dollars)

District Category	Adjusted General Fund Budget Per Pupil in 2005-06[b]	Estimated Costs to Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
		2004	2006	2007	2004	2006	2007
Enrollment categories:							
Under 100 students	$8,308	$6,716	$7,309	$7,893	-19.2	-12.0	-5.0
100 to 150 students	$8,056	$6,373	$6,936	$7,490	-20.9	-13.9	-7.0
150 to 300 students	$6,902	$5,785	$6,296	$6,799	-16.2	-8.8	-1.5
300 to 500 students	$6,111	$5,224	$5,686	$6,139	-14.5	-7.0	0.5
500 to 750 students	$5,713	$4,994	$5,435	$5,869	-12.6	-4.9	2.7
750 to 1,000 students	$5,404	$5,149	$5,604	$6,051	-4.7	3.7	12.0
1,000 to 1,700 students	$4,813	$4,635	$5,044	$5,447	-3.7	4.8	13.2
1,700 to 2,500 students	$4,353	$4,439	$4,831	$5,217	2.0	11.0	19.8
2,500 to 5,000 students	$4,420	$4,779	$5,200	$5,615	8.1	17.6	27.0
5,000 -10,000 students	$4,454	$5,024	$5,467	$5,904	12.8	22.8	32.6
10,000 students and above	$4,638	$5,545	$6,034	$6,516	19.6	30.1	40.5
Free lunch share:							
0-10 percent	$4,531	$4,388	$4,776	$5,157	-3.2	5.4	13.8
10-20 percent	$4,704	$4,554	$4,956	$5,351	-3.2	5.4	13.8
20-30 percent	$5,175	$4,886	$5,318	$5,742	-5.6	2.8	11.0
30-40 percent	$5,074	$5,134	$5,588	$6,034	1.2	10.1	18.9
Over 40 percent	$4,833	$6,110	$6,650	$7,180	26.4	37.6	48.6
Bilingual headcount share:							
0-10 percent	$5,517	$4,924	$5,359	$5,786	-10.8	-2.9	4.9
10-20 percent	$4,576	$4,541	$4,942	$5,336	-0.8	8.0	16.6
20-30 percent	$4,640	$4,818	$5,244	$5,662	3.8	13.0	22.0
30-40 percent	$4,948	$5,955	$6,481	$6,999	20.4	31.0	41.5
Over 40 percent	$5,232	$5,978	$6,505	$7,025	14.3	24.3	34.3
Census district type:							
Large central cities	$4,751	$6,418	$6,985	$7,542	35.1	47.0	58.7
Medium cities	$4,402	$4,602	$5,009	$5,408	4.5	13.8	22.9
Urban fringe of large cities	$4,445	$4,561	$4,963	$5,359	2.6	11.7	20.6
Urban fringe of medium cities	$4,640	$4,429	$4,820	$5,205	-4.5	3.9	12.2
Large town	$4,614	$5,317	$5,787	$6,249	15.2	25.4	35.4
Small town	$4,842	$4,971	$5,410	$5,842	2.7	11.7	20.7
Rural metro	$5,898	$5,233	$5,695	$6,149	-11.3	-3.4	4.3
Rural non-metro	$4,837	$4,551	$4,953	$5,348	-5.9	2.4	10.6

[a]Pupil-weighted average of estimated costs and Adjusted General Fund Budget Per Pupil for each category.

[b] Base State Aid Per Pupil (BSAPP) for 2005-06 multiplied by weighted FTE without weights for special education, vocational education, or transportation. This product is divided by unweighted FTE and by a deflator (1.06) to turn it into 2003-04 dollars.

Table 9 lists the top ten districts in terms of the percent difference between the estimated cost of meeting performance outcomes (foundation level) and the foundation level under the present aid program (adjusted general fund budget per pupil). The estimated costs in Kansas City, Topeka, and Wichita to support performance standards in 2006 are between 43% and 60% above the foundation level in the General State Aid formula for the same year. The gap between the estimated costs and adjusted general fund budget per pupil for these ten districts ranges between 16% and 73%.

Table 9. Comparison Between Adjusted General Fund Budget Per Pupil in General State Aid Formula for 2005-06, and Estimated Costs to Meet Performance Outcomes, Districts with Highest Percent Difference (All amounts are in 2003-04 dollars)

District Code		Adjusted General Fund Budget Per Pupil in 2005-06[a]	Estimated Costs to Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
500	Kansas City	$4,788	$7,024	$7,644	$8,254	46.7	59.7	72.4
501	Topeka	$4,571	$6,021	$6,552	$7,075	31.7	43.4	54.8
259	Wichita	$4,789	$6,276	$6,830	$7,375	31.0	42.6	54.0
480	Liberal	$4,880	$5,936	$6,460	$6,976	21.6	32.4	42.9
443	Dodge City	$5,067	$6,140	$6,682	$7,215	21.2	31.9	42.4
457	Garden City	$4,703	$5,699	$6,202	$6,697	21.2	31.9	42.4
505	Chetopa	$5,966	$7,123	$7,752	$8,370	19.4	29.9	40.3
308	Hutchinson	$4,440	$5,258	$5,722	$6,179	18.4	28.9	39.2
453	Leavenworth	$4,415	$5,206	$5,666	$6,118	17.9	28.3	38.6
470	Arkansas City	$4,502	$5,217	$5,678	$6,131	15.9	26.1	36.2

District Code	District Name	Enrollment (FTE)	Overall Cost Index	Poverty Cost Index	Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
500	Kansas City	19435	138.6	149.4	102.3	88.9	102.0
501	Topeka	13342	118.8	133.3	100.4	88.9	99.8
259	Wichita	45508	123.9	133.9	103.0	88.9	101.0
480	Liberal	4292	117.2	119.2	107.3	87.7	104.4
443	Dodge City	5581	121.2	120.1	106.9	88.9	106.2
457	Garden City	7074	112.5	113.8	107.7	88.9	103.2
505	Chetopa	282	140.6	128.5	95.5	115.3	99.4
308	Hutchinson	4707	103.8	118.6	100.3	87.7	99.5
453	Leavenworth	4016	102.8	113.5	103.4	87.7	99.9
470	Arkansas City	2839	103.0	113.7	102.6	87.7	100.7

[a] Base State Aid Per Pupil (BSAPP) for 2005-06 multiplied by weighted FTE without weights for special education, vocational education, or transportation. This product is divided by unweighted FTE and by a deflator (1.06) to turn it into 2003-04 dollars.

The second panel of Table 9 lists the cost indices for these ten districts. As expected all of the districts have above average costs (cost index above 100), and the poverty cost index is the principal reason for higher costs in all of these districts. Beside poverty, above average index values for teacher salaries, and bilingual headcount in Garden City, Liberal, and Dodge City are key factors driving their higher estimated costs. With the exception of Chetopa, all of the districts in Table 9 have enrollments above 2,500 students, which implies that their enrollment index is below 100. For Chetopa, small enrollment size as reflected in the enrollment cost index of 115 is another important factor increasing costs.

4. Conclusions

The objective of this report is to apply the cost function approach to estimate what it "should cost" to achieve specified educational outcome measures adopted by the Kansas State Board of Education. Using extensive data on Kansas school districts over a five-year period we estimate an education cost function that accounts for factors both within and outside of district control. The coefficients for the independent variables in the cost function have the expected relationship with spending, and most are estimated with a high degree of precision. Findings generally match results from cost function studies in other states.

The results of the estimated cost function have been used to produce cost indices, pupil weights, and the estimated cost of meeting performance standards. An examination of cost indices indicates that most cost differences across districts are driven either by variation in poverty or enrollment size. The highest costs are estimated to be in large central cities (Kansas City and Wichita), and in small rural districts with above-average poverty. Variation in teacher salaries and the share of bilingual students have smaller impacts on education costs.

Pupil weights derived from the cost function are quite different from those used in the present General State Aid formula. Cost function poverty weights (based on the share of free lunch FTE) average 0.70, and range from 0.65 in low poverty rural districts to 1.15 in high poverty urban districts. Even the lowest weight is substantially higher than the at-risk weight in the present formula (0.193). The cost function bilingual weight, on the other hand, is quite low, averaging 0.14; due to measurement differences, however, it cannot be compared with the formula weight. If a substantial share of bilingual education

students receive free lunch, it is possible that the cost function poverty weight captures a portion of the higher costs associated with bilingual students. The enrollment weights derived from the cost function are substantially below present enrollment weights, particularly for districts between 500 and 1,700 students.

Using results of the cost function we estimate the minimum costs for districts to provide the opportunity for regular education students to reach the seven performance outcomes established by the State Board of Education for 2004, 2006, and 2007. The estimated minimum costs are consistent with the concept of a foundation level in a foundation aid program, such as the General State Aid formula used by Kansas, which is designed to support student performance outcomes. We have compared the estimated cost to meet the performance outcomes (foundation levels) from the cost function with the implicit foundation level (adjusted general fund budget per pupil) in the General State Aid formula for 2005-06. For the average student, the adjusted general fund budget per pupil in the 2005-06 is between 5% and 24% below our estimated cost to support performance outcomes for 2004 to 2007. Using 2003-04 FTE, the total gap between estimated costs and the adjusted general fund budget ranges from $115 million with 2004 outcomes to $513 million with 2007 outcomes.

The adjusted general fund budget per pupil in the 2005-06 formula exceeds the estimated minimum costs for small districts, and tends to fall below the foundation levels for larger districts with significant shares of disadvantaged students. For the large central cities of Kansas City, Wichita, and Topeka, the adjusted general fund budget per pupil in the present formula is 40 to 70 percent below the estimated minimum costs for these districts to reach performance standards in 2006 and 2007.

Based on these results we conclude that: 1) the overall implicit foundation level (general fund budget) in the General State Aid formula needs to be increased to adequately support the performance outcomes set by the Kansas State Board of Education; and 2) the foundation levels for individual districts should be adjusted to more accurately reflect the estimated costs of reaching these performance outcomes.

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Appendix A : Functional Form of the Cost Function

A cost function for school districts can be represented implicitly in the following function:

$$E = f(S, P, N, Z, D) \quad (1)$$

where *E* represents per pupil spending; *S* is student performance; *P* is the price districts pay for inputs, such as teachers; *N* are measures of district size, *Z* represents student characteristics that affect their educational performance; and *D* represents unobserved district characteristics, such as efficiency. In other words, a cost function measures how much a given change in teacher salaries, student characteristics, or district size affects the required spending to achieve a particular level of student performance.

The functional form of the cost model, represented by *f( )*, is the mathematical function used to capture the technical relationships between school resources, non-school factors, and student performance. Production theory and empirical research in microeconomics provides a foundation for selecting a cost function, but these functions have to be modified to the unique aspects of education production. In selecting the appropriate functional form for an education cost function, we have attempted to strike a balance between functions that are too simplistic to capture education production, with functions that are too complex to provide meaningful results in practice.[37] We start with

[37] One of the most popular flexible cost function used in empirical research is the translog cost function. While this function allows for a range of production technologies, it adds two to three times more variables to the model. Many of these additional variables are interactions between variables, and additional terms to allow for non-linear relationships. It is very likely that many of these variables are highly related to each other, which will make it very difficult to estimate their effects with precision. The result is a flexible cost function with very few results that are statistically significant from zero. See Gronberg, et al. (2004) for an application of the translog function to study costs in Texas.

one of the most common cost functions employed in empirical cost research, the constant elasticity (or Cobb-Douglas) function. This function can be represented as:

$$E = a\ S^{b1}\ P^{b2}\ N^{b3}\ Z^{b4}\ D^{b5}, \qquad (2)$$

where *a* is a constant term, and *b1 – b5* are elasticities measuring the relationship between each variable and spending. For example, *b2* measures the percent change in spending required when teacher salaries increase by 1 percent, holding other variables in the function constant. By taking the natural logarithm (represented by *ln*) of both sides of this equation, it can be re-expressed as a linear function. As a linear function, the following constant elasticity cost function can be easily estimated with standard linear regression techniques;

$$lnE = a + (b1 \times lnS) + (b2 \times lnP) + (b3 \times lnN) + (b4 \times lnZ) + (b5 \times lnD). \qquad (3)$$

Several modifications are commonly made to constant elasticity cost functions for education. First, student need measures, such as the share of students in poverty or requiring bilingual education, are often expressed as a percent of students in this category. Thus, it is not necessary to take the natural log of these variables. Second, we have tested the student need variables for possible non-linear relationships. In the case of bilingual headcount there does not appear to be a non-linear relationship, but for the student poverty measure there appear to be some variation in the effect of poverty based on the urbanization of the district. To account for this we have included in the model the share of free lunch students, and this share interacted with the pupil density in the district (pupils per square mile).

In addition, the relationship between enrollment and per pupil spending has often been found have a nonlinear functional form. Per pupil spending drops quickly as

enrollment increases from very small districts (under 100 students) to a district with 1,000 students as relatively fixed costs, such as administration, can be shared across more students. However, the decline in per pupil operating costs slows down significantly and most cost savings are exhausted by the time a district reaches 1,500 to 2,000 students. Per pupil costs may even go up in very large districts (Andrews, Duncombe, and Yinger, 2001). To capture this potential non-linear relationship we include several variables for different enrollment classes (variable equals 1 if district falls into a particular enrollment class, and 0 otherwise). An alternative approach in the literature has been to include the log of enrollment and the square of the log of enrollment, which imposes a particular functional form (quadratic) on this relationship. We use enrollment classes in the cost model to allow maximum flexibility in modeling the relationship between enrollment and spending.

Appendix B : Expenditure Definitions

Funds That Have Been Included/Excluded From the Cost Function					
	2000	**2001**	**2002**	**2003**	**2004**
FUNDS					
Included	06 – General 07 – Federal 08 – Supp Gen 14 – Bilingual 16 – Cap Outlay 22 – Ext School Prog 26 – Prof Devel 29 – Summer School 35 – Gifts and Grants 44 – School Retirement 53 – Conting Reserve 54 – Student Material 56 – Textbook Rental 20 – Educ Excell 31 – Tech Educ 46 – Disab Income 48 – Health Care Svcs 49 – Group Life Ins 50 – Risk Mgt 52 – Worker's Comp	06 – General 07 – Federal 08 – Supp Gen 14 – Bilingual 16 – Cap Outlay 22 – Ext School Prog 26 – Prof Devel 29 – Summer School 35 – Gifts and Grants 44 – School Retirement 53 – Conting Reserve 54 – Student Material 56 – Textbook Rental 20 – Educ Excell 31 – Tech Educ 46 – Disab Income 48 – Health Care Svcs 49 – Group Life Ins 50 – Risk Mgt 52 – Worker's Comp	06 – General 07 – Federal 08 – Supp Gen 14 – Bilingual 16 – Cap Outlay 22 – Ext School Prog 26 – Prof Devel 29 – Summer School 35 – Gifts and Grants 44 – School Retirement 53 – Conting Reserve 54 – Student Material 56 – Textbook Rental 31 – Tech Educ 46 – Disab Income 48 – Health Care Svcs 50 – Risk Mgt 52 – Worker's Comp	06 – General 07 – Federal 08 – Supp Gen 14 – Bilingual 16 – Cap Outlay 22 – Ext School Prog 26 – Prof Devel 29 – Summer School 35 – Gifts and Grants 44 – School Retirement 53 – Conting Reserve 55 – Text/Student Material 31 – Tech Educ *Note: Funds 46, 48, 49, 50, and 52 were rolled into Fund 47 (Special Reserve). This fund receives transfers from other funds, but those internal transfers are actually shown as expenditures. Therefore, Fund 47 has been excluded (to prevent double counting).*	06 – General 07 – Federal 08 – Supp Gen 14 – Bilingual 16 – Cap Outlay 22 – Ext School Prog 26 – Prof Devel 29 – Summer School 35 – Gifts and Grants 44 – School Retirement 53 – Conting Reserve 55 – Text/Student Material *Note: Funds 46, 48, 49, 50, and 52 were rolled into Fund 47 (Special Reserve). This fund receives transfers from other funds, but those internal transfers are actually shown as expenditures. Therefore, Fund 47 has been excluded (to prevent double counting).*
Excluded	10 – Adult Education 12 – Adult Supp Education 18 – Driver Training 24 – Food Service 28 – Parent Education 30 – Special Education 32 – Transportation 34 – Vocational Education 36 – Area Vocational School 45 – Extraordinary Growth 62 – Bond & Interest #1 63 – Bond & Interest #2 66 – No Fund Warrant 67 – Special Assessment 68 – Temporary Note	10 – Adult Education 12 – Adult Supp Education 18 – Driver Training 24 – Food Service 28 – Parent Education 30 – Special Education 32 – Transportation 34 – Vocational Education 36 – Area Vocational School 45 – Extraordinary Growth 62 – Bond & Interest #1 63 – Bond & Interest #2 66 – No Fund Warrant 67 – Special Assessment 68 – Temporary Note	10 – Adult Education 12 – Adult Supp Education 18 – Driver Training 24 – Food Service 28 – Parent Education 30 – Special Education 32 – Transportation 34 – Vocational Education 36 – Area Vocational School 45 – Extraordinary Growth 62 – Bond & Interest #1 63 – Bond & Interest #2 66 – No Fund Warrant 67 – Special Assessment 78 – Special Ed (Coop) 80 – Historical Museum 82 – Public Library	10 – Adult Education 12 – Adult Supp Education 18 – Driver Training 24 – Food Service 28 – Parent Education 30 – Special Education 32 – Transportation 34 – Vocational Education 36 – Area Vocational School 42 – Special Liability Expense 45 – Extraordinary Growth 47 – Special Reserve Fund 62 – Bond & Interest #1 63 – Bond & Interest #2 66 – No Fund Warrant 67 – Special Assessment 78 – Special Ed (Coop) 80 – Historical Museum 82 – Public Library 83 – Public Library Benefits	10 – Adult Education 12 – Adult Supp Education 18 – Driver Training 24 – Food Service 28 – Parent Education 30 – Special Education 34 – Vocational Education 36 – Area Vocational School 42 – Special Liability Expense 45 – Extraordinary Growth 47 – Special Reserve Fund 51 – KPERS 62 – Bond & Interest #1 63 – Bond & Interest #2 66 – No Fund Warrant 67 – Special Assessment 78 – Special Ed

	78 – Special Ed (Coop) 80 – Historical Museum 82 – Public Library 83 – Public Library Benefits 84 – Recreation Commission 86 – Rec Comm Benefits	78 – Special Ed (Coop) 80 – Historical Museum 82 – Public Library 83 – Public Library Benefits 84 – Recreation Commission 86 – Rec Comm Benefits	83 – Public Library Benefits 84 – Recreation Commission 86 – Rec Comm Benefits	84 – Recreation Commission 86 – Rec Comm Benefits	(Coop) 80 – Historical Museum 82 – Public Library 83 – Public Library Benefits 84 – Recreation Commission 86 – Rec Comm Benefits

Functions and Objects That Have Been Included/Excluded From the Cost Function					
	2000	**2001**	**2002**	**2003**	**2004**
FUNCTIONS					
Included	1000 – Instruction 2100 – Student Support 2200 – Instructional Support 2300 – School Administration 2400 – General Administration 2500 – Business Services 2600 – Operations and Maintenance 2800 – Central Support Services 2900 – Other				
Excluded	2700 – Transportation 3100 – Food Service 3300 – Community Service 4000 – Facilities Acquisition & Construction 5100 – Debt Services 5200 – Internal Transfers				
OBJECTS					
Included	100 – Salaries 200 – Benefits 300 – Professional & Technical Services 400 – Property Services 500 – Other Services 600 – Supplies 700 – Property & Equipment 800 – Other				
Excluded	900 – Internal Transfers				

Appendix C: Statistical Methodology

To estimate a cost function, we use multiple regression methods that have been commonly employed in economics and public policy research. Multiple regression estimates the relationship between an independent variable (e.g., student poverty) and the dependent variable (per pupil costs), controlling for the impact of other variables in the model on the dependent variable. Standard regression estimates can be biased for several reasons, and we have taken several steps to assure that the statistical estimates from multiple regression are accurate. First, we have drawn extensively from the cost function research in education to assure that key variables are included in the model. Among these variables are a range of variables that have been found to be related to differences in school district efficiency. We have also included indicator variables for each year (2000 is the base year) to control for economic factors, such as inflation, and state policy changes that vary across years, but affect all school districts in Kansas.

Standard multiple regression methods are based on the assumption that the direction of causation runs only from independent variables to a dependent variable. Student performance goals, and teacher salaries, are potentially set simultaneously with district spending, as part of the annual budgeting process. To account for the potential simultaneity between these variables, we employ a statistical procedure used frequently in research in economics--two-stage least squares (2SLS) regression. This approach involves the selection of exogenous "instruments" to serve as proxies for the endogenous variables. The predicted value from a first-stage model, where the endogenous variable is

regressed on all exogenous variables in the cost model and the instruments, is used as the proxy for the endogenous variable in the cost function.[38]

In selecting instruments, three criteria are important. First the instrument should be significantly related to the endogenous variable so that it can serve as a good proxy. Second, the instrument, if it is going to remove simultaneity bias, should not be independently correlated with the dependent variable, when the endogenous variable is included in the model. Third, the instrument should ideally be logically related to the endogenous variable. In selecting instruments the first two criteria are mandatory if the instrument is going correct the potential bias. The third criteria, while not mandatory, is desirable because it increases the face validity of the procedure.

In selecting instruments we use characteristics of districts in the same geographic area, which is an approach we have applied in other settings (Duncombe, Lukemeyer, and Yinger, 2003). Specifically, we calculate the average, maximum, and minimum values for school districts in adjacent counties for salaries, outcomes, and socio-economic characteristics. In selecting the final set of instruments, we test the instruments in several ways. First, only instruments that have a statistically significant relationship with the endogenous variable are kept in the analysis. Second, we use an overidentification test (Woolridge, 2003) to examine whether instruments are appropriate. Third, we test the strength of the instruments using a procedure developed by Bound, Jaeger, and Baker, (1995).

The final set of instruments used in the cost model include (for districts in adjacent counties) average salaries, average proficiency on math and reading scores,

[38] While this describes accurately the logic behind two-stage least squares regression, the model is actually estimated with a generalized least squares method, to assure that the standard errors are also unbiased.

maximum graduation rate, maximum per pupil total property values, and maximum per pupil personal property values. The results of the first stage models for the outcome measure, and teacher salaries are displayed in Table C-1.

Table C-1. First Stage Regression Results[a]

	Outcome Measure		Teacher Salaries	
Variables	Coefficients	P-value	Coefficients	P-value
Intercept	5.7234	0.00	7.4318	0.00
Cost variables:				
Percent free lunch students	-0.0053	0.00	-0.0002	0.34
Free lunch multiplied by pupil density	-0.0009	0.00	-0.0001	0.21
Adjusted percent bilingual headcount[c]	-0.0014	0.01	0.0007	0.02
Enrollment categories:				
100 to 150 students	0.0253	0.41	0.0393	0.01
150 to 300 students	0.0214	0.45	0.0965	0.00
300 to 500 students	0.0018	0.95	0.1096	0.00
500 to 750 students	0.0041	0.89	0.1312	0.00
750 to 1,000 students	-0.0236	0.45	0.1590	0.00
1,000 to 1,700 students	-0.0130	0.68	0.1350	0.00
1,700 to 2,500 students	-0.0416	0.21	0.1282	0.00
2,500 to 5,000 students	-0.0372	0.26	0.1460	0.00
5,000 students and above	-0.0328	0.36	0.1629	0.00
Efficiency-related variables:				
Consolidated districts	-0.0248	0.35	0.0049	0.75
Per pupil income[b]	-0.0067	0.72	-0.0055	0.42
Per pupil property values[b]	0.0052	0.70	0.0294	0.00
Total aid/income ratio	0.0721	0.67	0.0539	0.06
Local tax share[b]	-0.0204	0.12	0.0379	0.00
Percent of adults that are college educated (2000)	0.0050	0.00	0.0012	0.00
Percent of population 65 or older	0.0021	0.01	0.0007	0.12
Percent of housing units that are owner occupied (2000)	0.0003	0.71	-0.0002	0.66
Year indicator variables:				
2001	0.0328	0.00	0.0206	0.00
2002	0.0363	0.00	0.0416	0.00
2003	0.0937	0.00	0.0643	0.00
2004	0.1593	0.00	0.0841	0.00
Instruments:[d]				
Average test scores	0.0022	0.02	-0.0006	0.29
Maximum graduation rate	0.4550	0.00	-0.0340	0.64
Average adjusted salary[b]	-0.1992	0.11	0.2614	0.00
Maximum per pupil property values[b]	0.0028	0.67	-0.0114	0.00
Maximum per pupil personal property values[b]	-0.0105	0.01	0.0099	0.00
Adjusted R-square	0.5334		0.5138	
Sample Size	1468		1496	

[a]Estimated with OLS regression. Log of adjusted salaries and outcome index are the dependent variables. Data is for 1999-2000 to 2003-04.

[b]Measured as natural logarithm.

[c]Calculated by first regressing the share of bilingual headcount on the Census measure of poor English (with no intercept). The predicted value from this regression is used as the estimate of the share of bilingual headcount, except in those districts where the share bilingual headcount is greater than zero. See text for more details.

[d]Calculated for districts in adjacent counties.

Another potential source of bias, which is less serious, is in the measures of variation in the coefficients, the standard errors. The assumption in standard regression

models is that the residuals in the regression are statistically independent of each other. This assumption is violated if residuals for the same school district are correlated across time (autocorrelation), or residuals for a cross section of districts are correlated (heteroskedasticity). We take steps to remove both types of bias. First, indicator variables are included for each year to remove factors specific to one-year that might lead to correlations across years.[39] Second, robust standard errors are used to eliminate potential bias to the standard errors caused by heteroskedasticity.

[39] Time series methods are available for instrumental variable models, which can eliminate autocorrelation. However, using these methods removes one year of data from the analysis. With only five years of data, we felt that serial correlation problems are less serious than the reduced accuracy of the model by losing 1 year of data.

Appendix D: Cost Indices for Kansas Districts

District Number	District Name	Overall Cost Index	Poverty Cost Index	Teacher Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
Average		100.7	100.3	100.1	100.7	100.0
101	ERIE-ST PAUL	93.1	103.2	101.2	89.5	99.6
102	CIMARRON-ENSIGN	99.0	96.6	104.4	97.1	101.1
103	CHEYLIN	110.3	102.5	95.8	112.9	99.4
104	WHITE ROCK	116.9	101.7	86.9	133.2	99.4
105	RAWLINS COUNTY	97.5	98.1	97.0	103.1	99.4
106	WESTERN PLAINS	107.6	99.1	96.7	112.9	99.4
200	GREELEY COUNTY SCHOOLS	118.9	103.8	99.1	112.9	102.4
202	TURNER-KANSAS CITY	98.2	110.4	103.6	85.9	100.0
203	PIPER-KANSAS CITY	82.7	86.4	107.0	89.5	99.9
204	BONNER SPRINGS	86.0	96.8	103.3	85.5	100.6
205	BLUESTEM	91.5	93.3	101.3	97.1	99.7
206	REMINGTON-WHITEWATER	91.6	93.4	101.6	97.1	99.4
207	FT LEAVENWORTH	75.1	86.3	102.4	85.5	99.4
208	WAKEENEY	94.6	95.1	97.1	103.1	99.4
209	MOSCOW PUBLIC SCHOOLS	128.7	103.5	106.3	112.9	103.6
210	HUGOTON PUBLIC SCHOOLS	103.9	105.0	109.2	89.5	101.2
211	NORTON COMMUNITY SCHOOLS	94.9	97.4	101.0	97.1	99.4
212	NORTHERN VALLEY	112.0	104.0	95.8	112.9	99.4
213	WEST SOLOMON VALLEY SCHOOLS	127.4	97.1	85.8	151.6	100.9
214	ULYSSES	97.7	106.2	106.3	85.5	101.2
215	LAKIN	109.7	103.3	108.0	97.1	101.2
216	DEERFIELD	127.5	111.8	104.7	103.1	105.7
217	ROLLA	135.1	112.0	103.9	112.9	102.8
218	ELKHART	103.3	97.6	107.5	97.1	101.3
219	MINNEOLA	117.2	103.6	99.2	112.9	101.0
220	ASHLAND	111.2	101.4	97.6	112.9	99.4
221	NORTH CENTRAL	113.5	100.2	85.6	133.2	99.4
222	WASHINGTON SCHOOLS	93.6	95.0	95.7	103.1	100.0
223	BARNES	97.5	100.9	94.2	103.1	99.4
224	CLIFTON-CLYDE	96.3	98.7	94.2	103.1	100.4
225	FOWLER	129.6	112.5	100.6	112.9	101.4
226	MEADE	96.8	96.0	103.8	97.1	99.9
227	JETMORE	106.0	95.8	98.5	112.9	99.4
228	HANSTON	135.4	102.0	88.1	151.6	99.4
229	BLUE VALLEY	85.5	85.2	115.6	87.2	99.6
230	SPRING HILL	84.0	88.9	105.6	89.5	99.9
231	GARDNER-EDGERTON-ANTIOCH	83.6	92.2	106.1	85.9	99.5

District Number	District Name	Overall Cost Index	Poverty Cost Index	Teacher Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
232	DE SOTO	84.2	89.4	109.8	85.9	99.8
233	OLATHE	88.1	90.9	111.2	87.2	100.0
234	FORT SCOTT	91.0	107.1	99.8	85.5	99.5
235	UNIONTOWN	108.3	107.4	97.9	103.1	99.9
237	SMITH CENTER	99.8	100.3	97.1	103.1	99.4
238	WEST SMITH COUNTY	110.6	101.5	97.1	112.9	99.4
239	NORTH OTTAWA COUNTY	94.5	97.3	99.5	97.1	100.5
240	TWIN VALLEY	89.8	92.6	100.5	97.1	99.4
241	WALLACE COUNTY SCHOOLS	107.5	100.3	95.4	112.9	99.4
242	WESKAN	126.1	102.1	93.3	133.2	99.4
243	LEBO-WAVERLY	95.2	97.3	101.0	97.1	99.7
244	BURLINGTON	95.2	97.1	101.7	96.1	100.3
245	LEROY-GRIDLEY	97.9	98.8	96.7	103.1	99.4
246	NORTHEAST	107.6	111.1	100.3	97.1	99.4
247	CHEROKEE	100.7	101.9	103.2	96.1	99.7
248	GIRARD	89.9	98.2	102.8	89.5	99.4
249	FRONTENAC PUBLIC SCHOOLS	97.5	97.9	103.1	97.1	99.4
250	PITTSBURG	99.5	114.1	101.8	85.5	100.3
251	NORTH LYON COUNTY	94.1	98.8	98.3	97.1	99.7
252	SOUTHERN LYON COUNTY	91.1	95.2	98.8	97.1	99.7
253	EMPORIA	100.2	112.1	101.8	85.9	102.2
254	BARBER COUNTY NORTH	93.9	95.3	101.7	97.1	99.7
255	SOUTH BARBER	108.2	98.6	97.7	112.9	99.4
256	MARMATON VALLEY	103.2	103.5	96.8	103.1	99.9
257	IOLA	92.2	104.9	98.8	89.5	99.4
258	HUMBOLDT	97.0	102.2	97.8	97.1	99.8
259	WICHITA	121.4	133.9	103.0	87.2	101.0
260	DERBY	92.0	98.6	107.4	87.2	99.7
261	HAYSVILLE	90.5	102.4	103.1	85.9	99.8
262	VALLEY CENTER PUBLIC SCHOOLS	81.7	92.3	103.9	85.5	99.6
263	MULVANE	81.8	93.9	102.4	85.5	99.4
264	CLEARWATER	84.1	90.3	104.6	89.5	99.4
265	GODDARD	81.7	89.9	106.5	85.9	99.4
266	MAIZE	83.7	87.8	109.8	87.2	99.6
267	RENWICK	78.5	88.8	103.8	85.5	99.5
268	CHENEY	88.9	88.8	103.4	97.1	99.7
269	PALCO	109.9	100.8	97.1	112.9	99.4
270	PLAINVILLE	102.8	99.5	99.6	103.1	100.6
271	STOCKTON	100.3	99.5	98.3	103.1	99.4
272	WACONDA	98.2	100.1	94.9	103.1	100.3
273	BELOIT	92.2	94.4	101.9	96.1	99.7
274	OAKLEY	102.7	102.2	98.1	103.1	99.4

District Number	District Name	Overall Cost Index	Poverty Cost Index	Teacher Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
275	TRIPLAINS	129.4	100.3	85.6	151.6	99.4
278	MANKATO	108.7	101.5	94.6	112.9	100.3
279	JEWELL	110.1	103.1	94.1	112.9	100.5
281	HILL CITY	101.5	101.2	97.8	103.1	99.4
282	WEST ELK	106.4	107.7	96.4	103.1	99.4
283	ELK VALLEY	129.4	119.4	95.6	112.9	100.4
284	CHASE COUNTY	102.3	102.1	97.7	103.1	99.4
285	CEDAR VALE	117.3	108.9	95.9	112.9	99.4
286	CHAUTAUQUA COUNTY COMMUNITY SCHOOLS	105.1	105.6	97.1	103.1	99.4
287	WEST FRANKLIN	98.3	99.3	103.6	96.1	99.5
288	CENTRAL HEIGHTS	93.9	96.5	100.1	97.1	100.1
289	WELLSVILLE	90.3	91.2	103.6	96.1	99.4
290	OTTAWA	86.5	100.6	100.8	85.5	99.7
291	GRINNELL PUBLIC SCHOOLS	110.4	91.7	91.0	133.2	99.4
292	WHEATLAND	108.0	100.3	95.8	112.9	99.4
293	QUINTER PUBLIC SCHOOLS	97.6	94.9	100.4	103.1	99.4
294	OBERLIN	98.1	97.3	98.1	103.1	99.8
295	PRAIRIE HEIGHTS	124.5	97.4	84.8	151.6	99.4
297	ST FRANCIS COMMUNITY SCHOOLS	102.5	100.2	99.4	103.1	99.9
298	LINCOLN	104.0	103.7	97.9	103.1	99.4
299	SYLVAN GROVE	116.3	107.3	96.6	112.9	99.4
300	COMANCHE COUNTY	104.1	95.2	96.8	112.9	100.1
303	NESS CITY	102.7	94.7	96.6	112.9	99.4
305	SALINA	96.8	106.3	104.5	87.2	100.0
306	SOUTHEAST OF SALINE	90.4	90.0	103.7	97.1	99.7
307	ELL-SALINE	97.6	94.5	100.3	103.1	99.9
308	HUTCHINSON PUBLIC SCHOOLS	101.7	118.6	100.3	85.9	99.5
309	NICKERSON	94.2	104.2	101.6	89.5	99.4
310	FAIRFIELD	107.5	107.9	96.8	103.1	99.8
311	PRETTY PRAIRIE	95.4	93.0	100.2	103.1	99.4
312	HAVEN PUBLIC SCHOOLS	86.6	95.4	101.7	89.5	99.6
313	BUHLER	84.1	95.6	103.5	85.5	99.5
314	BREWSTER	117.7	99.0	89.9	133.2	99.4
315	COLBY PUBLIC SCHOOLS	86.2	96.0	100.8	89.5	99.5
316	GOLDEN PLAINS	117.1	109.6	94.5	112.9	100.1
320	WAMEGO	85.0	93.0	102.8	89.5	99.4
321	KAW VALLEY	84.0	94.5	99.5	89.5	99.8
322	ONAGA-HAVENSVILLE-WHEATON	94.1	93.9	97.8	103.1	99.4
323	ROCK CREEK	93.0	94.7	101.5	97.1	99.7
324	EASTERN HEIGHTS	115.8	96.9	90.2	133.2	99.4
325	PHILLIPSBURG	95.1	95.9	102.4	97.1	99.7

District Number	District Name	Overall Cost Index	Poverty Cost Index	Teacher Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
326	LOGAN	112.1	102.6	97.4	112.9	99.4
327	ELLSWORTH	93.3	95.7	100.5	97.1	99.8
328	LORRAINE	101.1	101.9	96.5	103.1	99.8
329	MILL CREEK VALLEY	93.6	92.4	98.1	103.1	100.2
330	WABAUNSEE EAST	95.4	95.1	97.6	103.1	99.8
331	KINGMAN - NORWICH	92.0	100.1	103.1	89.5	99.6
332	CUNNINGHAM	107.4	97.8	96.7	112.9	100.6
333	CONCORDIA	92.4	105.4	98.3	89.5	99.6
334	SOUTHERN CLOUD	110.4	105.4	92.6	112.9	100.1
335	NORTH JACKSON	96.6	96.2	98.0	103.1	99.4
336	HOLTON	85.9	94.3	102.3	89.5	99.4
337	ROYAL VALLEY	98.5	99.2	103.7	96.1	99.6
338	VALLEY FALLS	97.5	94.3	100.9	103.1	99.4
339	JEFFERSON COUNTY NORTH	96.5	93.8	100.5	103.1	99.4
340	JEFFERSON WEST	93.4	91.9	106.3	96.1	99.4
341	OSKALOOSA PUBLIC SCHOOLS	99.0	99.8	102.7	97.1	99.4
342	MCLOUTH	92.5	93.0	103.0	97.1	99.4
343	PERRY PUBLIC SCHOOLS	96.6	94.8	106.7	96.1	99.4
344	PLEASANTON	109.5	108.6	98.0	103.1	99.9
345	SEAMAN	81.8	92.3	103.1	85.9	100.1
346	JAYHAWK	100.9	102.4	101.6	97.1	99.8
347	KINSLEY-OFFERLE	105.9	104.6	97.3	103.1	101.0
348	BALDWIN CITY	85.5	90.2	105.9	89.5	100.0
349	STAFFORD	106.7	108.5	96.0	103.1	99.4
350	ST JOHN-HUDSON	110.0	108.7	98.2	103.1	100.0
351	MACKSVILLE	111.5	112.0	96.0	103.1	100.6
352	GOODLAND	100.9	102.3	101.9	96.1	100.8
353	WELLINGTON	91.5	105.6	101.6	85.5	99.6
354	CLAFLIN	93.6	91.6	99.7	103.1	99.4
355	ELLINWOOD PUBLIC SCHOOLS	96.5	98.4	101.1	97.1	99.8
356	CONWAY SPRINGS	92.4	93.2	102.6	97.1	99.4
357	BELLE PLAINE	103.6	102.9	105.4	96.1	99.4
358	OXFORD	95.8	93.1	100.5	103.1	99.4
359	ARGONIA PUBLIC SCHOOLS	117.5	107.1	97.7	112.9	99.4
360	CALDWELL	116.8	104.6	98.3	112.9	100.6
361	ANTHONY-HARPER	103.8	105.7	102.8	96.1	99.4
362	PRAIRIE VIEW	94.5	95.3	103.6	96.1	99.6
363	HOLCOMB	103.6	101.0	106.0	96.1	100.7
364	MARYSVILLE	93.9	96.4	101.1	96.1	100.2
365	GARNETT	90.7	102.6	99.1	89.5	99.6
366	WOODSON	99.8	105.3	97.8	97.1	99.8
367	OSAWATOMIE	96.5	106.6	101.7	89.5	99.4

District Number	District Name	Overall Cost Index	Poverty Cost Index	Teacher Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
368	PAOLA	84.4	94.9	104.4	85.5	99.7
369	BURRTON	116.3	105.2	97.7	112.9	100.2
371	MONTEZUMA	117.8	100.9	100.7	112.9	102.5
372	SILVER LAKE	88.5	86.6	103.7	97.1	101.4
373	NEWTON	94.3	105.1	104.5	85.9	99.9
374	SUBLETTE	113.2	101.5	105.5	103.1	102.6
375	CIRCLE	86.5	94.9	102.3	89.5	99.6
376	STERLING	98.2	100.1	101.2	97.1	99.8
377	ATCHISON COUNTY COMMUNITY SCHOOLS	93.9	95.8	100.7	97.1	100.2
378	RILEY COUNTY	88.1	90.4	100.8	97.1	99.4
379	CLAY CENTER	87.3	98.4	99.3	89.5	99.7
380	VERMILLION	90.6	94.7	98.1	97.1	100.4
381	SPEARVILLE	91.5	89.4	99.8	103.1	99.4
382	PRATT	90.6	100.2	101.3	89.5	99.6
383	MANHATTAN	87.3	95.6	105.1	87.2	99.7
384	BLUE VALLEY	98.9	91.7	96.0	112.9	99.4
385	ANDOVER	81.9	88.5	108.3	85.9	99.5
386	MADISON-VIRGIL	110.2	101.4	95.3	112.9	100.9
387	ALTOONA-MIDWAY	115.3	107.1	95.2	112.9	100.1
388	ELLIS	97.2	96.0	98.8	103.1	99.4
389	EUREKA	97.4	103.3	97.6	97.1	99.4
390	HAMILTON	128.0	106.8	89.1	133.2	101.0
392	OSBORNE COUNTY	103.8	103.0	98.0	103.1	99.8
393	SOLOMON	100.6	99.0	98.7	103.1	99.9
394	ROSE HILL PUBLIC SCHOOLS	79.3	90.7	102.6	85.5	99.7
395	LACROSSE	101.6	102.4	96.8	103.1	99.4
396	DOUGLASS PUBLIC SCHOOLS	94.9	95.6	103.9	96.1	99.4
397	CENTRE	106.2	98.7	95.9	112.9	99.4
398	PEABODY-BURNS	99.2	98.7	97.7	103.1	99.9
399	PARADISE	112.3	106.0	94.3	112.9	99.4
400	SMOKY VALLEY	91.8	90.3	106.2	96.1	99.6
401	CHASE-RAYMOND	114.9	108.9	94.0	112.9	99.4
402	AUGUSTA	83.4	97.0	101.1	85.5	99.4
403	OTIS-BISON	111.6	103.3	95.6	112.9	100.1
404	RIVERTON	107.3	106.2	105.0	96.1	100.1
405	LYONS	115.0	115.5	102.8	96.1	100.9
406	WATHENA	95.8	93.7	99.2	103.1	100.0
407	RUSSELL COUNTY	99.8	101.6	102.8	96.1	99.4
408	MARION	96.6	99.0	101.1	97.1	99.4
409	ATCHISON PUBLIC SCHOOLS	100.5	111.7	101.0	89.5	99.5

District Number	District Name	Overall Cost Index	Poverty Cost Index	Teacher Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
410	DURHAM-HILLSBORO-LEHIGH	95.3	93.9	103.4	97.1	101.0
411	GOESSEL	101.1	89.1	100.4	112.9	100.1
412	HOXIE COMMUNITY SCHOOLS	92.8	92.3	97.7	103.1	99.8
413	CHANUTE PUBLIC SCHOOLS	90.7	106.3	100.1	85.5	99.7
415	HIAWATHA	101.4	102.3	103.7	96.1	99.4
416	LOUISBURG	82.9	88.4	105.4	89.5	99.4
417	MORRIS COUNTY	97.9	99.9	101.8	96.1	100.1
418	MCPHERSON	81.2	93.5	102.0	85.5	99.5
419	CANTON-GALVA	93.3	92.6	98.3	103.1	99.5
420	OSAGE CITY	95.8	98.9	100.3	97.1	99.4
421	LYNDON	95.2	95.2	97.7	103.1	99.4
422	GREENSBURG	102.1	99.1	99.7	103.1	100.2
423	MOUNDRIDGE	92.6	90.3	100.0	103.1	99.4
424	MULLINVILLE	111.8	99.3	98.7	112.9	101.0
425	HIGHLAND	104.5	95.6	97.3	112.9	99.4
426	PIKE VALLEY	106.9	102.8	92.0	112.9	100.1
427	REPUBLIC COUNTY	95.9	100.0	93.6	103.1	99.4
428	GREAT BEND	99.1	111.9	102.3	85.9	100.8
429	TROY PUBLIC SCHOOLS	98.3	97.2	98.7	103.1	99.4
430	SOUTH BROWN COUNTY	104.6	108.4	99.4	97.1	100.0
431	HOISINGTON	98.1	101.8	99.8	97.1	99.4
432	VICTORIA	99.1	89.5	98.6	112.9	99.4
433	MIDWAY SCHOOLS	108.5	100.2	96.5	112.9	99.4
434	SANTA FE TRAIL	87.2	98.2	99.6	89.5	99.6
435	ABILENE	90.1	99.7	101.5	89.5	99.4
436	CANEY VALLEY	102.2	101.9	104.8	96.1	99.6
437	AUBURN WASHBURN	83.7	92.1	106.1	85.9	99.6
438	SKYLINE SCHOOLS	96.5	94.5	99.1	103.1	99.9
439	SEDGWICK PUBLIC SCHOOLS	91.6	92.8	102.3	97.1	99.4
440	HALSTEAD	96.1	97.1	102.0	97.1	100.0
441	SABETHA	93.9	93.9	103.9	96.1	100.1
442	NEMAHA VALLEY SCHOOLS	93.6	92.0	99.0	103.1	99.8
443	DODGE CITY	118.8	120.1	106.9	87.2	106.2
444	LITTLE RIVER	99.3	92.6	95.5	112.9	99.4
445	COFFEYVILLE	97.7	113.8	100.5	85.5	100.0
446	INDEPENDENCE	92.5	106.7	101.4	85.5	100.0
447	CHERRYVALE	104.1	107.3	100.5	97.1	99.4
448	INMAN	94.1	90.8	100.6	103.1	99.8
449	EASTON	94.1	91.2	105.4	97.1	100.8
450	SHAWNEE HEIGHTS	82.3	92.5	104.1	85.9	99.5
451	B & B	104.6	96.4	96.6	112.9	99.4
452	STANTON COUNTY	120.2	107.3	106.1	103.1	102.4

District Number	District Name	Overall Cost Index	Poverty Cost Index	Teacher Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
453	LEAVENWORTH	100.7	113.5	103.4	85.9	99.9
454	BURLINGAME	97.8	97.7	97.1	103.1	100.0
455	HILLCREST RURAL SCHOOLS	125.7	112.1	84.7	133.2	99.4
456	MARAIS DES CYGNES VALLEY	119.0	112.0	94.2	112.9	99.9
457	GARDEN CITY	110.2	113.8	107.7	87.2	103.2
458	BASEHOR-LINWOOD	77.4	86.9	104.3	85.5	99.8
459	BUCKLIN	109.9	100.1	96.6	112.9	100.5
460	HESSTON	95.1	91.0	109.1	96.1	99.7
461	NEODESHA	100.6	101.7	102.8	96.1	100.1
462	CENTRAL	99.6	98.2	98.5	103.1	99.9
463	UDALL	101.6	100.2	98.9	103.1	99.4
464	TONGANOXIE	84.8	90.7	104.4	89.5	100.0
465	WINFIELD	92.0	102.0	104.9	85.9	100.1
466	SCOTT COUNTY	100.1	97.7	105.9	96.1	100.8
467	LEOTI	106.2	99.6	100.7	103.1	102.6
468	HEALY PUBLIC SCHOOLS	124.3	100.0	93.3	133.2	100.0
469	LANSING	77.7	87.0	104.6	85.5	99.8
470	ARKANSAS CITY	100.9	113.7	102.6	85.9	100.7
471	DEXTER	112.4	102.3	97.8	112.9	99.4
473	CHAPMAN	87.7	96.6	101.8	89.5	99.6
474	HAVILAND	111.9	101.6	98.1	112.9	99.4
475	GEARY COUNTY SCHOOLS	96.6	106.6	103.7	87.2	100.2
476	COPELAND	151.0	111.9	94.7	133.2	107.1
477	INGALLS	120.0	101.7	101.3	112.9	103.2
479	CREST	106.9	101.7	93.6	112.9	99.4
480	LIBERAL	114.8	119.2	107.3	85.9	104.4
481	RURAL VISTA	99.7	100.0	97.3	103.1	99.4
482	DIGHTON	107.8	99.7	96.3	112.9	99.4
483	KISMET-PLAINS	121.0	116.1	104.3	97.1	102.8
484	FREDONIA	102.9	107.6	99.1	97.1	99.4
486	ELWOOD	109.2	108.8	97.2	103.1	100.2
487	HERINGTON	96.1	99.2	99.9	97.1	99.8
488	AXTELL	92.6	94.5	95.6	103.1	99.4
489	HAYS	86.2	96.2	104.6	85.9	99.7
490	EL DORADO	85.9	102.0	98.9	85.5	99.5
491	EUDORA	85.7	93.0	103.6	89.5	99.4
492	FLINTHILLS	95.9	92.4	99.7	103.1	100.9
493	COLUMBUS	95.5	106.5	100.8	89.5	99.4
494	SYRACUSE	122.1	112.0	103.0	103.1	102.7
495	FT LARNED	99.3	101.1	102.8	96.1	99.4
496	PAWNEE HEIGHTS	106.7	98.5	96.4	112.9	99.4
497	LAWRENCE	92.2	96.8	109.4	87.2	100.0
498	VALLEY HEIGHTS	97.2	99.3	95.5	103.1	99.4

District Number	District Name	Overall Cost Index	Poverty Cost Index	Teacher Salary Cost Index	Enrollment Cost Index	Bilingual Cost Index
499	GALENA	119.4	122.1	101.7	96.1	100.1
500	KANSAS CITY	135.9	149.4	102.3	87.2	102.0
501	TOPEKA PUBLIC SCHOOLS	116.5	133.3	100.4	87.2	99.8
502	LEWIS	125.2	104.1	89.9	133.2	100.4
503	PARSONS	99.5	112.3	99.6	89.5	99.4
504	OSWEGO	102.8	106.3	100.1	97.1	99.4
505	CHETOPA	137.8	128.5	95.5	112.9	99.4
506	LABETTE COUNTY	91.7	98.8	103.9	89.5	99.9
507	SATANTA	120.3	104.8	107.2	103.1	103.8
508	BAXTER SPRINGS	106.8	107.9	103.4	96.1	99.7
509	SOUTH HAVEN	106.3	97.2	97.4	112.9	99.4
511	ATTICA	127.4	105.1	91.6	133.2	99.4
512	SHAWNEE MISSION PUBLIC SCHOOLS	89.1	92.2	110.9	87.2	100.1

Appendix E: Pupil Weights for Kansas Districts

District Number	District Name	Poverty (Free Lunch) Weight	Bilingual Weight	Enrollment Weight
District Average		0.707	0.139	0.178
101	ERIE-ST PAUL	0.707	0.139	0.047
102	CIMARRON-ENSIGN	0.682	0.140	0.136
103	CHEYLIN	0.703		0.321
104	WHITE ROCK	0.700		0.557
105	RAWLINS COUNTY	0.687		0.205
106	WESTERN PLAINS	0.691		0.321
200	GREELEY COUNTY SCHOOLS	0.708	0.141	0.321
202	TURNER-KANSAS CITY	0.888	0.139	0.005
203	PIPER-KANSAS CITY	0.671	0.139	0.047
204	BONNER SPRINGS	0.722	0.139	0.000
205	BLUESTEM	0.671	0.139	0.136
206	REMINGTON-WHITEWATER	0.671		0.136
207	FT LEAVENWORTH	0.783		0.000
208	WAKEENEY	0.676		0.205
209	MOSCOW PUBLIC SCHOOLS	0.707	0.141	0.321
210	HUGOTON PUBLIC SCHOOLS	0.713	0.140	0.047
211	NORTON COMMUNITY SCHOOLS	0.686		0.136
212	NORTHERN VALLEY	0.709		0.321
213	WEST SOLOMON VALLEY SCHOOLS	0.683	0.140	0.773
214	ULYSSES	0.718	0.140	0.000
215	LAKIN	0.706	0.140	0.136
216	DEERFIELD	0.736	0.143	0.205
217	ROLLA	0.736	0.141	0.321
218	ELKHART	0.687	0.140	0.136
219	MINNEOLA	0.707	0.140	0.321
220	ASHLAND	0.699		0.321
221	NORTH CENTRAL	0.695		0.557
222	WASHINGTON SCHOOLS	0.677	0.139	0.205
223	BARNES	0.698		0.205
224	CLIFTON-CLYDE	0.690	0.139	0.205
225	FOWLER	0.738	0.140	0.321
226	MEADE	0.680	0.139	0.136
227	JETMORE	0.679		0.321
228	HANSTON	0.701		0.773
229	BLUE VALLEY	0.770	0.139	0.019
230	SPRING HILL	0.668	0.139	0.047
231	GARDNER-EDGERTON-ANTIOCH	0.687	0.139	0.005
232	DE SOTO	0.684	0.139	0.005
233	OLATHE	0.856	0.139	0.019
234	FORT SCOTT	0.724	0.139	0.000

District Number	District Name	Poverty (Free Lunch) Weight	Bilingual Weight	Enrollment Weight
235	UNIONTOWN	0.721	0.139	0.205
237	SMITH CENTER	0.696		0.205
238	WEST SMITH COUNTY	0.700		0.321
239	NORTH OTTAWA COUNTY	0.685	0.139	0.136
240	TWIN VALLEY	0.669		0.136
241	WALLACE COUNTY SCHOOLS	0.695		0.321
242	WESKAN	0.702		0.557
243	LEBO-WAVERLY	0.686	0.139	0.136
244	BURLINGTON	0.687	0.139	0.123
245	LEROY-GRIDLEY	0.691		0.205
246	NORTHEAST	0.737		0.136
247	CHEROKEE	0.703	0.139	0.123
248	GIRARD	0.690		0.047
249	FRONTENAC PUBLIC SCHOOLS	0.709		0.136
250	PITTSBURG	0.786	0.139	0.000
251	NORTH LYON COUNTY	0.690	0.139	0.136
252	SOUTHERN LYON COUNTY	0.678	0.139	0.136
253	EMPORIA	0.762	0.141	0.005
254	BARBER COUNTY NORTH	0.678	0.139	0.136
255	SOUTH BARBER	0.689		0.321
256	MARMATON VALLEY	0.707	0.139	0.205
257	IOLA	0.718	0.139	0.047
258	HUMBOLDT	0.705	0.139	0.136
259	WICHITA	1.058	0.140	0.019
260	DERBY	0.779	0.139	0.019
261	HAYSVILLE	0.790	0.139	0.005
262	VALLEY CENTER PUBLIC SCHOOLS	0.685	0.139	0.000
263	MULVANE	0.687		0.000
264	CLEARWATER	0.665		0.047
265	GODDARD	0.697		0.005
266	MAIZE	0.736	0.139	0.019
267	RENWICK	0.659	0.139	0.000
268	CHENEY	0.657	0.139	0.136
269	PALCO	0.697		0.321
270	PLAINVILLE	0.693	0.139	0.205
271	STOCKTON	0.693		0.205
272	WACONDA	0.695	0.139	0.205
273	BELOIT	0.675	0.139	0.123
274	OAKLEY	0.702		0.205
275	TRIPLAINS	0.695		0.773
278	MANKATO	0.700	0.139	0.321
279	JEWELL	0.705	0.139	0.321
281	HILL CITY	0.698		0.205
282	WEST ELK	0.722		0.205

District Number	District Name	Poverty (Free Lunch) Weight	Bilingual Weight	Enrollment Weight
283	ELK VALLEY	0.762	0.139	0.321
284	CHASE COUNTY	0.702		0.205
285	CEDAR VALE	0.726		0.321
286	CHAUTAUQUA COUNTY COMMUNITY SCHOOLS	0.715		0.205
287	WEST FRANKLIN	0.694	0.139	0.123
288	CENTRAL HEIGHTS	0.684	0.139	0.136
289	WELLSVILLE	0.666		0.123
290	OTTAWA	0.710	0.139	0.000
291	GRINNELL PUBLIC SCHOOLS	0.664		0.557
292	WHEATLAND	0.695		0.321
293	QUINTER PUBLIC SCHOOLS	0.676		0.205
294	OBERLIN	0.684	0.139	0.205
295	PRAIRIE HEIGHTS	0.685		0.773
297	ST FRANCIS COMMUNITY SCHOOLS	0.695	0.139	0.205
298	LINCOLN	0.707		0.205
299	SYLVAN GROVE	0.720		0.321
300	COMANCHE COUNTY	0.677	0.139	0.321
303	NESS CITY	0.675		0.321
305	SALINA	0.773	0.139	0.019
306	SOUTHEAST OF SALINE	0.659	0.139	0.136
307	ELL-SALINE	0.675	0.139	0.205
308	HUTCHINSON PUBLIC SCHOOLS	1.018	0.139	0.005
309	NICKERSON	0.713		0.047
310	FAIRFIELD	0.722	0.139	0.205
311	PRETTY PRAIRIE	0.669		0.205
312	HAVEN PUBLIC SCHOOLS	0.680	0.139	0.047
313	BUHLER	0.689	0.139	0.000
314	BREWSTER	0.690		0.557
315	COLBY PUBLIC SCHOOLS	0.681	0.139	0.047
316	GOLDEN PLAINS	0.728	0.139	0.321
320	WAMEGO	0.673		0.047
321	KAW VALLEY	0.676	0.139	0.047
322	ONAGA-HAVENSVILLE-WHEATON	0.673		0.205
323	ROCK CREEK	0.677	0.139	0.136
324	EASTERN HEIGHTS	0.683		0.557
325	PHILLIPSBURG	0.680	0.139	0.136
326	LOGAN	0.703		0.321
327	ELLSWORTH	0.679	0.139	0.136
328	LORRAINE	0.701	0.139	0.205
329	MILL CREEK VALLEY	0.667	0.139	0.205
330	WABAUNSEE EAST	0.677	0.139	0.205
331	KINGMAN - NORWICH	0.696	0.139	0.047
332	CUNNINGHAM	0.686	0.139	0.321
333	CONCORDIA	0.715	0.139	0.047

District Number	District Name	Poverty (Free Lunch) Weight	Bilingual Weight	Enrollment Weight
334	SOUTHERN CLOUD	0.714	0.139	0.321
335	NORTH JACKSON	0.682		0.205
336	HOLTON	0.678		0.047
337	ROYAL VALLEY	0.695	0.139	0.123
338	VALLEY FALLS	0.676		0.205
339	JEFFERSON COUNTY NORTH	0.674		0.205
340	JEFFERSON WEST	0.674		0.123
341	OSKALOOSA PUBLIC SCHOOLS	0.698		0.136
342	MCLOUTH	0.673		0.136
343	PERRY PUBLIC SCHOOLS	0.680		0.123
344	PLEASANTON	0.727	0.139	0.205
345	SEAMAN	0.692	0.139	0.005
346	JAYHAWK	0.704	0.139	0.136
347	KINSLEY-OFFERLE	0.711	0.140	0.205
348	BALDWIN CITY	0.665	0.139	0.047
349	STAFFORD	0.725		0.205
350	ST JOHN-HUDSON	0.725	0.139	0.205
351	MACKSVILLE	0.737	0.139	0.205
352	GOODLAND	0.703	0.140	0.123
353	WELLINGTON	0.719	0.139	0.000
354	CLAFLIN	0.665		0.205
355	ELLINWOOD PUBLIC SCHOOLS	0.690	0.139	0.136
356	CONWAY SPRINGS	0.672		0.136
357	BELLE PLAINE	0.711		0.123
358	OXFORD	0.671		0.205
359	ARGONIA PUBLIC SCHOOLS	0.720		0.321
360	CALDWELL	0.711	0.139	0.321
361	ANTHONY-HARPER	0.715		0.123
362	PRAIRIE VIEW	0.679	0.139	0.123
363	HOLCOMB	0.700	0.139	0.123
364	MARYSVILLE	0.683	0.139	0.123
365	GARNETT	0.705	0.139	0.047
366	WOODSON	0.713	0.139	0.136
367	OSAWATOMIE	0.725		0.047
368	PAOLA	0.682	0.139	0.000
369	BURRTON	0.714	0.139	0.321
371	MONTEZUMA	0.698	0.141	0.321
372	SILVER LAKE	0.650	0.140	0.136
373	NEWTON	0.731	0.139	0.005
374	SUBLETTE	0.700	0.141	0.205
375	CIRCLE	0.681	0.139	0.047
376	STERLING	0.697	0.139	0.136
377	ATCHISON COUNTY COMMUNITY SCHOOLS	0.680	0.139	0.136
378	RILEY COUNTY	0.662		0.136

District Number	District Name	Poverty (Free Lunch) Weight	Bilingual Weight	Enrollment Weight
379	CLAY CENTER	0.690	0.139	0.047
380	VERMILLION	0.675	0.139	0.136
381	SPEARVILLE	0.657		0.205
382	PRATT	0.698	0.139	0.047
383	MANHATTAN	0.700	0.139	0.019
384	BLUE VALLEY	0.664		0.321
385	ANDOVER	0.700	0.139	0.005
386	MADISON-VIRGIL	0.700	0.140	0.321
387	ALTOONA-MIDWAY	0.720	0.139	0.321
388	ELLIS	0.680		0.205
389	EUREKA	0.706		0.136
390	HAMILTON	0.718	0.140	0.557
392	OSBORNE COUNTY	0.705	0.139	0.205
393	SOLOMON	0.692	0.139	0.205
394	ROSE HILL PUBLIC SCHOOLS	0.682	0.139	0.000
395	LACROSSE	0.703		0.205
396	DOUGLASS PUBLIC SCHOOLS	0.683		0.123
397	CENTRE	0.690		0.321
398	PEABODY-BURNS	0.690	0.139	0.205
399	PARADISE	0.715		0.321
400	SMOKY VALLEY	0.660	0.139	0.123
401	CHASE-RAYMOND	0.726		0.321
402	AUGUSTA	0.704		0.000
403	OTIS-BISON	0.706	0.139	0.321
404	RIVERTON	0.726	0.139	0.123
405	LYONS	0.753	0.140	0.123
406	WATHENA	0.674	0.139	0.205
407	RUSSELL COUNTY	0.700		0.123
408	MARION	0.692		0.136
409	ATCHISON PUBLIC SCHOOLS	0.757	0.139	0.047
410	DURHAM-HILLSBORO-LEHIGH	0.674	0.140	0.136
411	GOESSEL	0.656	0.139	0.321
412	HOXIE COMMUNITY SCHOOLS	0.666	0.139	0.205
413	CHANUTE PUBLIC SCHOOLS	0.727	0.139	0.000
415	HIAWATHA	0.704		0.123
416	LOUISBURG	0.658		0.047
417	MORRIS COUNTY	0.695	0.139	0.123
418	MCPHERSON	0.681	0.139	0.000
419	CANTON-GALVA	0.669	0.139	0.205
420	OSAGE CITY	0.694		0.136
421	LYNDON	0.679		0.205
422	GREENSBURG	0.691	0.139	0.205
423	MOUNDRIDGE	0.660		0.205
424	MULLINVILLE	0.692	0.140	0.321

District Number	District Name	Poverty (Free Lunch) Weight	Bilingual Weight	Enrollment Weight
425	HIGHLAND	0.680		0.321
426	PIKE VALLEY	0.705	0.139	0.321
427	REPUBLIC COUNTY	0.695		0.205
428	GREAT BEND	0.748	0.140	0.005
429	TROY PUBLIC SCHOOLS	0.687		0.205
430	SOUTH BROWN COUNTY	0.726	0.139	0.136
431	HOISINGTON	0.702		0.136
432	VICTORIA	0.657		0.321
433	MIDWAY SCHOOLS	0.696		0.321
434	SANTA FE TRAIL	0.692	0.139	0.047
435	ABILENE	0.702		0.047
436	CANEY VALLEY	0.704	0.139	0.123
437	AUBURN WASHBURN	0.692	0.139	0.005
438	SKYLINE SCHOOLS	0.675	0.139	0.205
439	SEDGWICK PUBLIC SCHOOLS	0.676		0.136
440	HALSTEAD	0.687	0.139	0.136
441	SABETHA	0.674	0.139	0.123
442	NEMAHA VALLEY SCHOOLS	0.668	0.139	0.205
443	DODGE CITY	0.773	0.143	0.019
444	LITTLE RIVER	0.668		0.321
445	COFFEYVILLE	0.754	0.139	0.000
446	INDEPENDENCE	0.724	0.139	0.000
447	CHERRYVALE	0.724		0.136
448	INMAN	0.663	0.139	0.205
449	EASTON	0.666	0.140	0.136
450	SHAWNEE HEIGHTS	0.683	0.139	0.005
451	B & B	0.682		0.321
452	STANTON COUNTY	0.720	0.141	0.205
453	LEAVENWORTH	0.920	0.139	0.005
454	BURLINGAME	0.689	0.139	0.205
455	HILLCREST RURAL SCHOOLS	0.737		0.557
456	MARAIS DES CYGNES VALLEY	0.737	0.139	0.321
457	GARDEN CITY	0.748	0.141	0.019
458	BASEHOR-LINWOOD	0.661	0.139	0.000
459	BUCKLIN	0.695	0.139	0.321
460	HESSTON	0.670	0.139	0.123
461	NEODESHA	0.705	0.139	0.123
462	CENTRAL	0.688	0.139	0.205
463	UDALL	0.696		0.205
464	TONGANOXIE	0.667	0.139	0.047
465	WINFIELD	0.708	0.139	0.005
466	SCOTT COUNTY	0.686	0.140	0.123
467	LEOTI	0.693	0.141	0.205
468	HEALY PUBLIC SCHOOLS	0.694	0.139	0.557

District Number	District Name	Poverty (Free Lunch) Weight	Bilingual Weight	Enrollment Weight
469	LANSING	0.674	0.139	0.000
470	ARKANSAS CITY	0.752	0.139	0.005
471	DEXTER	0.703		0.321
473	CHAPMAN	0.683	0.139	0.047
474	HAVILAND	0.700		0.321
475	GEARY COUNTY SCHOOLS	0.734	0.139	0.019
476	COPELAND	0.736	0.144	0.557
477	INGALLS	0.700	0.141	0.321
479	CREST	0.701		0.321
480	LIBERAL	0.777	0.142	0.005
481	RURAL VISTA	0.695		0.205
482	DIGHTON	0.693		0.321
483	KISMET-PLAINS	0.751	0.141	0.136
484	FREDONIA	0.722		0.136
486	ELWOOD	0.751	0.139	0.205
487	HERINGTON	0.695	0.139	0.136
488	AXTELL	0.675		0.205
489	HAYS	0.686	0.139	0.005
490	EL DORADO	0.713	0.139	0.000
491	EUDORA	0.684		0.047
492	FLINTHILLS	0.667	0.140	0.205
493	COLUMBUS	0.719		0.047
494	SYRACUSE	0.736	0.141	0.205
495	FT LARNED	0.699		0.123
496	PAWNEE HEIGHTS	0.689		0.321
497	LAWRENCE	0.720	0.139	0.019
498	VALLEY HEIGHTS	0.693		0.205
499	GALENA	0.814	0.139	0.123
500	KANSAS CITY	1.147	0.140	0.019
501	TOPEKA PUBLIC SCHOOLS	1.121	0.139	0.019
502	LEWIS	0.709	0.139	0.557
503	PARSONS	0.759		0.047
504	OSWEGO	0.725		0.136
505	CHETOPA	0.796		0.321
506	LABETTE COUNTY	0.692	0.139	0.047
507	SATANTA	0.712	0.142	0.205
508	BAXTER SPRINGS	0.745	0.139	0.123
509	SOUTH HAVEN	0.685		0.321
511	ATTICA	0.712		0.557
512	SHAWNEE MISSION PUBLIC SCHOOLS	0.931	0.139	0.019

Appendix F: Adjusted General Fund Budget Per Pupil in 2005-06 and, Estimated Costs to Meet Performance Outcomes In Kansas Districts (All amounts in 2003-04 dollars)

District Number	District Name	Adjusted General Fund Budget Per Pupil for 2005-06[a]	Estimated Cost Per Pupil To Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
			2004	2006	2007	2004	2006	2007
Simple Average		$5,826	$5,208	$5,668	$6,120	-9.2	-1.1	6.8
Pupil Weighted Average		$4,856	$5,113	$5,565	$6,009	6.4	15.8	25.0
Total Spending (millions)		$2,159	$2,273	$2,474	$2,671			
Total Spending Increase (millions)			$115	$315	$513	5.3	14.6	23.8
101	ERIE-ST PAUL	$5,076	$4,815	$5,241	$5,659	-5.1	3.2	11.5
102	CIMARRON-ENSIGN	$5,816	$5,119	$5,572	$6,016	-12.0	-4.2	3.4
103	CHEYLIN	$7,700	$5,701	$6,205	$6,700	-26.0	-19.4	-13.0
104	WHITE ROCK	$8,006	$6,045	$6,579	$7,104	-24.5	-17.8	-11.3
105	RAWLINS COUNTY	$7,567	$5,042	$5,487	$5,925	-33.4	-27.5	-21.7
106	WESTERN PLAINS	$8,175	$5,561	$6,052	$6,535	-32.0	-26.0	-20.1
200	GREELEY COUNTY SCHOOLS	$6,524	$6,149	$6,692	$7,227	-5.7	2.6	10.8
202	TURNER-KANSAS CITY	$4,459	$5,079	$5,527	$5,968	13.9	23.9	33.8
203	PIPER-KANSAS CITY	$4,437	$4,275	$4,653	$5,024	-3.6	4.9	13.2
204	BONNER SPRINGS	$4,335	$4,444	$4,837	$5,223	2.5	11.6	20.5
205	BLUESTEM	$5,544	$4,732	$5,150	$5,561	-14.6	-7.1	0.3
206	REMINGTON-WHITEWATER	$5,813	$4,736	$5,154	$5,566	-18.5	-11.3	-4.2
207	FT LEAVENWORTH	$4,237	$3,885	$4,228	$4,565	-8.3	-0.2	7.8
208	WAKEENEY	$6,003	$4,889	$5,321	$5,746	-18.6	-11.4	-4.3
209	MOSCOW PUBLIC SCHOOLS	$7,269	$6,653	$7,240	$7,818	-8.5	-0.4	7.5
210	HUGOTON PUBLIC SCHOOLS	$5,292	$5,369	$5,844	$6,310	1.5	10.4	19.2
211	NORTON COMMUNITY SCHOOLS	$5,641	$4,909	$5,343	$5,769	-13.0	-5.3	2.3
212	NORTHERN VALLEY	$7,372	$5,788	$6,299	$6,802	-21.5	-14.5	-7.7
213	WEST SOLOMON VALLEY	$8,349	$6,585	$7,166	$7,738	-21.1	-14.2	-7.3

District Number	District Name	Adjusted General Fund Budget Per Pupil for 2005-06[a]	Estimated Cost Per Pupil To Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
			2004	2006	2007	2004	2006	2007
	SCHOOLS							
214	ULYSSES	$4,538	$5,050	$5,496	$5,934	11.3	21.1	30.8
215	LAKIN	$5,795	$5,670	$6,170	$6,663	-2.2	6.5	15.0
216	DEERFIELD	$6,751	$6,594	$7,176	$7,748	-2.3	6.3	14.8
217	ROLLA	$7,451	$6,985	$7,601	$8,208	-6.3	2.0	10.2
218	ELKHART	$5,846	$5,342	$5,813	$6,277	-8.6	-0.6	7.4
219	MINNEOLA	$6,532	$6,061	$6,596	$7,123	-7.2	1.0	9.0
220	ASHLAND	$7,132	$5,749	$6,257	$6,756	-19.4	-12.3	-5.3
221	NORTH CENTRAL	$8,085	$5,867	$6,385	$6,894	-27.4	-21.0	-14.7
222	WASHINGTON SCHOOLS	$6,034	$4,840	$5,267	$5,688	-19.8	-12.7	-5.7
223	BARNES	$6,057	$5,039	$5,484	$5,921	-16.8	-9.5	-2.2
224	CLIFTON-CLYDE	$6,122	$4,980	$5,420	$5,852	-18.7	-11.5	-4.4
225	FOWLER	$7,697	$6,701	$7,292	$7,874	-12.9	-5.3	2.3
226	MEADE	$5,918	$5,005	$5,446	$5,881	-15.4	-8.0	-0.6
227	JETMORE	$6,161	$5,480	$5,964	$6,440	-11.0	-3.2	4.5
228	HANSTON	$8,319	$7,003	$7,621	$8,230	-15.8	-8.4	-1.1
229	BLUE VALLEY	$4,446	$4,420	$4,810	$5,194	-0.6	8.2	16.8
230	SPRING HILL	$4,244	$4,345	$4,729	$5,106	2.4	11.4	20.3
231	GARDNER-EDGERTON-ANTIOCH	$4,320	$4,324	$4,705	$5,081	0.1	8.9	17.6
232	DE SOTO	$4,451	$4,353	$4,738	$5,116	-2.2	6.5	14.9
233	OLATHE	$4,851	$4,556	$4,958	$5,354	-6.1	2.2	10.4
234	FORT SCOTT	$4,419	$4,705	$5,121	$5,529	6.5	15.9	25.1
235	UNIONTOWN	$6,041	$5,598	$6,092	$6,579	-7.3	0.9	8.9
237	SMITH CENTER	$5,975	$5,162	$5,618	$6,066	-13.6	-6.0	1.5
238	WEST SMITH COUNTY	$7,436	$5,717	$6,222	$6,719	-23.1	-16.3	-9.6
239	NORTH OTTAWA COUNTY	$5,797	$4,886	$5,317	$5,741	-15.7	-8.3	-1.0
240	TWIN VALLEY	$5,627	$4,645	$5,055	$5,459	-17.4	-10.2	-3.0
241	WALLACE COUNTY SCHOOLS	$7,022	$5,556	$6,047	$6,530	-20.9	-13.9	-7.0
242	WESKAN	$7,980	$6,521	$7,097	$7,664	-18.3	-11.1	-4.0
243	LEBO-WAVERLY	$5,754	$4,922	$5,357	$5,784	-14.5	-6.9	0.5
244	BURLINGTON	$5,398	$4,923	$5,357	$5,785	-8.8	-0.8	7.2
245	LEROY-GRIDLEY	$6,494	$5,061	$5,508	$5,948	-22.1	-15.2	-8.4
246	NORTHEAST	$5,973	$5,563	$6,054	$6,538	-6.9	1.4	9.5
247	CHEROKEE	$5,528	$5,208	$5,668	$6,121	-5.8	2.5	10.7
248	GIRARD	$5,169	$4,647	$5,057	$5,461	-10.1	-2.2	5.6

District Number	District Name	Adjusted General Fund Budget Per Pupil for 2005-06[a]	Estimated Cost Per Pupil To Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
			2004	2006	2007	2004	2006	2007
249	FRONTENAC PUBLIC SCHOOLS	$5,475	$5,041	$5,486	$5,924	-7.9	0.2	8.2
250	PITTSBURG	$4,664	$5,146	$5,600	$6,047	10.3	20.1	29.7
251	NORTH LYON COUNTY	$5,724	$4,863	$5,292	$5,715	-15.0	-7.5	-0.2
252	SOUTHERN LYON COUNTY	$5,716	$4,708	$5,124	$5,533	-17.6	-10.4	-3.2
253	EMPORIA	$4,779	$5,178	$5,635	$6,085	8.3	17.9	27.3
254	BARBER COUNTY NORTH	$5,726	$4,856	$5,285	$5,706	-15.2	-7.7	-0.4
255	SOUTH BARBER	$6,520	$5,594	$6,088	$6,574	-14.2	-6.6	0.8
256	MARMATON VALLEY	$6,092	$5,335	$5,806	$6,270	-12.4	-4.7	2.9
257	IOLA	$4,704	$4,767	$5,187	$5,601	1.3	10.3	19.1
258	HUMBOLDT	$5,867	$5,013	$5,456	$5,891	-14.6	-7.0	0.4
259	WICHITA	$4,789	$6,276	$6,830	$7,375	31.0	42.6	54.0
260	DERBY	$4,298	$4,757	$5,177	$5,590	10.7	20.5	30.1
261	HAYSVILLE	$4,310	$4,678	$5,091	$5,498	8.5	18.1	27.6
262	VALLEY CENTER PUBLIC SCHOOLS	$4,229	$4,223	$4,596	$4,963	-0.1	8.7	17.4
263	MULVANE	$4,234	$4,230	$4,603	$4,971	-0.1	8.7	17.4
264	CLEARWATER	$5,085	$4,348	$4,732	$5,110	-14.5	-6.9	0.5
265	GODDARD	$4,179	$4,226	$4,599	$4,966	1.1	10.0	18.8
266	MAIZE	$4,194	$4,326	$4,708	$5,084	3.1	12.3	21.2
267	RENWICK	$4,171	$4,056	$4,414	$4,767	-2.8	5.8	14.3
268	CHENEY	$5,455	$4,595	$5,001	$5,400	-15.8	-8.3	-1.0
269	PALCO	$7,864	$5,684	$6,186	$6,680	-27.7	-21.3	-15.1
270	PLAINVILLE	$6,073	$5,314	$5,783	$6,245	-12.5	-4.8	2.8
271	STOCKTON	$6,119	$5,186	$5,643	$6,094	-15.3	-7.8	-0.4
272	WACONDA	$6,104	$5,079	$5,528	$5,969	-16.8	-9.4	-2.2
273	BELOIT	$5,473	$4,765	$5,185	$5,599	-12.9	-5.3	2.3
274	OAKLEY	$6,073	$5,312	$5,781	$6,242	-12.5	-4.8	2.8
275	TRIPLAINS	$8,310	$6,691	$7,282	$7,863	-19.5	-12.4	-5.4
278	MANKATO	$6,959	$5,619	$6,116	$6,604	-19.3	-12.1	-5.1
279	JEWELL	$7,614	$5,691	$6,193	$6,688	-25.3	-18.7	-12.2
281	HILL CITY	$7,271	$5,245	$5,709	$6,164	-27.9	-21.5	-15.2
282	WEST ELK	$6,122	$5,501	$5,987	$6,464	-10.1	-2.2	5.6
283	ELK VALLEY	$7,255	$6,691	$7,282	$7,863	-7.8	0.4	8.4
284	CHASE COUNTY	$5,958	$5,289	$5,756	$6,216	-11.2	-3.4	4.3
285	CEDAR VALE	$7,674	$6,066	$6,601	$7,128	-21.0	-14.0	-7.1
286	CHAUTAUQUA COUNTY COMMUNITY	$6,060	$5,436	$5,916	$6,388	-10.3	-2.4	5.4

District Number	District Name	Adjusted General Fund Budget Per Pupil for 2005-06[a]	Estimated Cost Per Pupil To Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
			2004	2006	2007	2004	2006	2007
	SCHOOLS							
287	WEST FRANKLIN	$5,377	$5,082	$5,531	$5,973	-5.5	2.9	11.1
288	CENTRAL HEIGHTS	$5,662	$4,855	$5,284	$5,706	-14.3	-6.7	0.8
289	WELLSVILLE	$5,369	$4,667	$5,079	$5,484	-13.1	-5.4	2.1
290	OTTAWA	$4,319	$4,470	$4,865	$5,253	3.5	12.6	21.6
291	GRINNELL PUBLIC SCHOOLS	$7,976	$5,709	$6,213	$6,709	-28.4	-22.1	-15.9
292	WHEATLAND	$7,409	$5,583	$6,076	$6,561	-24.6	-18.0	-11.4
293	QUINTER PUBLIC SCHOOLS	$6,054	$5,047	$5,492	$5,931	-16.6	-9.3	-2.0
294	OBERLIN	$5,996	$5,073	$5,521	$5,962	-15.4	-7.9	-0.6
295	PRAIRIE HEIGHTS	$8,238	$6,439	$7,008	$7,567	-21.8	-14.9	-8.1
297	ST FRANCIS COMMUNITY SCHOOLS	$6,127	$5,298	$5,766	$6,226	-13.5	-5.9	1.6
298	LINCOLN	$6,354	$5,378	$5,853	$6,320	-15.4	-7.9	-0.5
299	SYLVAN GROVE	$7,645	$6,015	$6,546	$7,068	-21.3	-14.4	-7.5
300	COMANCHE COUNTY	$6,140	$5,381	$5,856	$6,323	-12.4	-4.6	3.0
303	NESS CITY	$6,508	$5,310	$5,779	$6,240	-18.4	-11.2	-4.1
305	SALINA	$4,411	$5,007	$5,449	$5,884	13.5	23.5	33.4
306	SOUTHEAST OF SALINE	$5,541	$4,674	$5,087	$5,493	-15.6	-8.2	-0.9
307	ELL-SALINE	$5,859	$5,048	$5,494	$5,932	-13.8	-6.2	1.2
308	HUTCHINSON PUBLIC SCHOOLS	$4,440	$5,258	$5,722	$6,179	18.4	28.9	39.2
309	NICKERSON	$5,130	$4,872	$5,302	$5,725	-5.0	3.4	11.6
310	FAIRFIELD	$6,192	$5,559	$6,050	$6,533	-10.2	-2.3	5.5
311	PRETTY PRAIRIE	$6,043	$4,935	$5,370	$5,799	-18.3	-11.1	-4.0
312	HAVEN PUBLIC SCHOOLS	$5,085	$4,475	$4,870	$5,259	-12.0	-4.2	3.4
313	BUHLER	$4,271	$4,350	$4,734	$5,112	1.9	10.8	19.7
314	BREWSTER	$7,892	$6,087	$6,624	$7,153	-22.9	-16.1	-9.4
315	COLBY PUBLIC SCHOOLS	$5,150	$4,458	$4,851	$5,238	-13.4	-5.8	1.7
316	GOLDEN PLAINS	$7,563	$6,056	$6,591	$7,117	-19.9	-12.9	-5.9
320	WAMEGO	$4,741	$4,397	$4,785	$5,167	-7.2	0.9	9.0
321	KAW VALLEY	$5,133	$4,344	$4,727	$5,105	-15.4	-7.9	-0.5
322	ONAGA-HAVENSVILLE-WHEATON	$6,026	$4,864	$5,293	$5,716	-19.3	-12.2	-5.2
323	ROCK CREEK	$5,419	$4,809	$5,233	$5,651	-11.3	-3.4	4.3

District Number	District Name	Adjusted General Fund Budget Per Pupil for 2005-06[a]	Estimated Cost Per Pupil To Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
			2004	2006	2007	2004	2006	2007
324	EASTERN HEIGHTS	$7,788	$5,985	$6,513	$7,033	-23.2	-16.4	-9.7
325	PHILLIPSBURG	$5,698	$4,915	$5,349	$5,776	-13.7	-6.1	1.4
326	LOGAN	$7,326	$5,796	$6,308	$6,812	-20.9	-13.9	-7.0
327	ELLSWORTH	$5,702	$4,822	$5,247	$5,666	-15.4	-8.0	-0.6
328	LORRAINE	$6,027	$5,227	$5,688	$6,142	-13.3	-5.6	1.9
329	MILL CREEK VALLEY	$5,874	$4,838	$5,266	$5,686	-17.6	-10.4	-3.2
330	WABAUNSEE EAST	$5,833	$4,935	$5,370	$5,799	-15.4	-7.9	-0.6
331	KINGMAN - NORWICH	$5,039	$4,758	$5,178	$5,591	-5.6	2.8	11.0
332	CUNNINGHAM	$6,802	$5,551	$6,042	$6,524	-18.4	-11.2	-4.1
333	CONCORDIA	$5,140	$4,776	$5,198	$5,612	-7.1	1.1	9.2
334	SOUTHERN CLOUD	$6,907	$5,709	$6,213	$6,709	-17.4	-10.1	-2.9
335	NORTH JACKSON	$5,953	$4,995	$5,436	$5,870	-16.1	-8.7	-1.4
336	HOLTON	$5,006	$4,440	$4,832	$5,217	-11.3	-3.5	4.2
337	ROYAL VALLEY	$5,331	$5,094	$5,544	$5,986	-4.4	4.0	12.3
338	VALLEY FALLS	$5,918	$5,041	$5,487	$5,924	-14.8	-7.3	0.1
339	JEFFERSON COUNTY NORTH	$5,874	$4,992	$5,433	$5,866	-15.0	-7.5	-0.1
340	JEFFERSON WEST	$5,180	$4,827	$5,253	$5,673	-6.8	1.4	9.5
341	OSKALOOSA PUBLIC SCHOOLS	$5,732	$5,117	$5,568	$6,013	-10.7	-2.9	4.9
342	MCLOUTH	$5,729	$4,783	$5,205	$5,621	-16.5	-9.1	-1.9
343	PERRY PUBLIC SCHOOLS	$5,174	$4,997	$5,438	$5,872	-3.4	5.1	13.5
344	PLEASANTON	$6,089	$5,662	$6,162	$6,654	-7.0	1.2	9.3
345	SEAMAN	$4,231	$4,228	$4,601	$4,968	-0.1	8.8	17.4
346	JAYHAWK	$5,818	$5,215	$5,676	$6,129	-10.4	-2.5	5.3
347	KINSLEY-OFFERLE	$6,355	$5,476	$5,959	$6,435	-13.8	-6.2	1.3
348	BALDWIN CITY	$4,656	$4,420	$4,810	$5,194	-5.1	3.3	11.6
349	STAFFORD	$6,260	$5,518	$6,006	$6,485	-11.8	-4.1	3.6
350	ST JOHN-HUDSON	$6,110	$5,689	$6,192	$6,686	-6.9	1.3	9.4
351	MACKSVILLE	$6,338	$5,765	$6,274	$6,775	-9.0	-1.0	6.9
352	GOODLAND	$5,415	$5,219	$5,679	$6,133	-3.6	4.9	13.3
353	WELLINGTON	$4,708	$4,729	$5,147	$5,558	0.5	9.3	18.0
354	CLAFLIN	$6,113	$4,838	$5,265	$5,685	-20.9	-13.9	-7.0
355	ELLINWOOD PUBLIC SCHOOLS	$5,869	$4,987	$5,427	$5,860	-15.0	-7.5	-0.1

District Number	District Name	Adjusted General Fund Budget Per Pupil for 2005-06[a]	Estimated Cost Per Pupil To Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
			2004	2006	2007	2004	2006	2007
356	CONWAY SPRINGS	$5,769	$4,777	$5,198	$5,613	-17.2	-9.9	-2.7
357	BELLE PLAINE	$5,564	$5,355	$5,828	$6,293	-3.8	4.7	13.1
358	OXFORD	$5,979	$4,955	$5,392	$5,823	-17.1	-9.8	-2.6
359	ARGONIA PUBLIC SCHOOLS	$7,238	$6,076	$6,612	$7,140	-16.1	-8.6	-1.4
360	CALDWELL	$6,194	$6,041	$6,574	$7,099	-2.5	6.1	14.6
361	ANTHONY-HARPER	$5,408	$5,368	$5,842	$6,308	-0.7	8.0	16.6
362	PRAIRIE VIEW	$5,144	$4,885	$5,316	$5,741	-5.0	3.3	11.6
363	HOLCOMB	$5,473	$5,356	$5,829	$6,294	-2.1	6.5	15.0
364	MARYSVILLE	$5,489	$4,853	$5,281	$5,703	-11.6	-3.8	3.9
365	GARNETT	$5,131	$4,690	$5,104	$5,511	-8.6	-0.5	7.4
366	WOODSON	$5,936	$5,159	$5,614	$6,062	-13.1	-5.4	2.1
367	OSAWATOMIE	$5,099	$4,988	$5,428	$5,862	-2.2	6.5	15.0
368	PAOLA	$4,247	$4,364	$4,750	$5,129	2.8	11.8	20.8
369	BURRTON	$6,689	$6,011	$6,542	$7,064	-10.1	-2.2	5.6
371	MONTEZUMA	$6,992	$6,090	$6,628	$7,157	-12.9	-5.2	2.4
372	SILVER LAKE	$5,429	$4,574	$4,978	$5,375	-15.7	-8.3	-1.0
373	NEWTON	$4,407	$4,876	$5,306	$5,730	10.6	20.4	30.0
374	SUBLETTE	$6,244	$5,855	$6,372	$6,881	-6.2	2.1	10.2
375	CIRCLE	$4,460	$4,472	$4,867	$5,255	0.3	9.1	17.8
376	STERLING	$5,889	$5,078	$5,527	$5,968	-13.8	-6.2	1.3
377	ATCHISON COUNTY COMMUNITY SCHOOLS	$5,570	$4,854	$5,283	$5,704	-12.9	-5.2	2.4
378	RILEY COUNTY	$5,598	$4,553	$4,955	$5,350	-18.7	-11.5	-4.4
379	CLAY CENTER	$4,635	$4,512	$4,911	$5,303	-2.7	5.9	14.4
380	VERMILLION	$5,765	$4,685	$5,099	$5,506	-18.7	-11.6	-4.5
381	SPEARVILLE	$5,975	$4,732	$5,150	$5,561	-20.8	-13.8	-6.9
382	PRATT	$5,042	$4,682	$5,095	$5,502	-7.1	1.1	9.1
383	MANHATTAN	$4,293	$4,514	$4,912	$5,304	5.1	14.4	23.6
384	BLUE VALLEY	$6,647	$5,111	$5,563	$6,007	-23.1	-16.3	-9.6
385	ANDOVER	$4,197	$4,236	$4,611	$4,978	1.0	9.9	18.6
386	MADISON-VIRGIL	$6,676	$5,697	$6,200	$6,695	-14.7	-7.1	0.3
387	ALTOONA-MIDWAY	$6,848	$5,960	$6,486	$7,004	-13.0	-5.3	2.3
388	ELLIS	$6,030	$5,024	$5,468	$5,905	-16.7	-9.3	-2.1
389	EUREKA	$5,707	$5,035	$5,479	$5,916	-11.8	-4.0	3.7
390	HAMILTON	$8,236	$6,618	$7,203	$7,778	-19.6	-12.5	-5.6
392	OSBORNE COUNTY	$6,069	$5,368	$5,842	$6,308	-11.5	-3.7	3.9

District Number	District Name	Adjusted General Fund Budget Per Pupil for 2005-06[a]	Estimated Cost Per Pupil To Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
			2004	2006	2007	2004	2006	2007
393	SOLOMON	$6,009	$5,201	$5,660	$6,111	-13.5	-5.8	1.7
394	ROSE HILL PUBLIC SCHOOLS	$4,187	$4,102	$4,465	$4,821	-2.0	6.6	15.1
395	LACROSSE	$6,149	$5,252	$5,715	$6,171	-14.6	-7.1	0.4
396	DOUGLASS PUBLIC SCHOOLS	$5,394	$4,905	$5,338	$5,765	-9.1	-1.0	6.9
397	CENTRE	$6,226	$5,493	$5,978	$6,455	-11.8	-4.0	3.7
398	PEABODY-BURNS	$6,018	$5,130	$5,583	$6,028	-14.8	-7.2	0.2
399	PARADISE	$7,842	$5,805	$6,318	$6,822	-26.0	-19.4	-13.0
400	SMOKY VALLEY	$5,151	$4,744	$5,163	$5,575	-7.9	0.2	8.2
401	CHASE-RAYMOND	$7,750	$5,943	$6,468	$6,984	-23.3	-16.5	-9.9
402	AUGUSTA	$4,274	$4,312	$4,693	$5,067	0.9	9.8	18.5
403	OTIS-BISON	$6,908	$5,768	$6,277	$6,778	-16.5	-9.1	-1.9
404	RIVERTON	$5,500	$5,547	$6,037	$6,518	0.9	9.8	18.5
405	LYONS	$5,733	$5,948	$6,473	$6,990	3.7	12.9	21.9
406	WATHENA	$6,005	$4,952	$5,389	$5,819	-17.5	-10.3	-3.1
407	RUSSELL COUNTY	$5,228	$5,159	$5,615	$6,063	-1.3	7.4	16.0
408	MARION	$5,695	$4,996	$5,437	$5,871	-12.3	-4.5	3.1
409	ATCHISON PUBLIC SCHOOLS	$4,785	$5,196	$5,654	$6,106	8.6	18.2	27.6
410	DURHAM-HILLSBORO-LEHIGH	$5,601	$4,925	$5,360	$5,788	-12.1	-4.3	3.3
411	GOESSEL	$6,221	$5,229	$5,691	$6,145	-15.9	-8.5	-1.2
412	HOXIE COMMUNITY SCHOOLS	$6,059	$4,797	$5,220	$5,637	-20.8	-13.8	-7.0
413	CHANUTE PUBLIC SCHOOLS	$4,378	$4,690	$5,104	$5,512	7.1	16.6	25.9
415	HIAWATHA	$5,346	$5,243	$5,706	$6,161	-1.9	6.7	15.2
416	LOUISBURG	$4,422	$4,289	$4,667	$5,040	-3.0	5.5	14.0
417	MORRIS COUNTY	$5,397	$5,060	$5,507	$5,947	-6.2	2.0	10.2
418	MCPHERSON	$4,244	$4,198	$4,568	$4,933	-1.1	7.6	16.2
419	CANTON-GALVA	$5,947	$4,824	$5,250	$5,669	-18.9	-11.7	-4.7
420	OSAGE CITY	$5,559	$4,953	$5,390	$5,820	-10.9	-3.0	4.7
421	LYNDON	$5,907	$4,924	$5,359	$5,787	-16.6	-9.3	-2.0
422	GREENSBURG	$6,143	$5,276	$5,742	$6,201	-14.1	-6.5	0.9
423	MOUNDRIDGE	$5,880	$4,786	$5,209	$5,624	-18.6	-11.4	-4.3
424	MULLINVILLE	$7,834	$5,780	$6,290	$6,792	-26.2	-19.7	-13.3
425	HIGHLAND	$6,563	$5,403	$5,880	$6,349	-17.7	-10.4	-3.3
426	PIKE VALLEY	$6,617	$5,527	$6,016	$6,496	-16.5	-9.1	-1.8

District Number	District Name	Adjusted General Fund Budget Per Pupil for 2005-06[a]	Estimated Cost Per Pupil To Meet Performance Outcomes In:			Percent Difference Between Estimated Costs and Adjusted General Fund Budget Per Pupil		
			2004	2006	2007	2004	2006	2007
427	REPUBLIC COUNTY	$5,947	$4,960	$5,398	$5,829	-16.6	-9.2	-2.0
428	GREAT BEND	$4,571	$5,125	$5,578	$6,023	12.1	22.0	31.8
429	TROY PUBLIC SCHOOLS	$5,997	$5,084	$5,533	$5,974	-15.2	-7.7	-0.4
430	SOUTH BROWN COUNTY	$5,832	$5,408	$5,886	$6,355	-7.3	0.9	9.0
431	HOISINGTON	$5,763	$5,073	$5,521	$5,962	-12.0	-4.2	3.5
432	VICTORIA	$6,362	$5,125	$5,578	$6,023	-19.4	-12.3	-5.3
433	MIDWAY SCHOOLS	$7,138	$5,610	$6,106	$6,593	-21.4	-14.5	-7.6
434	SANTA FE TRAIL	$4,848	$4,511	$4,909	$5,301	-7.0	1.3	9.3
435	ABILENE	$4,641	$4,656	$5,067	$5,472	0.3	9.2	17.9
436	CANEY VALLEY	$5,408	$5,286	$5,753	$6,212	-2.3	6.4	14.9
437	AUBURN WASHBURN	$4,233	$4,326	$4,708	$5,084	2.2	11.2	20.1
438	SKYLINE SCHOOLS	$5,990	$4,991	$5,432	$5,866	-16.7	-9.3	-2.1
439	SEDGWICK PUBLIC SCHOOLS	$5,754	$4,738	$5,157	$5,568	-17.7	-10.4	-3.2
440	HALSTEAD	$5,584	$4,968	$5,407	$5,839	-11.0	-3.2	4.6
441	SABETHA	$5,255	$4,855	$5,284	$5,706	-7.6	0.6	8.6
442	NEMAHA VALLEY SCHOOLS	$5,788	$4,841	$5,268	$5,689	-16.4	-9.0	-1.7
443	DODGE CITY	$5,067	$6,140	$6,682	$7,215	21.2	31.9	42.4
444	LITTLE RIVER	$6,296	$5,136	$5,590	$6,036	-18.4	-11.2	-4.1
445	COFFEYVILLE	$4,989	$5,052	$5,498	$5,937	1.3	10.2	19.0
446	INDEPENDENCE	$4,404	$4,780	$5,203	$5,618	8.5	18.1	27.6
447	CHERRYVALE	$5,860	$5,381	$5,856	$6,323	-8.2	-0.1	7.9
448	INMAN	$5,875	$4,864	$5,293	$5,715	-17.2	-9.9	-2.7
449	EASTON	$5,492	$4,864	$5,294	$5,716	-11.4	-3.6	4.1
450	SHAWNEE HEIGHTS	$4,245	$4,256	$4,632	$5,001	0.3	9.1	17.8
451	B & B	$6,909	$5,408	$5,885	$6,355	-21.7	-14.8	-8.0
452	STANTON COUNTY	$6,242	$6,214	$6,763	$7,303	-0.4	8.3	17.0
453	LEAVENWORTH	$4,415	$5,206	$5,666	$6,118	17.9	28.3	38.6
454	BURLINGAME	$6,069	$5,056	$5,503	$5,942	-16.7	-9.3	-2.1
455	HILLCREST RURAL SCHOOLS	$8,195	$6,498	$7,072	$7,636	-20.7	-13.7	-6.8
456	MARAIS DES CYGNES VALLEY	$6,678	$6,152	$6,695	$7,229	-7.9	0.3	8.3
457	GARDEN CITY	$4,703	$5,699	$6,202	$6,697	21.2	31.9	42.4
458	BASEHOR-	$4,144	$4,002	$4,356	$4,703	-3.4	5.1	13.5

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			2004	2006	2007	2004	2006	2007
	LINWOOD							
459	BUCKLIN	$6,607	$5,680	$6,181	$6,675	-14.0	-6.4	1.0
460	HESSTON	$5,428	$4,917	$5,351	$5,778	-9.4	-1.4	6.5
461	NEODESHA	$5,589	$5,199	$5,658	$6,110	-7.0	1.2	9.3
462	CENTRAL	$6,088	$5,150	$5,604	$6,051	-15.4	-8.0	-0.6
463	UDALL	$6,057	$5,250	$5,714	$6,170	-13.3	-5.7	1.9
464	TONGANOXIE	$4,228	$4,385	$4,772	$5,153	3.7	12.9	21.9
465	WINFIELD	$4,386	$4,758	$5,178	$5,591	8.5	18.0	27.5
466	SCOTT COUNTY	$5,707	$5,177	$5,634	$6,084	-9.3	-1.3	6.6
467	LEOTI	$6,202	$5,489	$5,973	$6,450	-11.5	-3.7	4.0
468	HEALY PUBLIC SCHOOLS	$8,217	$6,424	$6,992	$7,550	-21.8	-14.9	-8.1
469	LANSING	$4,147	$4,015	$4,369	$4,718	-3.2	5.4	13.8
470	ARKANSAS CITY	$4,502	$5,217	$5,678	$6,131	15.9	26.1	36.2
471	DEXTER	$7,001	$5,810	$6,323	$6,827	-17.0	-9.7	-2.5
473	CHAPMAN	$5,213	$4,532	$4,932	$5,326	-13.1	-5.4	2.2
474	HAVILAND	$7,442	$5,784	$6,295	$6,797	-22.3	-15.4	-8.7
475	GEARY COUNTY SCHOOLS	$4,435	$4,992	$5,433	$5,867	12.6	22.5	32.3
476	COPELAND	$8,469	$7,808	$8,497	$9,175	-7.8	0.3	8.3
477	INGALLS	$6,588	$6,205	$6,753	$7,292	-5.8	2.5	10.7
479	CREST	$6,640	$5,526	$6,014	$6,494	-16.8	-9.4	-2.2
480	LIBERAL	$4,880	$5,936	$6,460	$6,976	21.6	32.4	42.9
481	RURAL VISTA	$5,999	$5,153	$5,608	$6,056	-14.1	-6.5	0.9
482	DIGHTON	$6,752	$5,574	$6,066	$6,550	-17.4	-10.2	-3.0
483	KISMET-PLAINS	$6,160	$6,258	$6,810	$7,354	1.6	10.6	19.4
484	FREDONIA	$5,631	$5,322	$5,791	$6,254	-5.5	2.9	11.1
486	ELWOOD	$6,314	$5,647	$6,146	$6,637	-10.6	-2.7	5.1
487	HERINGTON	$5,877	$4,967	$5,406	$5,837	-15.5	-8.0	-0.7
488	AXTELL	$6,107	$4,786	$5,209	$5,625	-21.6	-14.7	-7.9
489	HAYS	$4,448	$4,456	$4,849	$5,237	0.2	9.0	17.7
490	EL DORADO	$4,352	$4,440	$4,833	$5,218	2.0	11.0	19.9
491	EUDORA	$4,787	$4,433	$4,825	$5,210	-7.4	0.8	8.8
492	FLINTHILLS	$6,066	$4,957	$5,394	$5,825	-18.3	-11.1	-4.0
493	COLUMBUS	$5,025	$4,939	$5,375	$5,804	-1.7	7.0	15.5
494	SYRACUSE	$6,330	$6,313	$6,871	$7,419	-0.3	8.5	17.2
495	FT LARNED	$5,297	$5,135	$5,588	$6,034	-3.1	5.5	13.9
496	PAWNEE HEIGHTS	$7,374	$5,514	$6,001	$6,480	-25.2	-18.6	-12.1
497	LAWRENCE	$4,298	$4,768	$5,189	$5,604	11.0	20.8	30.4
498	VALLEY HEIGHTS	$6,057	$5,028	$5,472	$5,908	-17.0	-9.7	-2.5
499	GALENA	$5,739	$6,173	$6,718	$7,254	7.6	17.1	26.4

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			2004	2006	2007	2004	2006	2007
500	KANSAS CITY	$4,788	$7,024	$7,644	$8,254	46.7	59.7	72.4
501	TOPEKA PUBLIC SCHOOLS	$4,571	$6,021	$6,552	$7,075	31.7	43.4	54.8
502	LEWIS	$7,901	$6,475	$7,047	$7,609	-18.0	-10.8	-3.7
503	PARSONS	$4,686	$5,145	$5,599	$6,046	9.8	19.5	29.0
504	OSWEGO	$5,976	$5,314	$5,783	$6,245	-11.1	-3.2	4.5
505	CHETOPA	$5,966	$7,123	$7,752	$8,370	19.4	29.9	40.3
506	LABETTE COUNTY	$4,347	$4,743	$5,162	$5,574	9.1	18.7	28.2
507	SATANTA	$6,484	$6,218	$6,767	$7,307	-4.1	4.4	12.7
508	BAXTER SPRINGS	$5,453	$5,523	$6,010	$6,490	1.3	10.2	19.0
509	SOUTH HAVEN	$6,908	$5,497	$5,982	$6,459	-20.4	-13.4	-6.5
511	ATTICA	$8,048	$6,585	$7,167	$7,739	-18.2	-10.9	-3.8
512	SHAWNEE MISSION PUBLIC SCHOOLS	$4,281	$4,608	$5,015	$5,415	7.6	17.1	26.5

[a] Base State Aid Per Pupil (BSAPP) for 2005-06 multiplied by weighted FTE without weights for special education, vocational education, or transportation. The product is divided by the unweighted FTE and by a deflator (1.06) to turn it into 2003-04 dollars.