

**AN ANALYSIS OF THE EQUITY OF
SCHOOL FACILITIES FUNDING IN KENTUCKY**

**Prepared for
The Kentucky Department of Education**

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EXECUTIVE SUMMARY

Lawrence O. Picus and Associates conducted an equity analysis of the Kentucky school facilities funding system. The study considered the horizontal equity of the system as a whole, followed by a consideration of vertical equity issues.¹ The inquiry into vertical equity was necessary because the facilities finance system attempts to meet several policy objectives.

The Capital Outlay (flat grant) and FSPK (foundation program) serve the interests of establishing a base that provides each district with nearly identical per pupil funds. However, other components of the system address other considerations, including the needs of rapidly growing districts and those of districts with greater facilities needs. Because these programs are designed to meet specific needs of sub-groups of districts, one would not expect to find perfect horizontal equity in the system as a whole. This necessitated conducting the vertical equity analysis. We did not examine the adequacy of the system.

The overall horizontal equity of the system was fairly good, but did not measure up to any of the generally accepted standards. The equity was reduced, as expected, by the programs that attempted to meet the different needs of various districts. The equity of the system has decreased in the past two years as the legislature added more such funding sources that focus on sub-groups of districts.

The portions of the system that were designed to provide funding equally to all districts do so remarkably well. The horizontal equity of the Capital Outlay (flat grant) and the FSPK (foundation program) is nearly ideal and well within the accepted standards.

The funding directed toward rapidly growing districts (the first and second growth nickels and the equalization of the first growth nickel) is reaching its intended target. Such districts, on average, receive far more facilities funding than the typical district. These districts also tend to have higher quality buildings and fewer unmet needs. However, a significant portion of their funding derives from local sources because they tend to be districts with greater wealth and the programs targeted toward growing districts rely on local funding more than other programs. For these reasons, growing districts receive less state money than other districts.

The funds directed toward districts with greater facilities needs (SFCC unmet needs and urgent needs) tend to reach their target, though not as accurately as the funds going to the growing districts. Districts with low equivalent values receive slightly above average facilities funding and have about the same level of building quality and unmet needs as a typical district. Small districts, however, appear to be the group toward which attention should be paid. Small districts, whether poor or not, tend to have greater unmet needs per-pupil and lower quality buildings than other districts, while receiving less facilities funding from the state? Or are they raising less? than poor districts.

¹ Horizontal equity refers to the equal treatment of individuals or groups (districts) that are equally situated, while vertical equity recognizes that different groups may have different needs and attempts to measure how well the system meets the needs of each group – even if that diverges from horizontal equity. In a perfect world, all like groups would be treated equitably to achieve both horizontal and vertical equity.

Several recommendations emerge from this study:

- The state should reassess how the recallable nickel (an option local tax subject to voter recall) operates, as this source lowers the horizontal equity of the system without addressing any consideration of vertical equity. Though the state did not initially equalize this nickel, making it a less appealing option for small and poor districts, it did so for the 2005-06 school year thus making it potentially fairer and more attractive as an option. If the state keeps this funding source, we strongly support the state equalizing it, thereby allowing each district that participates in the program to receive more equal funding from that program.
- The state should consider whether the more recent programs (second growth nickel and equalization of the first growth nickel) added to benefit growing districts are necessary or whether the funding might better be spent on small districts that have lower quality facilities. We make no recommendation regarding what state action would be appropriate because that is an issue of adequacy that goes beyond the scope of the study. Alternatively, horizontal equity would increase if the growth funding programs were made available to all districts in the state.
- The state must decide how to increase the equity of funding for small districts, either by providing sufficient facility funds to these districts without changing current district configurations, or perhaps by changing district configurations if that is seen as a necessary policy option.
- The programs that target districts with unmet needs should function more equitably. Small districts tend to receive less funding from this source than they need. One possible way to increase the options for small districts would be to extend the amount of time that districts can wait to use their unmet needs funding, so that small districts can accumulate a larger pool of funds with which to meet their need for improved facilities.
- In our opinion, one possible and comprehensive way to resolve the foregoing issues would be to increase the Capital Outlay, add a second FSPK equalized nickel, retain an unequalized growth nickel, and merge the regular SFCC program with the urgent needs funding. The other funding streams could then be rolled into the second FSPK nickel, in order to increase the horizontal equity of the system as a whole.
- We recommend that the state improve its system for measuring the quality of buildings, as this would improve its ability to direct funding to the districts with the greatest needs.
- Finally, we recommend that the state commission an adequacy study of its facilities finance system. This should occur after a new system to measure building quality is in place.

CONTENTS

Executive Summary	i
The Scope of the Study	1
School Facilities Equity Studies	2
School Facilities Funding in Kentucky	4
Capital Outlay Program	4
The “First Nickel”	4
SFCC Regular Funding	5
The First Growth Nickel	5
The Second Growth Nickel	6
The Recallable Nickel	6
The Equalized Facility Funding Program	6
Additional Funding for Category 5 Buildings	6
Expected Equity of the System	7
Horizontal Equity Analysis	7
Definitions of Equity Statistics	8
Individual Year Horizontal Equity Analysis	9
What is the Cause of the Recent Decrease in Equity?	11
Five Year Rolling Totals Analysis	13
Locating Inequities in the System	14
Capital Outlay and FSPK	14
Other Funding Sources	16
Vertical Equity Analysis	18
Growth Funds	19
SFCC Funds	19
Very Small Districts	21
Independent Districts	23
Local Vs. State Funding	24
Recommendations	26
References	30
Appendix	31

THE SCOPE OF THE STUDY

The Kentucky Department of Education contracted with Lawrence O. Picus and Associates to analyze the equity of school facilities funding in Kentucky. We have examined the equity of both the inputs and the outputs of the system. Our input equity analysis studied the “horizontal equity” of the system, which consists of the degree to which each district receives the same amount of per-pupil funding for facilities. The output equity analysis focused more on the “vertical equity” of funding, namely the fairness of the results of the facilities spending in terms of measures such as building quality and unmet facilities needs. Perfect output equity would be achieved if districts had facilities of the same quality and possessed the same level of per-pupil unmet needs. Such an outcome is not often seen in practice, so we examined the extent to which funding differences address differences in building quality and unmet needs. Our output equity analysis did not consider the adequacy of funding, however, as such an analysis would extend far beyond the scope of the study.

We have studied these issues using data provided by the Kentucky Department of Education (DOE) and the state’s School Facilities Construction Commission (SFCC). We assumed that these data were accurate, except for instances where we could detect inaccuracies. We have used the DOE’s building assessment as a measure of building quality even though that was not the original purpose of the assessment and it is unclear the extent to which the assessments are scored consistently across the state. However, the state has begun using the assessment as the basis for some of its facilities funding, plus this was the best available measure of building quality.

Our input equity analysis of facilities funding since 1990 was conducted using two approaches. The first was to measure the equity of each year’s funding individually. The second was to calculate five year rolling totals and measure the equity for each five year period, which enabled us to detect whether inequities in the individual year analysis could be attributed primarily to annual fluctuations that did not favor any district over time or to systematic features of the system that benefited a district or certain types of districts every year and to account for the episodic nature of spending on facilities. The output equity analysis was more limited in scope and involved the study of the most recent data (2004-05) that were available.

A number of other issues have arisen in connection with facilities funding in Kentucky. One of these issues relates to the funds available to districts that are growing, those that are small, and those that are poor. We refer to these districts collectively as “Districts of Interest.” For the purposes of this study, we have defined “Growing Districts” as those that assessed the First Growth Nickel,² “Small Districts” as those with less than 1,000 funded students in Average Daily Attendance (ADA), and “Poor Districts” as those with less than \$200,000 per-pupil in Equivalent Value. Overall, there were 26 Growing Districts, 41 Poor Districts, and 40 Small Districts. Since 20 districts fell into the categories of Poor and Small, we have further broken

² Details on this program and others are contained in the section of this report titled “School Facilities Funding in Kentucky.”

down Small and Poor Districts into those that are “Small and Poor”, “Small not Poor”, and “Poor not Small”.

Another contentious issue relates to the sources of the funding received by various districts. Some growing districts, in particular, believe that too great a percentage of their funding comes from local sources, while other districts receive far more state funding. We examined this issue by tracing the type of funding received by each district.

This report is organized as follows. Section 1 reviews the literature on equity analyses of facilities funding. Section 2 sets forth the system for school facilities funding in Kentucky and explains what we expect to find given that system. Section 3 considers the horizontal equity analysis of the overall system, which is the degree to which each district received the same level of facilities funding per-pupil. Certain unequal resource distributions are found in the system, so Section 4 traces their origin. Section 5 discusses vertical equity by comparing the extent to which the resource inequalities result from policy considerations that led the state to direct additional funding to certain districts. Section 6 examines the extent to which various types of districts receive revenues via local versus state funding. Finally, in Section 7, we will set forth some recommendations to increase the equity of Kentucky’s facilities funding scheme.

SECTION 1: SCHOOL FACILITIES EQUITY STUDIES

The quality and funding of school facilities has become an increasingly important issue over the past two decades. Facilities have been an important part of school finance litigation in several states, including Alaska, Arizona, Arkansas, Colorado, Idaho, Louisiana, New Jersey, New Mexico, and Wyoming. These cases tend to be argued from the perspective of adequacy, addressing the crucial issue of whether schools and school districts receive enough facilities funding to educate children up to the applicable standard.³

Facilities equity can be important in some cases, especially when facilities quality and funding are extremely unequal. For example, the fact that several rural Alaska school districts had facilities with collapsing roofs, no drinking water, sewage back-up, and buildings filled to nearly double their capacity played an important role in the court declaring facilities financing unconstitutional in Alaska (*Kasayulie v. Alaska*, 1999). Alaska’s position was further weakened because its capital improvement funding program went unfunded, plus its bond program was restricted to incorporated cities and boroughs and called for a 30 percent/70 percent split in funding between the locality and the state, which meant that poor and/or unincorporated rural districts could not participate in the bond program (*Kasayulie v. Alaska*, 1999).

States often overlook facilities equity issues, despite their importance (Vornberg & Andrews-Pool, 1998). In fact, very few studies of facility finance equity exist. Among those few studies,

³ *Roosevelt Elementary School District Number 66 v. Arizona*, 2003; *Lake View School District #25 v. Huckabee*, 2005; *Idaho Schools For Equal Educational Opportunity v. Idaho*, 2006; *Abbott v. Burke*, 2005; *Zuni Public School District v. New Mexico*, 2002; *DeRolph v. Ohio*, 1997; *Campbell County School District v. State*, 1995.

Arsen, et. al. (2005) assessed the equity of facilities funding in Michigan, where facilities are funded almost exclusively at the local level. They judged equity using four criteria: the range of funding disparities between districts, building quality differences, unmet needs differences, and different effective tax rates. Arsen, et. al. found that poor districts had access to less funding due to their lower capacity, had lower quality buildings, greater unmet needs, and higher effective tax rates. Thus, the Michigan funding system produced a negative impact on poor districts in every possible way. The authors listed five possible reforms, some of which are similar to aspects of the Kentucky funding system, such as state financing of certain bonds, facilities grants, and facilities funding equalization.

Small school districts are another group that can face facilities funding shortfalls. Hughes (2000) showed that small districts in Arkansas faced several hurdles that impeded their ability to receive equitable funding. These factors included lower property values and less ability to sustain higher tax rates.

Lowe (1996) found inequities in the California facilities funding system. Unlike the previously discussed studies, Lowe used a broad spectrum of the typical equity statistics, rather than focusing on just the range. Lowe found that the California system contained widespread inequity, especially at the bottom of its distribution.

The foregoing studies contain an important similarity. They apply the usual equity measures (or a subset thereof) to the study of facility equity. This usage of the statistics is consistent with the suggestions of other authors (see for example, Sielke, 1998).

We followed this practice and applied the typical equity statistics to our analysis. Odden and Picus (2004) presented a thorough discussion of horizontal equity statistics. They listed the following as the commonly used horizontal equity statistics: Range, Federal Range, Federal Range Ratio, Coefficient of Variation, Gini Coefficient, McLoone Index, and Verstegen Index. Our analysis emphasizes the last five of these statistics. We placed less weight on the first two because they share the flaw of increasing with inflation, which is a particularly important concern in a study that spans fifteen years. All equity statistics used will be defined in Section 3.

As mentioned above, we considered a second type of equity, called vertical equity. Vertical equity addresses the reality that every district should not necessarily receive the same amount of per-pupil funding. For example, consider two districts that are identical except for the fact that one educates a large number of children who are involved in special education programs, while the other has far fewer of such children. The state would be justified in providing the first district with additional funding to meet the extra expense of educating a large proportion of children in special education.

Unfortunately, no statistic exists that directly measures the vertical equity of a system. Instead, one of two approaches can be used. An analyst can assign “weights” to students with special needs, adjust the funding in accordance with those weights, and measure the equity of the system using the usual horizontal equity statistics (Odden & Picus, 2004). This approach, however, can only be taken when good data exist to specify the weights. As a result, we could not use this

method in the present study because no valid weighting system exists to adjust for differing facilities needs. Any weights we would have assigned would have been purely arbitrary.

The second method involves removing from the equation all the programs that address special needs and assessing the horizontal equity of the remaining programs (Odden & Picus, 2004). This method really just provides a stronger horizontal equity analysis because it considers the equity of the programs that are supposed to possess horizontal equity. It cannot measure the vertical equity of the programs removed from the equation.

Our vertical equity analysis consists of a modified version of the second approach. We measured the equity of the programs that were designed to promote horizontal equity. We took the analysis a step further by investigating the extent to which the funding that was designed to achieve vertical equity reached the intended districts. However, we could not determine whether these funding sources provided the proper adjustments due to the lack of knowledge regarding proper weights for school facilities.

SECTION 2: SCHOOL FACILITIES FUNDING IN KENTUCKY

This section describes the Kentucky school facilities funding system. The basic elements of the current system were enacted as part of the Support Education Excellence in Kentucky (SEEK) legislation, which was passed in 1990. The funding scheme has evolved over the subsequent decade and a half as the legislature attempts to address a variety of needs arising in the state. Most of the changes have been systematic modifications designed to correct for certain problems in the state, but some of the more recent legislation has been ad hoc in nature.

Capital Outlay Program

The facilities funding system has contained three core elements since 1990-91. The first is the Capital Outlay program. This funding stream consists of \$100 per-pupil from the base SEEK outlay that each district is required to place in its Capital Outlay Fund. This amount has not been changed for several decades. Therefore, the Capital Outlay essentially functions as a flat grant to districts. The Capital Outlay funds can be used for the purposes of direct payment of construction costs, debt service on bonds, payment or lease-rental agreements that will lead to the ownership of a physical plant, paying a deficit from over-expenditure for capital construction, and as a reserve for the above purposes (Kentucky Revised Statutes (KRS) 157.420(4)). The Capital Outlay program can be expected to share the typical characteristics of a flat grant program, namely being very equitable, but not as cost effective as other approaches.

The “First Nickel”

The second element of the facilities finance system is the Facilities Support Program of Kentucky (FSPK) or the so called “first nickel”. The FSPK consists of a mandatory tax of \$0.05 levied by all districts on each \$100 of “equivalent” value in their jurisdiction (KRS 157.440(1)(b)). The equivalent value of a district is comprised of its real property value, plus certain elements of personal property, such as automobile registration. The funds raised by the

first nickel may be used for “debt service, new facilities, or major renovations of existing facilities.” (KRS 157.440(1)(b)) The state equalizes the tax collection up to 150% of the average assessed per-pupil equivalent value in the state. The equalization funds are to be directed toward debt service as much as possible (KRS 157.440(1)(b)). The state does not recapture funds that wealthy districts collect in excess of the equalized amount, so it is possible for those districts to raise funds in excess of the equalization amount.

SFCC Regular Funding

The third element of the system is the SFCC regular offer. The SFCC funding is designed to provide extra debt service to districts that have unmet facilities needs. The SFCC offers an amount determined by the legislature, which in recent years has been in the vicinity of \$100 million, to the districts. The offer each district receives equals the percentage of the funding that is proportional to that district’s percentage of the state’s unmet facilities needs. Districts do not have to accept the offer. If the offer is not accepted, the SFCC reallocates the money to the districts which participated in the program by accepting the offer. A district that accepts the offer is not required to use the money for a period of up to 8 years from the date of the offer. This permits the district to accumulate multiple offers and use them for one large scale project. Once the district uses the offer by selling bonds for a construction project, the funds become “obligated” by the state. The amount of the obligated funds can, and often does, differ from the amount offered in any given year, so we have evaluated the system’s equity twice in each year: first using the amount offered and again using the amount obligated.

The SFCC funding stream would appear to be a likely source of horizontal inequity in the system, since different districts would have different unmet needs. However, the program may contribute to the vertical equity of facilities funding by providing additional funds to the districts that possess the greatest need for improved facilities.

The First Growth Nickel

The First Growth Nickel, established by the 1994 General Assembly, was first funded as part of the 1994-96 biennial budget. This program applies only to Growing Districts, defined as those that have:

1. Grown by at least three percent and 150 students or more over the past five years
2. Bonded debt to their maximum capacity and student enrollment in excess of classroom space
3. An approved facility plan (KRS 157.621(2)).

The First Growth Nickel permits Growing Districts to levy an additional \$0.05 equivalent tax, which raises an amount equal to that raised locally via the FSPK. This tax is not subject to voter recall and it was not originally equalized by the state. This tax would be expected to reduce the

horizontal equity of the system, but may increase its vertical equity by providing funds to districts that are experiencing rapid growth.

The Second Growth Nickel

The legislature created two more local tax options as part of the 2002-04 biennial budget. The first of these was the creation of the Second Growth Nickel, which functions the same as the First Growth Nickel, with one important exception. Districts that levy the Second Growth Nickel are eligible to receive equalization of the First Growth Nickel, but the Second Growth Nickel itself is unequalized. This tax would be expected to have the same impact on equity as the First Growth Nickel.

The Recallable Nickel

The second tax option is the Recallable Nickel. All 176 Kentucky school districts are eligible to levy this tax, but the tax is subject to recall by the voters of the district. Though initially this tax was not equalized by the state, it was equalized for use during the 2005-06 school year. This program would also be likely to reduce the horizontal equity of the system, but appears unlikely to increase its vertical equity.

The Equalized Facility Funding Program

The Equalized Facility Funding (EFF) program provides equalization funding to districts that levied, or have debt service on, a ten cent equivalent tax rate for building purposes and have not received growth equalization or another EFF. This program first became equalized in 2005-06, which is after the time span of this study.

The five cent levy from the FSPK counts as half of the ten cent equivalent tax rate needed for districts to be eligible to receive EFF equalization. Therefore, the EFF program enables districts to receive equalization for an unequalized nickel that it levies. In 2005-06, such nickels were limited to the unequalized growth nickel or to optional nickels the district raised in addition to those the state required it to raise. In addition, any district having debt service on a ten cent equivalent rate also is eligible to receive equalization from this source. Similar to the Recallable Nickel, the EFF would be expected to reduce the horizontal equity of the system without increasing its vertical equity.

Additional Funding for Category 5 (Urgent Needs) Buildings

The state also provides funding to districts that have buildings that rate as “Category 5” on the DOE’s building assessment. Category 5 buildings rate as being in “poor” condition and generally are more than 40 years old. Category 4 buildings are described as those that need renovation, which implies that Category 5 buildings need to be replaced or require even greater renovation. This funding comes outside of the normal funding formula and is administered by the SFCC.

Expected Equity of the System

The definitions of the programs led us to expect certain equity results if the programs were operating as planned. We mentioned those expectations briefly in the discussion of each program, but this section will tie them together in order to place our findings in their proper context. Following this section, we turn to a discussion of our findings.

The original version of the facilities finance system contained three elements: the Capital Outlay, FSPK, and SFCC. The Capital Outlay and FSPK programs can be grouped together because they are directed toward providing horizontal equity, especially given the 150% equalization level of the FSPK program. Therefore, we would expect the horizontal equity of these programs to be very good.

The SFCC serves the purpose of providing funds based on the unmet facilities needs of the districts in the state. The needs of the districts will not be identical, so districts can be expected to receive different levels of funding from the SFCC. Such differences would lower the horizontal equity of the system, but would most likely increase its vertical equity by providing additional funding to districts with additional needs.

The First Growth Nickel was included in the system a few years after its inception. It was designed to provide an additional source of revenue to districts that were growing rapidly and needed to expand their facilities to meet their enrollment gains. Thus, this program was targeted at a subset of the districts, meaning that it would introduce horizontal inequity into the system. Similarly to the SFCC program, however, the horizontal inequities may be justified by the increased vertical equity of providing additional dollars to districts that would need to expand their capacity rapidly.

These four elements remained in place for nearly a decade, until the recent addition of the Second Growth Nickel, the equalization of the First Growth Nickel, the Recallable Nickel, the EFF, and the Urgent Needs funding streams. The programs for Growing Districts would be expected to increase the horizontal inequity by providing additional revenues to districts that were already collecting additional funds. The Urgent Needs funding, much like the regular SFCC program, would be expected to introduce horizontal inequities because these funds were to be allocated based on need. The effect of the Recallable Nickel was more difficult to predict because it was available to all districts and for our data, up to the 2004-05 school year, was not equalized, which might have made it more attractive to wealthy districts. Finally, the EFF program provided relief to districts that levied unequalized nickels or had excessive debt service obligations, so it is not entirely clear a priori which districts would benefit from this program.

SECTION 3: HORIZONTAL EQUITY ANALYSIS

As described above, we conducted two types of system-wide horizontal equity analyses. The first used traditional equity analysis tools to assess the equity of the distribution of facility funds year-by-year over a 15 year time frame. However, an individual year analysis does not take into

account the fact that facilities funding and major facilities rehabilitation tend to be episodic, meaning that sometimes inequalities that arise in any individual year tend to cancel out over time. This could make individual year equity analyses overstate the amount of inequity in the system. To control for this, we conducted a second equity analysis using five year totals to determine the extent to which any funding inequalities were systematic in nature or resulted from episodic fluctuations.

Definitions of Equity Statistics

As mentioned earlier, our analysis focused on five equity statistics: the per-pupil Coefficient of Variation, the Gini Coefficient, the Federal Range Ratio, the McLoone Index, and the Verstegen Index. We describe each of these statistics, and then display the results of our analysis.

The Coefficient of Variation is defined as the standard deviation divided by the mean. The Coefficient of Variation can be calculated using district level means and standard deviations, but it is more accurate to weigh the district averages by the number of students in each district to determine a per-pupil Coefficient of Variation. We have calculated both types of Coefficient of Variation and have presented the results for both in the data tables in the Appendix. Our discussion of results in this section, however, will be based on the pupil weighted Coefficient of Variation.

A low Coefficient of Variation means that the per-pupil funding received by most districts is clustered tightly around the mean, while a high Coefficient of Variation indicates a wider spread. The ideal Coefficient of Variation would be 0.00 (in which case each district received the same per-pupil level of funding), while the generally accepted standard for a highly equitable system is 0.10 for funding for current or ongoing (as opposed to capital) expenditures (Odden & Picus, 2004). No clear standards have been established for facilities funding, so we will use the 0.10 standard in this analysis, since it is the best choice given the current state of research. This same statement is true for each of the equity measures, but we will not repeat it in order to avoid redundancy.

The Gini Coefficient measures the extent to which each child in the state receives the same percentage of the funding. A state with 1,000,000 students, for example would have perfectly equitable funding if the funds received by each school equaled the number of students it educated multiplied by 1/1,000,000 of the total funding. In practice, some schools receive more than the ideal per-pupil percentage, while others receive less. The Gini Coefficient gauges how close the state is to the ideal funding distribution. The ideal Gini Coefficient would be 0.00, while the accepted standard is 0.05.

The Federal Range Ratio provides insight into the difference in funding between the high end and the low end of the funding scale. It is calculated by taking the difference between the per-pupil funding at the 95th percentile and that at the fifth percentile, then dividing that difference by the funding at the fifth percentile. In the ideal situation, no funding differences would exist, so

the Federal Range Ratio would equal 0.00. A common standard for the Federal Range Ratio is 0.25.

The McLoone Index compares the funds received by the lower half of the distribution to that attributed to the median student. It is calculated by dividing the average per-pupil funding of the lower half of the distribution by the median funding level. Ideally, these figures would be the same, which means the ideal McLoone Index would be 1.00. The accepted standard for the McLoone is 0.95 in practice.

The Verstegen Index is the counterpart of the McLoone Index, in that it performs the same calculation for the top half of the distribution. Again, the ideal value of the Verstegen Index would be 1.00, while the accepted standard is 1.05.

Individual Year Horizontal Equity Analysis

Our analysis found that the equity of Kentucky's facilities finance system remained reasonably constant from 1990-91 through 2002-03 and showed a slight improvement in equity over that time period. However, we also found that the new funding streams added to the system in 2003-04 and 2004-05 changed the picture by significantly increasing the inequity of the system as a whole.

Figures 1 and 2⁴ show the trends in these statistics for total facilities funding from 1990-91 through 2004-05, which includes per-pupil funding from every program offered in the relevant year. These include the Capital Outlay, FSPK, and SFCC programs in each year, the First Growth Nickel beginning with the 1994-95 school year, and all of the other programs starting in 2003-04. Figure 1 presents the results using the SFCC offer data, while Figure 2 does the same including SFCC obligation data.

In general, the system is fairly equitable. However, it does not meet the standards identified above for any of the measures, which is not surprising given the many elements of the system that were designed to provide vertical equity. The trends in the figures show that the equity statistics, other than the FRR, were nearly flat from 1990-91 through 2002-03. To be more precise, the CV and Gini showed a very slight decrease in value, indicating a slight improvement in terms of horizontal equity. The Verstegen was essentially flat, meaning the equity of the top of the distribution did not change much over this period. The McLoone, however, drew slightly closer to one from 1990-2003, which indicates that most of the small overall increase in equity occurred at the bottom half of the distribution. The FRR shows a more pronounced downward trend over this time, with an upswing in 1994-95 when the First Growth Nickel was introduced into the system.

The Coefficient of Variation, Gini, and FRR trends show that the Kentucky facilities finance system as a whole became less equitable starting in 2003-04. Each statistic, except for the

⁴ For each figure, the underlying data can be found in the corresponding table in the Appendix.

McLoone Index, spiked upward in 2003-04 and remained high in 2004-05. The McLoone Index remained fairly constant in 2003-04 and 2004-05. The increase in the Verstegen Index and the lack of change in the McLoone Index indicate that the inequities were introduced in the upper half of the funding distribution.

Figure 1: Horizontal Equity Trends (SFCC Offer)

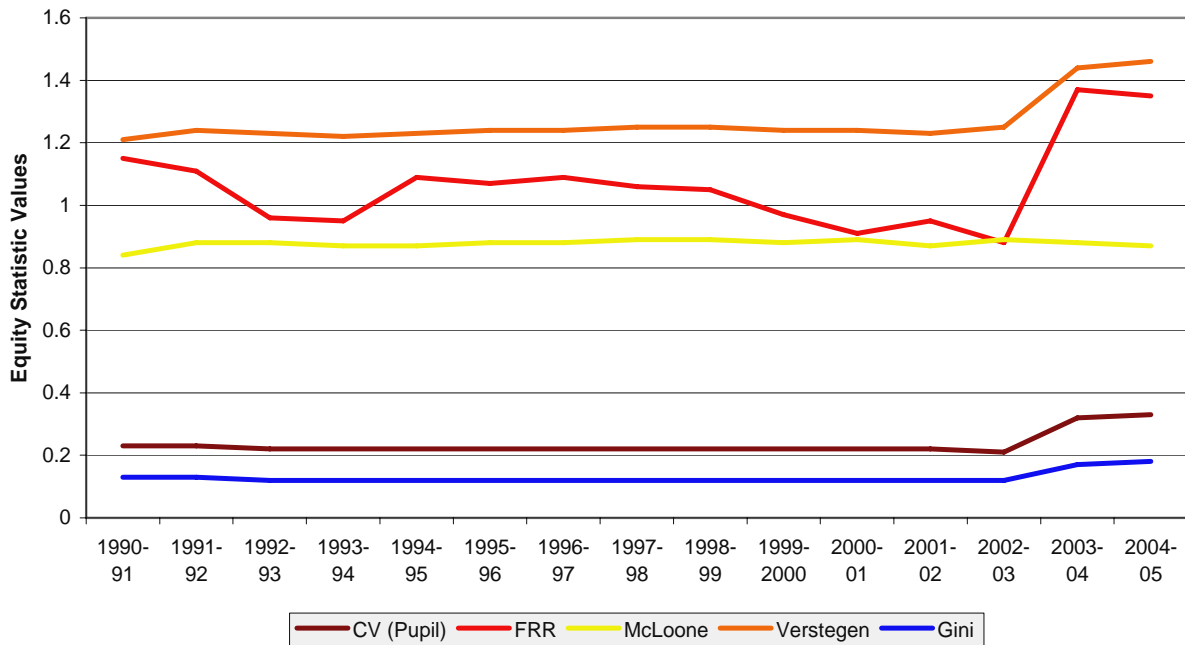
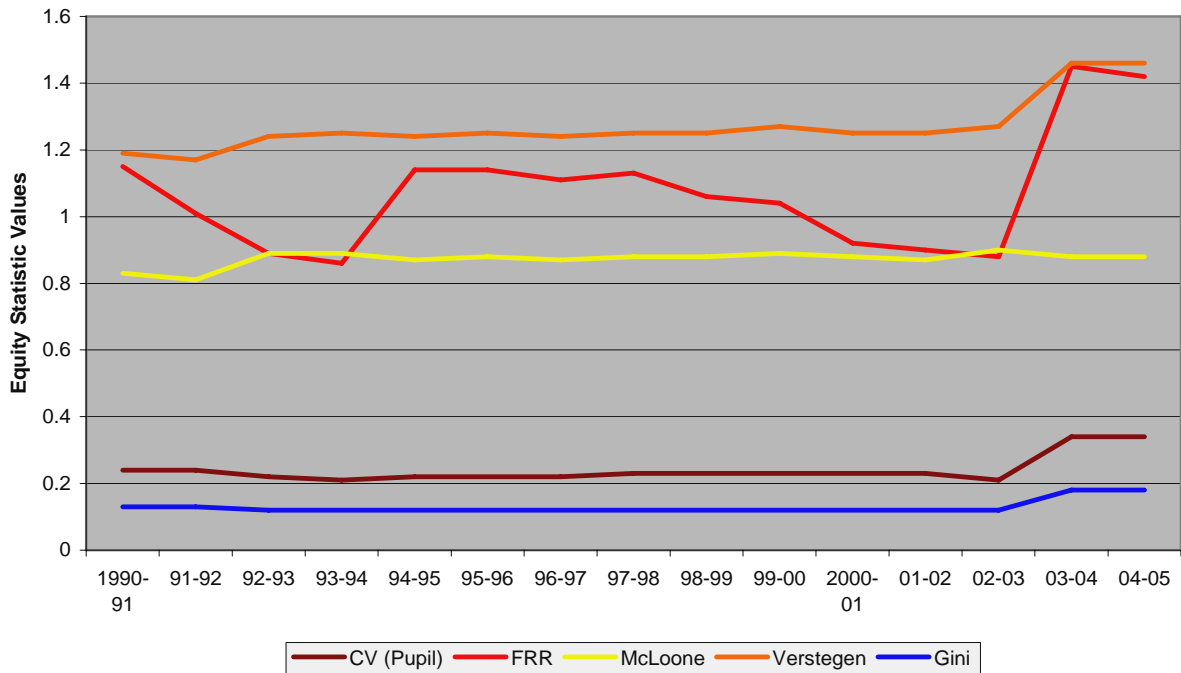


Figure 2: Horizontal Equity Trends (SFCC Obligation)



What is The Cause of the Recent Decrease in Equity?

It is straightforward to trace the source of the inequities that were introduced in 2003-04. New funding sources, such as the Second Growth Nickel, the equalization of the First Growth Nickel, the Recallable Nickel, the EFF, and Urgent Needs funding were introduced during this time period. Figures 3 and 4, using SFCC offer and SFCC obligation data respectively, show that the equity figures would remain essentially identical to the previous results if the analysis excludes the funding sources that were added in 2003-04 and 2004-05. This result reveals that the new modifications increased the level of inequity present in the system. In fact, both figures show that the horizontal equity of facilities funding in Kentucky over the past two years is lower than at any previous time since the current system was implemented in 1990-91. This is not unexpected given that the state added new programs during this time period that were intended to improve the vertical equity of the system. This finding compelled us to examine more closely the underlying causes of the newly created inequities.

Figure 3: Horizontal Equity Trends (SFCC Offer, No New Sources)

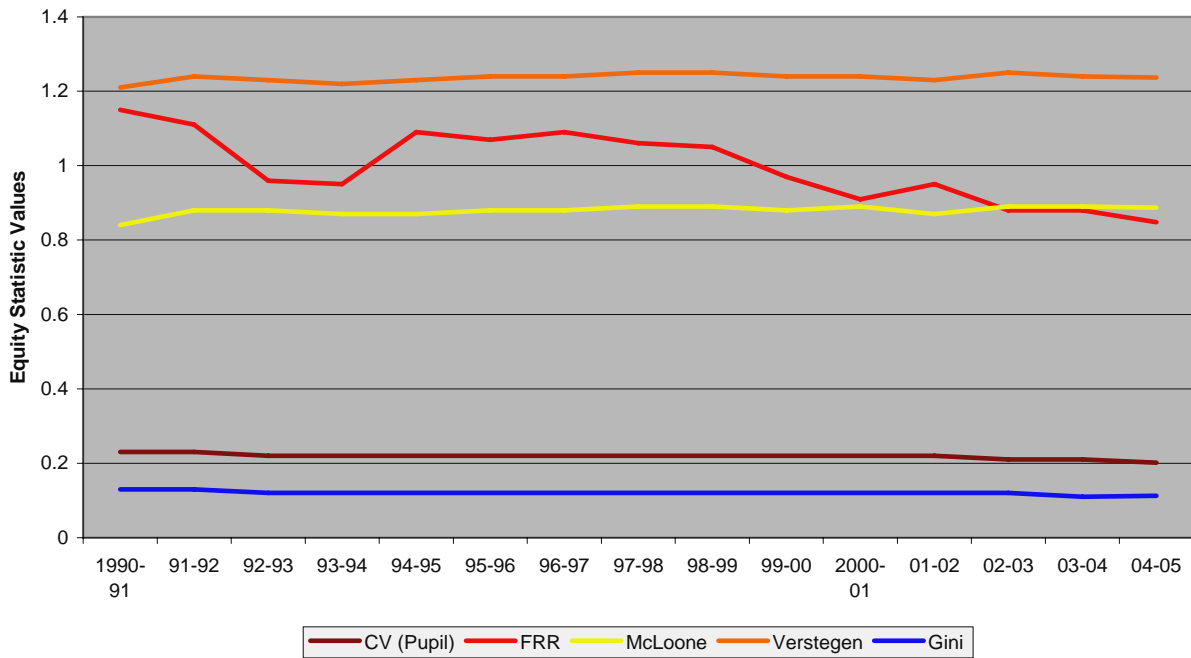
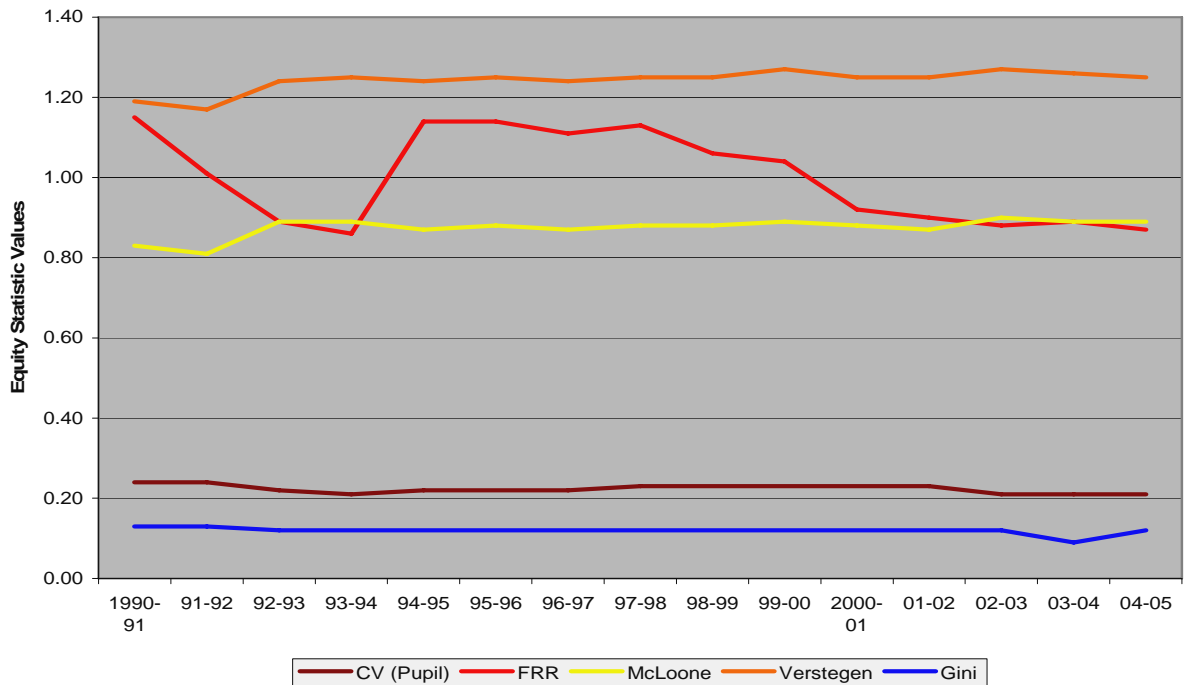


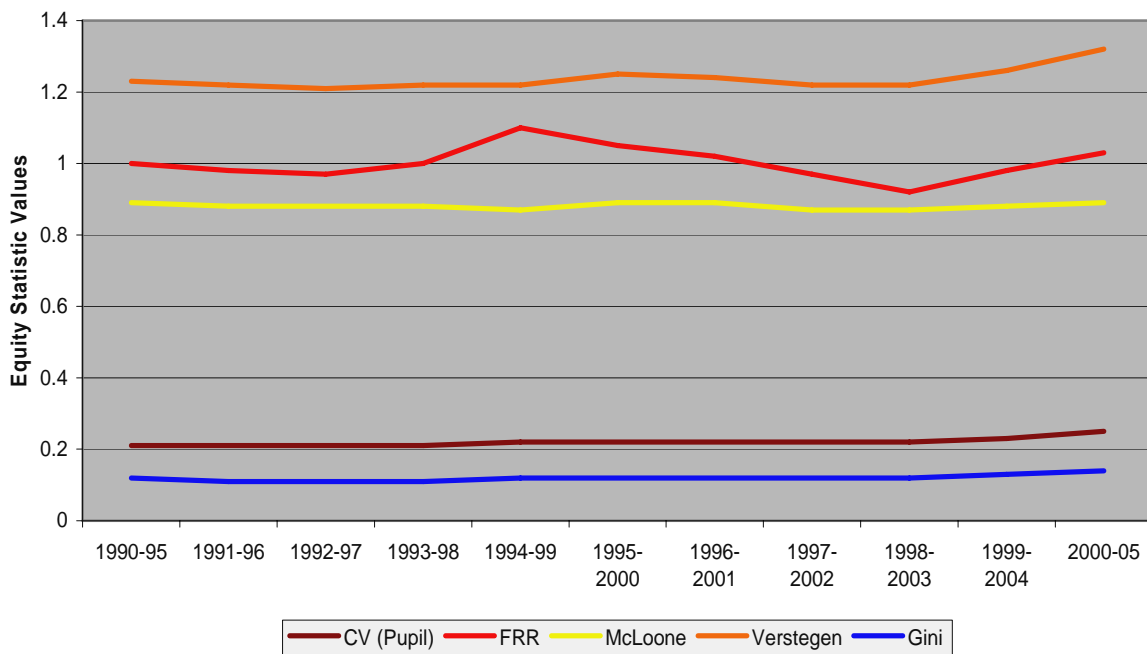
Figure 4: Horizontal Equity Trends (SFCC Obligation, No New Sources)



Five Year Analysis

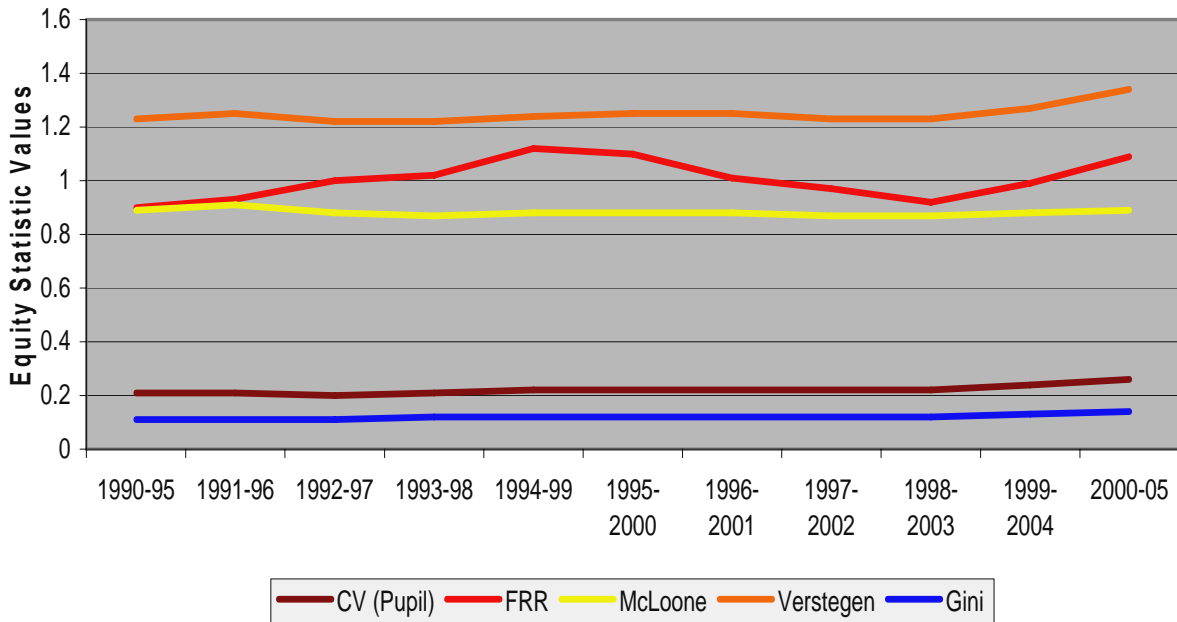
The first step in this analysis was to scrutinize the five year data in order to determine whether the inequities were systematic within the system or whether they were the result of episodic fluctuations. Figures 5 and 6 show the equity data for total facilities funding when the data were grouped into rolling five year totals⁵. The patterns in these figures closely parallel those based on the individual year analyses. The values of the equity statistics are very close across the board and the same trends appear in these figures as in Figures 1 and 2. This provides evidence that the inequities result from systematic factors within the funding formula. In particular, it provides further evidence that the programs added in the previous two years increased the inequalities in the system.

Figure 5: 5 Year Horizontal Equity Trends (SFCC Offer)



⁵ A 5 year total per-pupil amount was calculated for each district, for each funding source. For example, the 1990-95 year FSPK per-pupil total for Adair County was calculated by summing together the district's per-pupil FSPK from 1990-91 through 1994-95.

Figure 6: 5 Year Horizontal Equity Trends (SFCC Obligation)



SECTION 4: LOCATING INEQUITIES IN THE SYSTEM

In the previous section, we noted that the Kentucky facilities finance system as a whole appears fairly equitable, but that it contains a certain degree of inequity and that the programs added to the system within the past few years have reduced the equity of facilities finance in Kentucky. As discussed above, we expected to find inequities in the system given that it provides extra funding opportunities to certain districts in order to promote vertical equity. In order to more deeply explore the inequities in the entire system, we have separated the elements of Kentucky’s funding scheme into four groups of programs.

Capital Outlay and FSPK

The Capital Outlay (the \$100 flat grant) and the FSPK (the equalized first nickel) funds form the foundation of the system by providing a base level of funding. These two programs have been designed to achieve horizontal equity, so we would expect few inequities to arise from the Capital Outlay and FSPK programs.

Figure 7 depicts the equity statistics for the Capital Outlay and FSPK programs from 1990-91 through 2004-05. The figure shows that these programs made rapid improvement in terms of equity from 1990-91 through 1996-97, as they became extremely equitable by any standard. The Coefficient of Variation, FRR, and Gini all approach their ideal value of 0.00, while the McLoone equals 1.00 and Verstegen is quite close to 1.00.

Figure 7: Horizontal Equity Trends (Capital Outlay and FSPK)

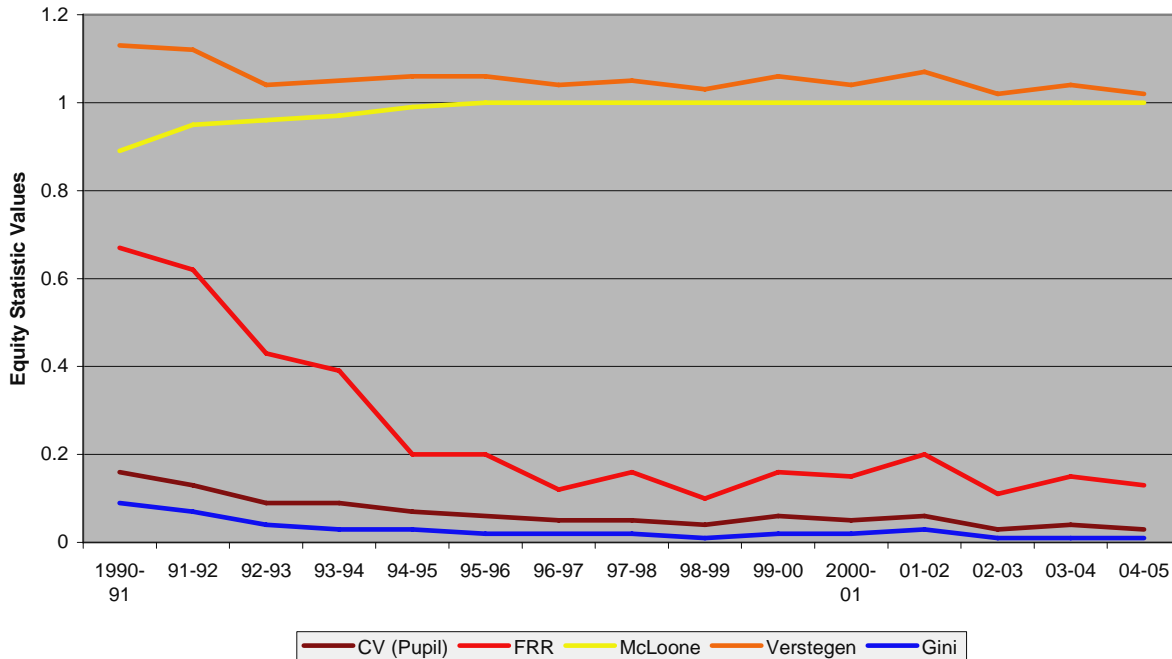


Figure 7 also helps to better understand the values displayed in Figures 1 and 2. Recall that the FRR went up in 1994-95, but the Coefficient of Variation and Gini did not change significantly in that year. Two counteracting trends led to those results. The state improved the equity of the Capital Outlay and FSPK programs, especially the latter, in 1994-95, but it also added the First Growth Nickel at that time. The Growth Nickel enabled a fairly small number of districts (less than 20 percent) to collect facilities revenues that exceeded those in the rest of the state. The First Growth Nickel, therefore, increased the range of values, explaining the increase in the FRR. However, it impacted a relatively small percentage of the districts, so its influence on the Coefficient of Variation and Gini appears to have been offset by the increasing equity of the FSPK.

If we restrict our focus to 2004-05, Table 1 demonstrates that these funding streams were allocated in the equitable manner in which they were designed. The Capital Outlay and FSPK programs exceeded the accepted standards of equity on each of the five measures. The minor inequities in these programs arose because four relatively wealthy districts possessed the ability to raise local funds via the FSPK that exceeded the amount equalized by the state. The vast majority of districts, however, received nearly identical per-pupil revenues from these sources.

Table 1: Equity Measures, 2004-05

Measure	Equity Assessment Standard	Capital Outlay & FSPK	Total Funding	Total Funding (Omitting New Sources)
Coefficient of Variation (Pupil)	<0.10	0.03	0.33	0.20
Gini	<0.05	0.01	0.18	0.11
FRR	<0.25	0.13	1.35	0.85
McLoone	>0.95	1.00	0.87	0.89
Verstegen	<1.05	1.02	1.46	1.24

Table 1 also shows the conclusion discussed in the previous section, that the system as a whole contains far greater inequity than these two programs. As discussed above, the new funding sources contribute to the inequity. However, important inequities remain in the system even if the new sources are not considered in the analysis. In particular, the new funding stream explains little of the change in the McLoone Index, meaning that the equity issues in the lower half of the distribution can be traced to another source.

Other Funding Sources

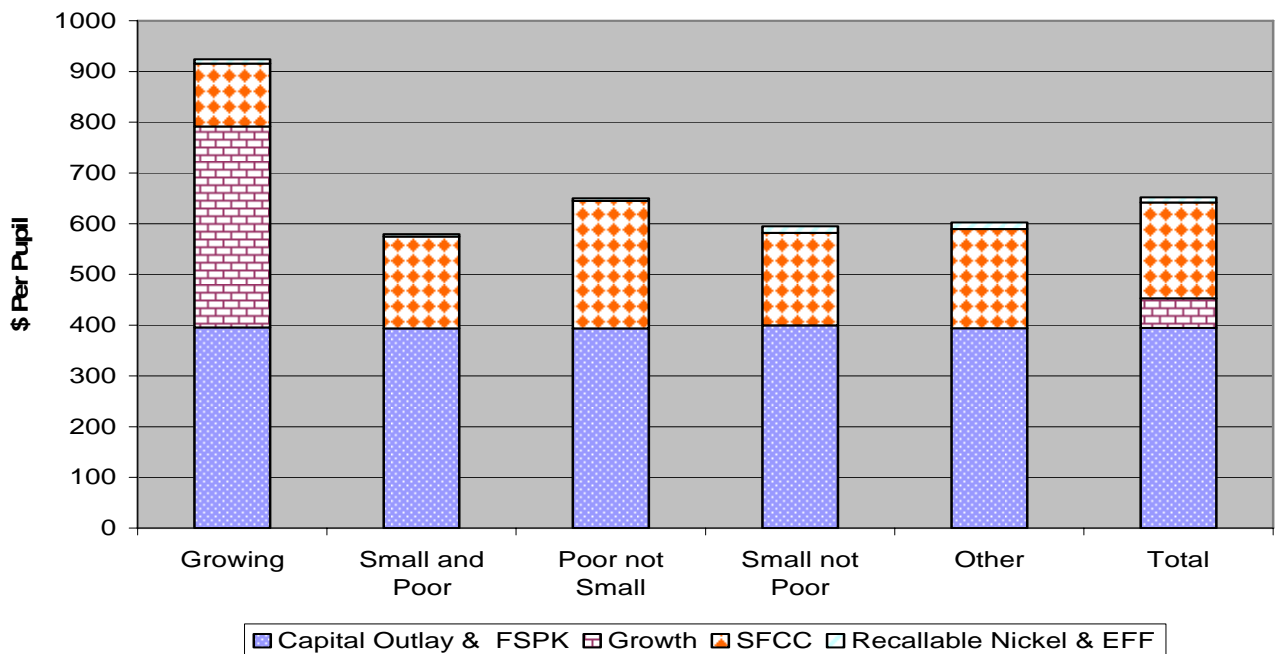
The remaining three parts of the system add extra funding sources on top of the foundation provided by the Capital Outlay and the FSPK. Two of the three types of programs attempt to address issues related to vertical equity, the different needs of districts with different conditions. The first is the various extra funding raised by and provided to Growing Districts. These districts receive extra funding through the locally raised First and Second Growth Nickels and the state's equalization of the First Growth Nickel. The two SFCC programs (unmet facilities needs and urgent needs) address a second issue of vertical equity by providing extra funds to districts with unmet and/or urgent facilities needs through the regular SFCC funding and the Urgent Needs funds. The third category of programs consists of extra funding streams that do not address any vertical equity interests. These sources are the Recallable Nickel and the EFF.

Figure 8 shows how the various types of funding are distributed to the Districts of Interest: Growing, Small and Poor, Poor not Small, and Small not Poor, as well as to the districts not included in any of these categories (Other Districts), and to the state as a whole. The blue part of each bar graph represents yet another way of seeing how equitably the Capital Outlay and FSPK funds were distributed. The funding allocated to Growing Districts went only to those districts, which introduced horizontal inequity into the system. Poor not Small Districts received the most benefit from the SFCC programs. Finally, Small not Poor and Other Districts received the most impact from the relatively small EFF and Recallable Nickel programs. The specifics of the various programs are considered individually in the following paragraphs.

The funds provided to Growing Districts caused significant inequities to arise in the system. A total of 26 districts levied the First Growth Nickel, and most of them also levied the Second Growth Nickel. After levying the First Growth Nickel, the 26 Growing Districts were part of a group of 28 districts that possessed facilities funding that exceeded all of the other districts in the state (the other 2 districts were wealthy enough to raise extra money via the FSPK program). The Second Growth Nickel and the Equalization of the First Growth Nickel amplified this effect. Thus, the growth nickels caused a situation in which 28 districts had far more per-pupil funding than the typical district, but left the other districts with about the same level of funding. Therefore, the growth nickels added inequity to the upper half of the funding distribution, but did not have a significant impact on the lower half.

The Recallable Nickel and the EFF produced effects similar to those of the growth nickels. The Recallable Nickel and EFF were highly inequitable in 2004-05, with only six districts participating in each program (no district received funding from both sources). For that reason, the addition of these programs to the base funding increased the inequity of the system. The inequities introduced into the system were rather modest, however, because the scope of the programs was limited to just a few districts each and the per-pupil funding was fairly low. The 12 districts that benefited from these programs consisted of 1 district from each type of Districts of Interest, plus 8 Other Districts (4 for each program). Therefore, these programs raised the funding level of 11 more districts (not counting the growing district that had already raised extra funding via the First Growth Nickel) above the level of the typical district and also introduced inequities into the top half of the distribution, but left the bottom half equitable.

Figure 8: Funding by Sources



The programs administered by the SFCC had a different effect, especially the regular SFCC funding. Every district except two received an offer of assistance from the SFCC and just six districts (those two and four others) did not obligate any SFCC funding. Therefore, the vast majority of districts received SFCC funding, which means that the SFCC funding had more potential for impacting the system's equity across the board. The SFCC funding was not distributed in a manner consistent with the principles of horizontal equity, but was offered based on the unmet facilities needs of the respective districts. For that reason, districts received offers that differed greatly, with two districts receiving no offers and three districts receiving offers of over \$500 per-pupil. The SFCC brought horizontal inequities into the system that spanned the entire distribution.

The foregoing explains why Kentucky's facilities finance system was more equitable at the bottom of the distribution than at the top. All three programs introduced inequity to the top of the distribution, but only the SFCC added it at the bottom. The Recallable Nickel and EFF were relatively small contributors to the inequities because they were fairly small programs. The growth nickels and SFCC programs contributed more of the inequities in the system because they were far larger programs.

SECTION 5: VERTICAL EQUITY ANALYSIS

Our equity analysis cannot end with the observation that certain programs brought inequities into the system. A state can implement programs with horizontal inequities in order to attain other policy goals. For that reason, three questions arise when considering the merits of the programs that introduced the inequities. First, what policy goals were the programs designed to meet? Second, do the programs provide resources to the group(s) they were intended to benefit? Third, do the programs allocate the proper amount of resources provided? We have limited our discussion to the first and second question because the third question would require an adequacy analysis that is beyond the scope of this report.

There are five types of programs that provide extra funding and serve different goals, as was discussed in the previous section.

1. The growth nickels provide funding to districts experiencing rapid growth and that need new and/or expanded facilities to house their students.
2. The regular SFCC program spreads funds for debt servicing across districts with unmet facilities needs.
3. The Urgent Needs funding was designed to help districts that need immediate facilities repair or construction to replace the worst buildings in the state, though many officials have expressed concern to us that the program has created a perverse incentive for districts to avoid maintaining buildings so that they could obtain Urgent Needs funding more rapidly.

4. The Recallable Nickel program appears to be an attempt to add some local control to facilities funding, at the expense of equity, by giving districts the ability to levy an additional nickel, subject to the possibility of a recall of the tax by the citizens.
5. The EFF program appears primarily to benefit districts that have high debt service or levied unequalized nickels for facilities purposes.

The foregoing analysis suggests that the various pools of money should be distributed as follows: The growth funds should be going to Growing Districts. The regular SFCC funds should be going to the districts with the most unmet needs, while the urgent needs funding should be going to districts with Category 5 buildings. The Recallable Nickel and EFF programs serve undefined constituencies, so we cannot determine which districts should benefit from the programs.

As discussed in previous sections, the Recallable Nickel and EFF programs add horizontal inequity to the system. They do not appear to offset this flaw by improving the vertical equity. For these reasons, these programs do not pass muster from an equity standpoint, as they introduce inequities without meeting any defined needs.

Growth Funds

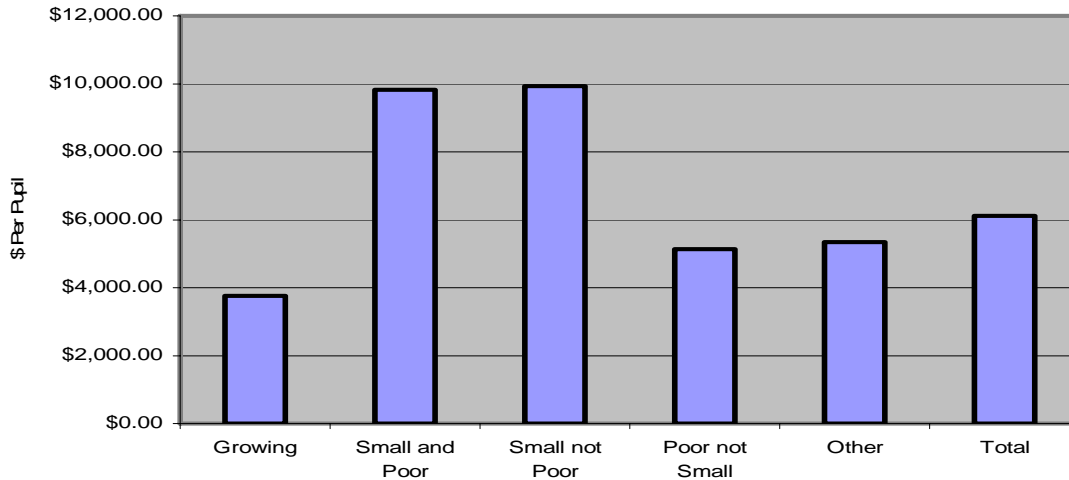
We again refer to Figure 8, which shows the distribution of funds from the various types of funding streams. The Growth Funds clearly reached their intended sources, as only Growing Districts levied the growth nickels and/or received growth equalization. Growing Districts approximately doubled their facilities funding from these sources. We offer no opinion on whether this amount was appropriate or adequate as that would go beyond the scope of this study.

SFCC Funds

Figure 8 show that Districts that are Poor not Small received the most per-pupil funding from SFCC sources, about \$252 per-pupil. Small Districts and Poor Districts and Small not Poor Districts received slightly less funding than Other Districts, about \$181, \$182, and \$195 respectively. Growing Districts received the least funding from these sources, about \$124 per-pupil. We will discuss below the extent to which this allocation matches the unmet needs and building quality of the various types of districts.

Figure 9 displays the unmet facilities needs of the various types of districts. It shows that Small Districts possess the most unmet needs, approximately double those of the Poor not Small Districts, triple those of Other Districts, and over six times those of Growing Districts. Given these results, one would expect small districts to be the primary beneficiaries of SFCC funding.

Figure 9: Unmet Needs Per Pupil



Comparing Figures 8 and 9, it appears reasonable that Growing Districts receive the least amount of funding since they have the least unmet needs. This result was expected because Growing Districts receive funds to construct new facilities for their expanding student bodies. These new facilities should not have unmet needs, which would reduce the per-pupil unmet needs of Growing Districts. It also seems appropriate that Other Districts receive more funding than Growing Districts but less than Poor not Small Districts. However, a mismatch exists between the funding received by Small Districts and their unmet needs. Both types of Small Districts have far greater unmet needs than any other type of district, but receive slightly less funding than Other Districts and far less than Poor not Small Districts.

A similar comparison can be made between funding levels and building quality. Figure 10 shows the building quality by the various types of districts, based on a student weighted average of the building quality in each district. Small Districts have lower quality buildings than any of the other types of districts, just as Small Districts have more unmet needs. The building quality figures reinforce the finding that Small Districts receive less funding than could be expected given their relatively low building quality and greater unmet needs.

Figure 10: Building Quality by District Type



The findings with regard to the mismatch between SFCC funding and the unmet needs and building quality of Small districts provide evidence consistent with concerns expressed to us regarding the ability of Small Districts to reap the full benefits of SFCC funding. The concerns related to Small Districts appear to have some basis in fact and should be addressed.

Very Small Districts

The issues related to small districts led us to examine such districts more closely. We conducted two examinations in which we divided the 40 small districts into three smaller groups. The first examination involved dividing the groups by natural breaks in the data. The three groups were Less Than 400 Students, 400-700 Students, and More Than 700 Students. The second examination involved dividing the small districts into roughly equal sized units. For this analysis, the three groups were Less Than 500 Students, 500-750 Students, and More Than 750 Students. Table 1 summarizes our findings with regard to these groups.

Table 1: Very Small Districts						
Statistic	Examination 1			Examination 2		
	< 400	400-700	> 700	< 500	500-750	> 750
Number of Districts	7	15	18	13	13	14
SFCC Offer	203.92	177.00	176.86	165.66	217.17	163.51
Total Funding	597.95	578.50	590.10	568.67	610.67	582.39
Per Pupil Unmet Needs	19,660.66	7,557.28	8,006.56	11,866.32	10,145.29	7,782.21
Building Quality	3.75	2.74	2.91	3.21	2.81	2.95

The main points shown by this table are the very low building quality and very high unmet needs of the smallest districts, particularly those with less than 400 students. Despite their great need, the very small districts receive less SFCC and Total Funding than Poor not Small districts (\$251.55 and \$649.75 for those sources, respectively). The problem tapers off somewhat as district size exceeds 700 students.

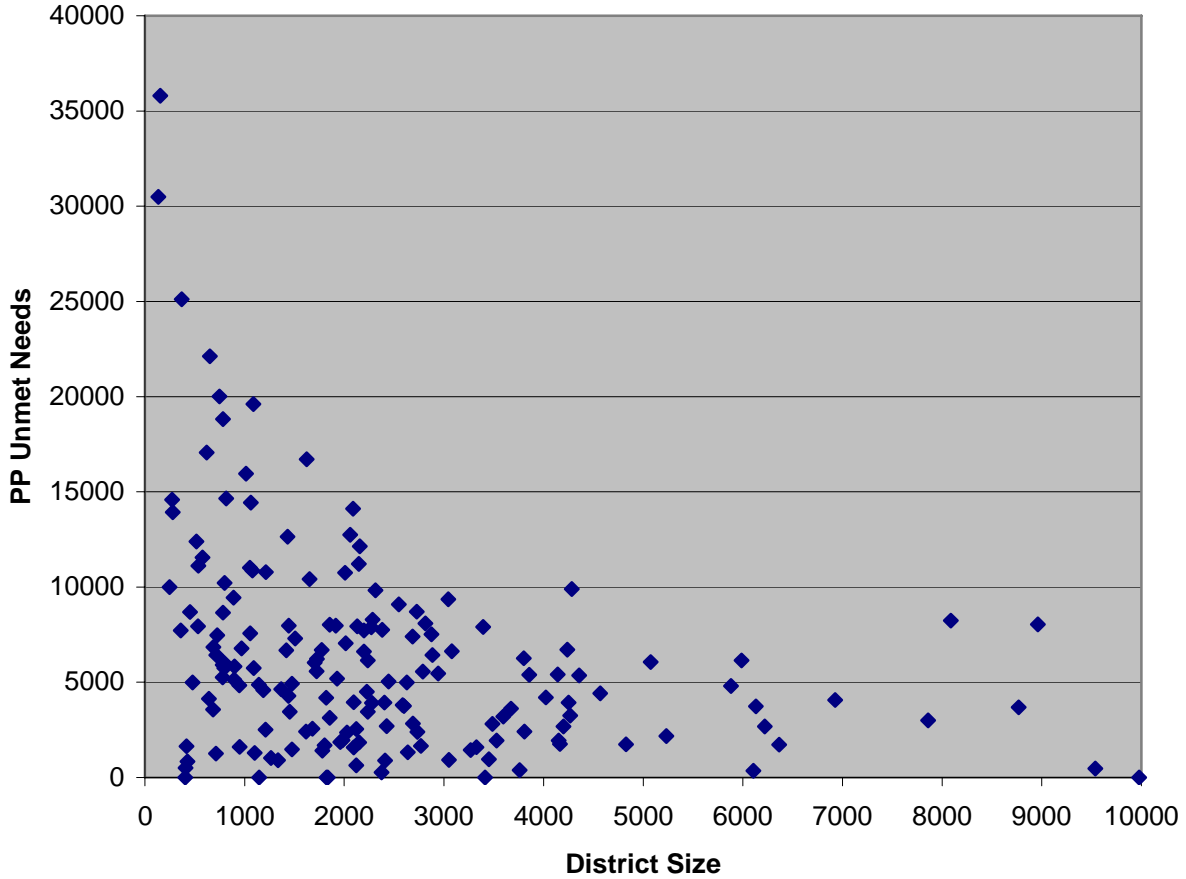
Also of interest is the influence on the table of districts with 400 – 500 students. Figure 11 is a scatter plot that displays districts size and unmet facilities needs.⁶ As the figure shows, 4 of the 6 districts with 400 – 500 students have extremely low unmet needs and greatly impact the results, especially given the small number of districts in each category.

While the biggest issues related to unmet needs involve very small districts, Figure 11 shows that the issues also impact certain other districts that have less than 2,200 students. Figure 11 looks like the top half of a funnel, with per pupil unmet needs in the range of \$0 to \$10,000 for districts with greater than 2,200 students, but below that threshold, some districts experience unmet need that exceed \$10,000 per pupil.

The district with greatest unmet needs, Southgate, is a true oddity. This very small district is one of the wealthiest in the state, as it is one of only six districts that did not receive equalization of the first nickel in 2004-05. It also is one of two districts statewide that, since at least 1990, has chosen not to participate in the SFCC program. Southgate has one school building, with a building quality rating of 2, which is quite good. Yet it possesses \$35,000 in per pupil unmet needs, which does not match the remainder of the profile for the district. The other districts that exceed \$20,000 in per pupil unmet needs have buildings of much lower quality, as would be expected.

⁶ Figure 11 cuts off at districts with 10,000 students in order to display the left side of the figure in greater detail. The larger districts not shown in the figure show similar results as districts with between 5,000 and 10,000 students.

Figure 11: Per Pupil Unmet Needs by District Size



Independent Districts

We were also asked to examine whether the unmet needs and facilities quality findings were impacted by the existence of independent school districts, many of which are very small. For that reason, we separated out independent school districts and examined separately the unmet facilities needs, building quality, and funding of county and independent school districts in the following three categories: small districts, districts that are not small, and all districts. These results are presented in Table 2.

Table 2 shows that no significant differences exist between small independent and small county districts in terms of unmet needs and building quality, yet small independent districts receive \$50 less per pupil in SFCC funding and \$35 less in total funding per pupil than small county districts.

Table 2: Independent vs. County School Districts						
	Small Independent	Small County	Not Small Independent	Not Small County	All Independent	All County
Unmet Needs PP\$	9,861.90	9,940.16	5,626.89	4,885.58	8,136.52	5,217.03
Building Quality	2.99	3.01	2.83	2.34	2.92	2.38
SFCC PP\$	171.54	222.08	91.38	209.59	138.88	210.40
Total PP\$	580.01	615.58	552.66	694.10	568.86	688.95
Students	605.66	654.04	1,997.89	4,462.82	1,172.86	4,213.06

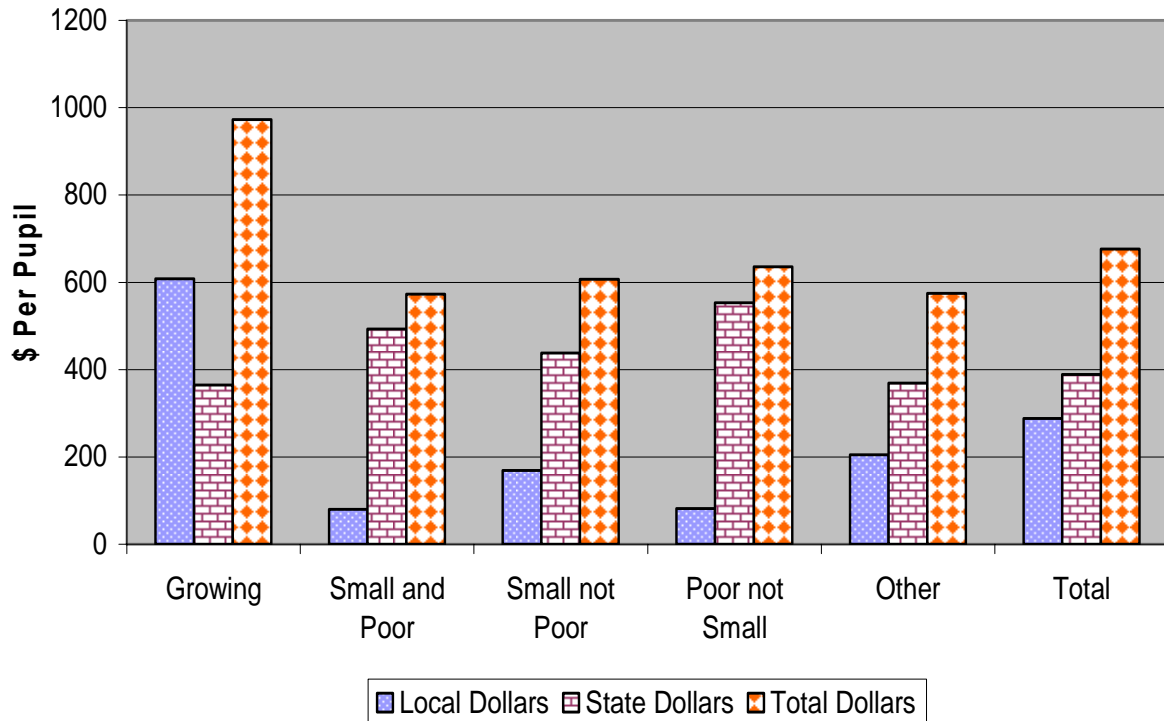
Table 2 shows an across the board difference between not small independent districts and not small county districts. The independents possess lower quality buildings, have higher unmet needs, yet receive less funding. The two types of districts differ greatly in terms of average enrollment as well, since not small independents serve far fewer students than their county district counterparts. In fact, the average not small independent district serves less than two thousand students, placing it in the range of enrollment that feels the effects of district size, as indicated in Figure 11. It appears that the differences between independent districts and county districts result largely from the number of students served.

SECTION 6: LOCAL VS. STATE FUNDING

The final issue that this report addresses involves the ultimate source of funding, local versus state. We have been informed that several districts, certain Growing Districts in particular, think that too high a percentage of their funding comes from local funds. On a statewide basis, the percentage of facilities funding from local sources has climbed from about 30% in 1990-91 to about 43% in 2004-05. The figure approaches 63% for Growing Districts. The reliance of the growth funds on taxation nickels also means that Growing Districts have a higher effective tax rate than most of the other districts in the state.

Figure 11 shows the source of facility funding for the various types of districts in Kentucky. Growing Districts on average have access to a great deal more facilities funds. However, the majority of their funding comes from local sources, while they receive the smallest amount of per-pupil funding from state source of any of the district types. In contrast, most non-growing districts received the majority of their funding from state sources.

Figure 12: District Revenues by Source



A comparison of Growing Districts with the rest of the state shows why their local share is so high. Growing Districts have higher equivalent values per-pupil than other types of districts, so they receive less state equalization funding than other districts. They also receive the least funding per-pupil from the SFCC unmet and urgent needs programs, another important source of state funding. In addition, their \$396.53 of growth funding comes from the locally assessed First and Second Growth Nickels and the state equalization of the First Growth Nickels, so this source is largely local as well (See Table 8 for a breakdown of funding by program type and district type).

In brief, the growth funds cause three main effects. Growing Districts have higher effective tax rates for facilities than other districts, but they also tend to have higher quality facilities and fewer unmet facilities needs. Each of these three effects impacts horizontal equity in a negative manner, since the ideal condition for horizontal equity would be identical tax rates, building quality, and unmet needs across the state.

The legislature, in essence, has created a funding system that induces Growing Districts to levy a higher tax rate in exchange for better facilities. Evaluating the wisdom of that decision goes far beyond the scope of this report. We can simply note that the growth funding option selected by the legislature adversely impacts horizontal equity, serves the vertical equity objective of enabling rapidly growing districts to meet their need for additional facilities, and requires the

Growing Districts to pay a higher tax rate for the benefit of receiving better quality facilities. We further note that this situation differs from the more common type of effective tax rate issue in which poor districts levy a higher tax rate, yet also have lower quality facilities due to their relatively low capacity to raise revenues, as discussed in Arsen, et al (2005).

The Task Force asked us to investigate the effect of permitting every district to levy the Growth Nickels. This policy would increase the horizontal equity of the system, especially given the equalization of the First Growth Nickel. Of course, it would also defeat the policy objective of providing extra funding to Growing Districts. If every district chose to levy these additional taxes, the increase in local and state revenues is easy to calculate. Growing Districts would not be included in the additional amount, so the increase to the other districts would equal 2 times their local FSPK plus their state FSPK equalization, which totals to about \$140,000,000 in local taxes and about \$51,000,000 in state equalization.

The actual values would be less than these figures because not every district would choose to levy the taxes. Among Growing Districts, 7 of the 26 districts did not levy the Second Growth Nickel. If we assume that districts with a building quality better than 2.00 would not levy the taxes, the local increase drops to \$121,000,000 and the state increase to \$43,000,000. We note that these figures are only as good as the assumptions underlying them, none of which can be assessed accurately given the scope of our work.

SECTION 7: RECOMMENDATIONS

The following recommendations target the equity concerns that we discussed in the previous sections. The equity of the Capital Outlay and FSPK programs is nearly ideal, so we make no recommendations for change with regard to them; the state should retain them in the system. We cannot comment, however, on whether the amount of funds provided by the sources is adequate. In contrast, the other three types of programs we discussed earlier (those focused toward Growing Districts, unmet and urgent facilities needs, and the Recallable Nickel and the EFF) reduced the horizontal equity of the system. We have set forth recommendations with regard to them.

The most serious equity concerns were associated with the Recallable Nickel and EFF programs. These programs had a negative impact on horizontal equity and had unclear benefits as to the vertical equity of the system. The EFF program appears to be inconsistent with the principles of horizontal equity, especially as applied to growing districts that would receive equalization of the Second Growth Nickel, since growing districts already tend to be funded at a higher level than the rest of the districts in the state.

The Recallable Nickel differs from the EFF because it serves the goal of increasing local control over funding, which usually operates at odds with equity. In addition, up to 2004-05 this nickel was not equalized, which meant that it provided greater potential revenues to those districts with greater equivalent values. The inequities associated with this source needed to be addressed.

And indeed, the legislature equalized the Recallable Nickel for the 2005-06 up to 150 percent of the state average property wealth per pupil, which gave each district a more equal incentive to participate in this revenue stream. The Recallable Nickel would be likely to retain horizontal inequities under this approach, since not every district would opt to utilize it. However, equalization at least cures the problem of some districts possessing the ability to raise more revenues than others.

Perhaps the most serious funding equity issue in the state relates to small districts. These districts, whether independent or county operated, tend to have lower quality buildings and greater unmet needs than larger districts, which is an inequitable situation. The ultimate responsibility for educating children in Kentucky belongs to the state, so the legislature needs to decide how to resolve these issues. The most obvious solution would be to provide more funding to small districts. It is possible that some economies of scale could be attained if there were fewer small districts, but that is a different policy issue than we were asked to consider. Moreover, the resulting school configurations and school facilities would still need to be funded fairly and adequately. We make no recommendation regarding which option the state should choose, except to note that the small district facilities issues exist for both county and independent districts. The following recommendations are based on the assumption that the state retains the current district configuration, necessitating the need for additional facilities funding for small districts.

The growth funds are another source of horizontal inequity. As discussed above, legitimate policy reasons exist for introducing this form of inequity into the system. However, given the fact Growing Districts have higher quality buildings and less unmet needs, we recommend that the legislature consider whether it should repeal the Second Growth Nickel and the Growth Nickel equalization. The state may have set aside too much funding for these districts when there are other districts that have greater facilities needs, such as Small Districts. An analysis of the adequacy of the system would be required for us to advise the state regarding whether the new growth funds are excessive, so we limit our recommendation to advising the state reconsider these sources.

Another option would be to open the growth funds to each district. We provided above an estimate of the cost of so doing. This option would be very likely to increase the horizontal equity of the system, but it might come at the expense of vertical equity, if the Growing Districts actually need these funds due to their greater needs. This is another question of policy and adequacy that goes beyond the scope of this report.

The SFCC programs also could be modified to function more equitably. The purpose of the SFCC programs is to address the vertical equity of the system by providing more funding to districts with greater and/or immediate needs. However small districts tend to have the greatest unmet needs and the lowest quality buildings, yet they receive SFCC offers and debt service far less than that of Poor districts and at about the same level as "Other" districts. This issue is particularly acute with regard districts with less than 400 students. A mechanism should be put into place to ensure that Small Districts receive the funding they need to improve the outcome equity of the system. Perhaps some portion of the Growth Nickel equalization and/or the Urgent

Needs funding should be directed to Small Districts until the building quality and unmet facilities needs of Small Districts become equal to those of the rest of the districts in the state. Another possible solution would be to further extend the amount of time that a district has to obligate its SFCC from eight years to a period of time long enough for Small districts to accumulate enough overall funding to address their facilities needs.

Some other recommendations would be helpful as the state endeavors to improve the equity of facilities finance. One crucial improvement would be to develop a system of school facilities quality that meets the needs of equity analyses and can be applied uniformly across the state. The current system was not intended to be used for this purpose, so it contains certain features that make it a poor measure for the purpose of this analysis. Some basic issues include:

- The consistency of the scoring (e.g., does a “2” awarded in northern Kentucky mean the same as a “2” awarded in eastern Kentucky?)
- The meaning of the scale (e.g., is the difference between a “1.5” and a “2” equal to the difference between a “2” and a “2.5”?). To be technical, the current system contains rank order data, while interval data would be preferable for analysis purposes
- The calculation of the scale (i.e., are the proper elements measured and are they weighted appropriately?)
- The relation between multiple variables (i.e., can the building scores for districts with multiple buildings be added together and/or averaged in a meaningful way, such that one would know whether a district with two schools that each rated at “2.5” had equal facilities quality as a district with one school that is a “2” and one that is a “3”?)

The state’s ability to analyze facilities equity (and adequacy) would improve if it had a better measure of facilities quality. The state has discussed taking steps in that direction, a move that we strongly endorse.

It also seems to us that the state, through the growth nickels, the recallable nickel, and perhaps the EFF as well, was attempting to add revenues for facilities to the system. It seems possible that the implicit goal of these efforts was to enhance the first and equalized growth nickels into either two equalized nickels or possibly an equalized dime, and to make these equalized funds available to all districts. In fact, if all districts were eligible to participate in the first growth nickel and the equalized nickel, then all districts would have at least two nickels of equalized local effort available for supporting facilities needs. We note that other than the districts that levy growth nickels, there is a high level of unmet facilities needs.

This suggests that another recommendation of this study would be that the state increase the FSPK to two equalized nickels. Given the substantial unmet need across the state, one could argue that the second equalized nickel should be required. If so, we would recommend that a second nickel include the current equalized growth nickel, the recallable nickel and the EFF and that all three programs be combined into a second equalized FSPK nickel. In this case, the

recallable nickel would no longer be recallable but rather would be part of the first two nickels. The end result of this change would be two FSPK nickels for each district and an unequalized nickel for growth districts.

Alternatively, the second FSPK nickel proposed in the paragraph above could be optional, again subsuming the equalized growth nickel, recallable nickel, and EFF for any district that already has any of them. The benefit of making the nickel optional would be that districts with high quality facilities could opt to levy a lower tax rate. We think this strategy of adding a second nickel to the FSPK program would go a long way toward reducing the unmet facilities needs that currently exist.

This state policy would increase the amount of equalized funds for facilities from the current \$400 per pupil (the \$100 per pupil from the Capital Outlay program and the approximately \$300 from the first nickel) to around \$700 per pupil. The EFF program could then be dropped and funding for that program would appropriately be used to help fund the addition of the second nickel for all districts.

Another option, either by itself or in conjunction with the above recommendation, is that the state increase the \$100 per pupil that is now part of the Capital Outlay. Clearly, increasing the Capital Outlay amount would be more costly to the state as it would need to hike the SEEK level at the same time, and there would not be a local district contribution to that funding.

If these changes were adopted, they would increase the funding received by most districts. We think it important that the state retain the SFCC program, as it would continue to direct funding toward those districts that have unmet facilities needs even after the addition of the second FSPK nickel. Under these circumstances, which include making the second nickel in the FSPK program optional, we would also recommend the state require each district to fully levy the second nickel before it was eligible to receive additional funding from the SFCC.

Finally, we would recommend that the state consider a follow-up study that addresses the adequacy of school facilities. Adequacy has been the driving force in education reform in Kentucky, so it would make sense to apply the same approach to facilities funding. It probably would make the most sense to conduct this study after the reform of the building quality assessment, so that a better instrument could be used to undertake this examination.

In sum, Kentucky has moved far beyond the traditional local funding for educational facilities and has taken steps to improve the equity – and level – of its facilities funding programs. However, inequities remain in the system, some for policy reasons and others of a seemingly more ad hoc nature. Moreover, substantial unmet facilities needs remain in the system. Recent changes to the system have reduced the horizontal equity of the system, often without addressing clear issues of vertical equity. The facilities funding system would benefit from some modifications to increase its equity as well as its overall level of funding. That said, Kentucky's program has many worthwhile aspects that form the basis of a sound facilities funding program and leave it ahead of most of the other states in the nation.

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APPENDIX

Table A1: Total Funding (SFCC Offers)															
	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05
Mean (District)	243.35	286.47	317.08	324.32	346.35	354.83	391.32	402.11	425.65	447.59	481.77	504.04	542.24	610.16	652.11
SD (District)	67.77	78.66	79.70	81.87	83.37	85.68	86.94	90.20	93.36	99.71	105.34	114.17	113.91	173.44	192.52
CV (District)	0.28	0.27	0.25	0.25	0.24	0.24	0.22	0.22	0.22	0.22	0.22	0.23	0.21	0.28	0.30
Mean (Pupil)	259.52	298.48	323.24	330.47	356.05	366.28	402.63	414.93	437.22	460.25	494.29	518.81	549.32	640.13	676.44
SD (Pupil)	60.29	69.82	69.66	71.69	79.33	81.01	87.46	91.21	97.45	102.38	109.65	114.33	114.49	206.35	221.24
CV (Pupil)	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.32	0.33
Range	402.71	461.13	479.07	445.50	448.48	442.70	432.49	417.14	493.79	518.37	576.01	586.80	479.03	814.50	1099.50
Federal Range	195.61	224.93	230.64	232.52	278.95	275.50	321.74	324.80	339.81	329.77	337.28	363.74	368.60	601.08	621.98
FRR	1.15	1.11	0.96	0.95	1.09	1.07	1.09	1.06	1.05	0.97	0.91	0.95	0.88	1.37	1.35
McLoone	0.84	0.88	0.88	0.87	0.87	0.88	0.88	0.89	0.89	0.88	0.89	0.87	0.89	0.88	0.87
Verstegen	1.21	1.24	1.23	1.22	1.23	1.24	1.24	1.25	1.25	1.24	1.24	1.23	1.25	1.44	1.46
Correlation	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.02	0.02
Elasticity	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	0.01
Gini	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.17	0.18

Table A2: Total Funding (SFCC Obligations)															
	1990-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	2000-01	01-02	02-03	03-04	04-05
Mean (District)	236.49	264.36	309.62	316.32	342.76	354.53	395.10	399.41	426.50	433.27	483.04	497.21	541.44	581.15	611.97
SD (District)	71.14	77.74	83.27	83.06	85.65	88.85	93.81	94.30	97.71	100.91	112.49	117.67	119.00	171.73	176.30
CV (District)	0.30	0.29	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.23	0.24	0.22	0.30	0.29
Mean (Pupil)	243.16	273.78	311.87	319.23	350.02	362.22	401.54	408.59	433.73	443.10	491.06	509.44	546.95	617.04	646.36
SD (Pupil)	58.00	64.70	67.90	68.52	77.61	79.71	89.00	91.98	98.54	102.72	110.87	115.09	117.33	207.83	216.86
CV (Pupil)	0.24	0.24	0.22	0.21	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.21	0.34	0.34
Range	400.39	414.35	482.46	451.32	451.10	445.93	477.30	415.88	494.89	511.52	575.90	586.28	511.24	802.27	787.97
Federal Range	192.38	195.61	208.67	207.00	281.98	281.96	319.15	326.66	333.38	333.99	340.84	340.40	368.16	612.99	630.93
FRR	1.15	1.01	0.89	0.86	1.14	1.14	1.11	1.13	1.06	1.04	0.92	0.90	0.88	1.45	1.42
McLoone	0.83	0.81	0.89	0.89	0.87	0.88	0.87	0.88	0.88	0.89	0.88	0.87	0.90	0.88	0.88
Verstegen	1.19	1.17	1.24	1.25	1.24	1.25	1.24	1.25	1.25	1.27	1.25	1.25	1.27	1.46	1.46
Correlation	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.02	0.03
Elasticity	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.00	-0.01	0.02
Gini	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.18	0.18

Table A3: Total Funding (SFCC Offers, Omitting New Sources)															
	1990-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	2000-01	01-02	02-03	03-04	04-05
Mean (District)	243.35	286.47	317.08	324.32	346.35	354.83	391.32	402.11	425.65	447.59	481.77	504.04	542.24	567.62	588.96
SD (District)	67.77	78.66	79.70	81.87	83.37	85.68	86.94	90.20	93.36	99.71	105.34	114.17	113.91	118.55	119.06
CV (District)	0.28	0.27	0.25	0.25	0.24	0.24	0.22	0.22	0.22	0.22	0.22	0.23	0.21	0.21	0.20
Mean (Pupil)	259.52	298.48	323.24	330.47	356.05	366.28	402.63	414.93	437.22	460.25	494.29	518.81	549.32	575.97	595.80
SD (Pupil)	60.29	69.82	69.66	71.69	79.33	81.01	87.46	91.21	97.45	102.38	109.65	114.33	114.49	118.29	120.02
CV (Pupil)	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.21	0.20
Range	402.71	461.13	479.07	445.50	448.48	442.70	432.49	417.14	493.79	518.37	576.01	586.80	479.03	516.35	522.02
Federal Range	195.61	224.93	230.64	232.52	278.95	275.50	321.74	324.80	339.81	329.77	337.28	363.74	368.60	386.46	389.01
FRR	1.15	1.11	0.96	0.95	1.09	1.07	1.09	1.06	1.05	0.97	0.91	0.95	0.88	0.88	0.85
McLoone	0.84	0.88	0.88	0.87	0.87	0.88	0.88	0.89	0.89	0.88	0.89	0.87	0.89	0.89	0.89
Verstegen	1.21	1.24	1.23	1.22	1.23	1.24	1.24	1.25	1.25	1.24	1.24	1.23	1.25	1.24	1.24
Correlation	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.00
Elasticity	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	0.00
Gini	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11

Table A4: Total Funding (SFCC Obligations, Omitting New Sources)															
	1990-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	2000-01	01-02	02-03	03-04	04-05
Mean (District)	236.49	264.36	309.62	316.32	342.76	354.53	395.10	399.41	426.50	433.27	483.04	497.21	541.44	547.61	571.46
SD (District)	71.14	77.74	83.27	83.06	85.65	88.85	93.81	94.30	97.71	100.91	112.49	117.67	119.00	117.26	117.92
CV (District)	0.30	0.29	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.23	0.24	0.22	0.21	0.21
Mean (Pupil)	243.16	273.78	311.87	319.23	350.02	362.22	401.54	408.59	433.73	443.10	491.06	509.44	546.95	559.17	581.31
SD (Pupil)	58.00	64.70	67.90	68.52	77.61	79.71	89.00	91.98	98.54	102.72	110.87	115.09	117.33	119.37	121.31
CV (Pupil)	0.24	0.24	0.22	0.21	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.21	0.21	0.21
Range	400.39	414.35	482.46	451.32	451.10	445.93	477.30	415.88	494.89	511.52	575.90	586.28	511.24	490.14	498.94
Federal Range	192.38	195.61	208.67	207.00	281.98	281.96	319.15	326.66	333.38	333.99	340.84	340.40	368.16	373.55	383.98
FRR	1.15	1.01	0.89	0.86	1.14	1.14	1.11	1.13	1.06	1.04	0.92	0.90	0.88	0.89	0.87
McLoone	0.83	0.81	0.89	0.89	0.87	0.88	0.87	0.88	0.88	0.89	0.88	0.87	0.90	0.89	0.89
Verstegen	1.19	1.17	1.24	1.25	1.24	1.25	1.24	1.25	1.25	1.27	1.25	1.25	1.27	1.26	1.25
Correlation	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.00
Elasticity	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.00	-0.01	0.00
Gini	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.09	0.12

Table A5: Five Year Total Funding (SFCC Offers, Omitting New Sources)											
	1990-95	1991-96	1992-97	1993-98	1994-99	1995-200	1996-200	1997-200	1998-200	1999-200	2000-05
Mean (District)	1517.58	1629.05	1733.90	1818.93	1920.26	2021.51	2148.45	2261.17	2401.29	2576.80	2758.66
SD (District)	376.31	396.13	402.10	415.46	433.15	452.61	470.83	495.19	517.96	573.84	640.64
CV (District)	0.25	0.24	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.23
Mean (Pupil)	1567.96	1674.19	1778.05	1869.84	1977.09	2081.33	2209.29	2325.38	2460.01	2654.46	2853.97
SD (Pupil)	333.64	354.06	367.63	392.82	427.93	456.46	484.04	508.32	530.09	609.93	712.83
CV (Pupil)	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.23	0.25
Range	2171.30	2240.52	2143.10	2104.35	2132.43	2154.12	2304.89	2417.93	2441.99	2718.14	3019.91
Federal Range	1111.41	1177.43	1253.50	1346.81	1575.39	1602.47	1659.69	1666.99	1682.46	1922.91	2148.40
FRR	1.00	0.98	0.97	1.00	1.10	1.05	1.02	0.97	0.92	0.98	1.03
McLoone	0.89	0.88	0.88	0.88	0.87	0.89	0.89	0.87	0.87	0.88	0.89
Verstegen	1.23	1.22	1.21	1.22	1.22	1.25	1.24	1.22	1.22	1.26	1.32
Correlation	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.01
Elasticity	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.01
Gini	0.12	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.13	0.14

Table A6: Five Year Total Funding (SFCC Obligations)											
	1990-95	1991-96	1992-97	1993-98	1994-99	1995-2000	1996-2001	1997-2002	1998-2003	1999-2004	2000-05
Mean (District)	1469.55	1587.60	1718.34	1808.12	1918.30	2008.81	2137.33	2239.43	2381.47	2536.12	2714.82
SD (District)	373.59	395.65	413.10	429.10	451.05	472.15	492.53	512.59	535.43	585.20	651.48
CV (District)	0.25	0.25	0.24	0.24	0.24	0.24	0.23	0.23	0.22	0.23	0.24
Mean (Pupil)	1498.19	1616.78	1744.33	1841.16	1956.17	2049.18	2177.86	2285.59	2424.32	2605.52	2807.72
SD (Pupil)	309.54	332.68	356.12	385.75	426.04	458.47	487.30	510.21	533.64	616.34	722.47
CV (Pupil)	0.21	0.21	0.20	0.21	0.22	0.22	0.22	0.22	0.22	0.24	0.26
Range	2080.35	2162.30	2130.96	2035.85	2081.42	2162.19	2294.52	2410.61	2451.34	2722.51	2998.96
Federal Range	988.11	1092.26	1256.37	1346.41	1555.12	1606.56	1619.78	1639.15	1673.41	1897.88	2213.04
FRR	0.90	0.93	1.00	1.02	1.12	1.10	1.01	0.97	0.92	0.99	1.09
McLoone	0.89	0.91	0.88	0.87	0.88	0.88	0.88	0.87	0.87	0.88	0.89
Verstegen	1.23	1.25	1.22	1.22	1.24	1.25	1.25	1.23	1.23	1.27	1.34
Correlation	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.01
Elasticity	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.01
Gini	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.14

Table A7: Capital Outlay and FSPK Funding															
	1990-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	2000-01	01-02	02-03	03-04	04-05
Mean (District)	188.92	200.89	233.15	234.00	246.40	247.89	282.58	283.77	305.66	306.40	335.95	336.45	373.45	374.07	394.81
SD (District)	25.65	21.40	24.95	23.34	17.01	13.87	12.58	10.50	11.28	12.17	12.27	13.96	7.67	10.27	10.23
CV (District)	0.14	0.11	0.11	0.10	0.07	0.06	0.04	0.04	0.04	0.04	0.04	0.04	0.02	0.03	0.03
Mean (Pupil)	202.50	212.96	239.58	241.72	252.98	254.37	286.89	289.62	309.65	313.54	341.94	345.71	375.72	379.15	397.60
SD (Pupil)	32.60	27.89	22.19	20.55	18.07	15.47	13.45	14.50	13.01	18.19	17.54	22.41	10.11	15.39	12.87
CV (Pupil)	0.16	0.13	0.09	0.09	0.07	0.06	0.05	0.05	0.04	0.06	0.05	0.06	0.03	0.04	0.03
Range	166.80	181.85	208.08	202.87	216.55	214.08	204.48	156.17	171.69	168.48	180.49	198.59	89.22	106.87	119.93
Federal Range	102.43	111.43	84.46	78.93	48.57	49.15	34.92	44.67	31.03	49.53	49.78	68.12	41.40	54.91	50.83
FRR	0.67	0.62	0.43	0.39	0.20	0.20	0.12	0.16	0.10	0.16	0.15	0.20	0.11	0.15	0.13
McLoone	0.89	0.95	0.96	0.97	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Verstegen	1.13	1.12	1.04	1.05	1.06	1.06	1.04	1.05	1.03	1.06	1.04	1.07	1.02	1.04	1.02
Correlation	-0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Elasticity	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gini	0.09	0.07	0.04	0.03	0.03	0.02	0.02	0.02	0.01	0.02	0.02	0.03	0.01	0.01	0.01

Table A8: Funding By Sources					
District Type	Capital Outlay & FSPK	Growth	SFCC	Recallable Nickel & EFF	Total
Growing	395.56	396.42	123.96	8.41	924.35
Small and Poor	393.50	0.00	181.11	4.87	579.48
Poor not Small	393.50	0.00	251.55	4.70	649.75
Small not Poor	399.68	0.00	182.19	12.89	594.76
Other	394.09	0.00	195.48	12.77	602.34

Table A9: Unmet Needs Per Pupil	
District Type	Unmet Needs
Growing	\$3,764.46
Small and Poor	\$9,825.93
Small not Poor	\$9,929.16
Poor not Small	\$5,125.63
Other	\$5,339.70
Total	\$6,112.78

Table A10: Building Quality by District Type	
District Type	Building Quality
Growing	2.06
Small and Poor	3.00
Small not Poor	2.98
Poor not Small	2.51
Other	2.49

Table A12: District Revenues by Source						
Funding Source	Growing	Small and Poor	Small not Poor	Poor not Small	Other	Total
Local Dollars	608	80	169	82	205	288
State Dollars	365	493	438	553	369	389
Total Dollars	973	573	607	635	575	676