

# POLICY REPORT

## MINORITIES AND EQUITY-RELATED FUNDING ISSUES IN SOUTH CAROLINA'S PUBLIC SCHOOLS

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### INTRODUCTION

Whereas an educational system focusing on equality will provide the same resources for all students, equitable systems attempt to compensate for disparities, adjusting resources to match students' specific needs and circumstances. Equity often addresses inconsistencies in local resources as well as differences in students' educational backgrounds and learning needs, acknowledging that certain groups of students may need more resources than others in order to be successful (Ladd, 2008; Owings & Kaplan, 2006).

Funding disparities are critical because they are often reflected in important indicators of educational quality, e.g., school facilities, curricula, teachers' salaries, and instructional materials and equipment (Barton, 2003; Biddle, 1997). Examining these disparities can be a crucial first step in addressing differential outcomes in areas such as test scores and academic achievement. Highlighting funding discrepancies can bring them to the attention of researchers and policy makers. At the same time, eliminating inequitable funding as a possible source of outcome variability allows policy makers to focus on other areas that may be contributing to the issue.

Because of the scope and complexity of fiscal equity, this policy report focuses solely on two measures, assessed value per pupil and revenue per pupil in a single state. It follows a relatively standard practice of addressing fiscal neutrality and horizontal and vertical equity. However, this report expands the usual district by district evaluation to include the racial composition of these areas where applicable (See Table 1). Findings indicate that, while resources vary dramatically across South Carolina, measures of revenue per pupil are higher in districts with larger minority populations. This results in an inequitable distribution of resources but not in the manner that might be expected.

### MEASURING FISCAL EQUITY IN EDUCATION

There are various measures used to assess equity in education finance. Because most education funding is locally based, fiscal neutrality measures the extent that resources for education depend on the wealth of the area in which a student lives. A correlation coefficient is used to assess the degree to which two variables, in this case, local taxable wealth and school revenue, are related. Elasticity, or the percent change in one variable relative to a 1% change in another variable, provides the policy relevance of the relationship. An elasticity of 1.0 or more could indicate, for example, that spending increases at the same or higher rates than increases in property wealth.

0% - 50% - Low Minority (N=40)
51% - 80% - Moderately Minority (N=31)
81% - 100% - Heavily Minority (N=14)

Elasticity below 1.0 would indicate spending does not increase at the same percentage rate as property wealth (Berne & Stiefel, 1984; Odden & Picus, 2000). A recommended standard for fiscal neutrality is a correlation coefficient less than 0.5 and an elasticity measure less than 0.1 (Odden & Picus, 2000).

Horizontal equity implies the equal treatment of similar students with comparisons often being made across sub-groups, i.e., high school students, low-income students, minority students, etc., to determine if funding is equitable. Measures of this concept focus on the spread or dispersion of a distribution. There are several measures of range, the simplest of which is merely the difference between the highest and the lowest observations. The restricted range measures observations close to the top and close to the bottom of the distribution, eliminating somewhat the effects of outliers. The federal range ratio is another version of the range statistic consisting of the restricted range divided by the observation at the 5<sup>th</sup> percentile. As a ratio, this measure does not increase with inflation, a major criticism of other range statistics (Berne & Stiefel, 1984; Odden & Picus, 2000; Owings & Kaplan, 2006).

The McLoone index indicates the degree of equality for observations below the median or 50<sup>th</sup> percentile and is often of interest to policy makers. It ranges in value from zero to one with values generally falling in the 0.7 to 0.9 range: An index value greater than 0.95 is considered most desirable. The coefficient of variation (CV) indicates the percent variation around the mean. The higher the value of the CV, the greater the degree of inequality in the object being measured. Few states have a CV of less than 10% for revenue-per-pupil measures. The Gini Coefficient is a measure of inequality that specifies the degree to which an object is equally distributed across a population (Berne & Stiefel, 1984; Odden & Picus, 2000). Gini Coefficients are generally in the 0.1 to 0.2 range. Although these may vary by locale or even by analyst, some scholars suggest a standard of 10% or less for the coefficient of variation and a value less than 0.05 for the Gini Coefficient (Odden & Picus, 2000).

Vertical equity or the unequal treatment of those who are not equal is somewhat more complex than horizontal equity and is often addressed using weights for different groups that correspond with the differential costs of serving these students (Ladd, 2008). The first step in addressing vertical equity is to determine what characteristics will be used to categorize each group. In education, these categories can include, for example, children from low-income homes or children with disabilities, each of whom costs more, on average to educate than non-poor or non-disabled students (Berne & Stiefel, 1984). The second step is to assign weights to students that correspond with these or other designated categories. Vertical equity can then be assessed by weighting all students in need of extra services and conducting a horizontal equity analysis (Odden & Picus, 2000). Vertical equity is usually satisfied when students with special needs actually receive more funding

than those without special needs (Berne & Stiefel, 1984).

## EDUCATIONAL EQUITY IN SOUTH CAROLINA

Educational equity is an issue in South Carolina for several reasons. First, the distribution of wealth differs significantly across the state, impacting the amount of local funding available for education in each district. Second, the state has a relatively large minority school population with some districts having minority enrollments over 90% (S.C. Department of Education, 2009). Finally, there are substantial differences in educational outcomes between African American and White students in the state (S.C. Department of Education, 2010) that call into question equity-related funding issues.

Education in South Carolina is funded essentially by state and local taxes with some federal contributions supplementing funding mainly for special needs and low-income populations. In 2006-2007, the state supplied the majority of funding for schools (46%) while the local share was approximately 43% and the federal contribution, about 10%. Local funding takes on special significance in education finance due both to its substantial share in the education funding mix and to its variation across districts and the related potential for generating disparities across the state (Ulbrich & Saltzman, 2009).

Assessed value per pupil is one measure of a district's ability to support education (Ulbrich & Saltzman, 2009). For 2006-2007, this value ranged from \$6,191 in Clarendon 3 to \$82,286 in Beaufort (See Figure 1). This represents a difference of \$76,095 between the wealthiest and poorest districts in the state and indicates rather extreme values between the most and least affluent counties. A measure less sensitive to extremes, the restricted range decreases to \$34,441 statewide and varies somewhat across districts with different concentrations of minority students (See Table 2). The median assessed value per pupil for the state is \$16,313 and also varies across districts (See Figure 3).

The amount of total revenue per pupil also indicates a discrepancy by district and by racial composition of the districts. The revenue per pupil (excluding capital projects and debt service) ranges from a low of \$7,018 in Anderson 1 to a high of \$12,068 in Spartanburg 7 with a median value across the state of \$8,819 (See Figure 2). The 14 heavily minority districts in the state receive somewhat more funding than the other districts (See Figure 3) with a greater percentage of their funding originating from federal sources (See Figure 4).

**Table 2**  
Measures of Dispersion for Assessed Value Per Pupil by Minority Categories

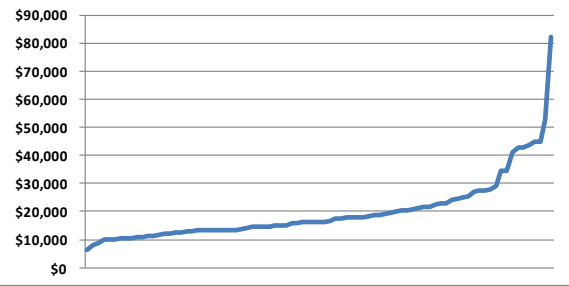
	State	Low Minority	Moderately Minority	Heavily Minority
Range	\$76,095	\$38,853	\$72,208	\$31,348
Restricted Range	\$34,441	\$36,702	\$54,230	----- <sup>a</sup>

Note: Calculated using data from the Rankings of the Counties and School Districts of South Carolina (2009).

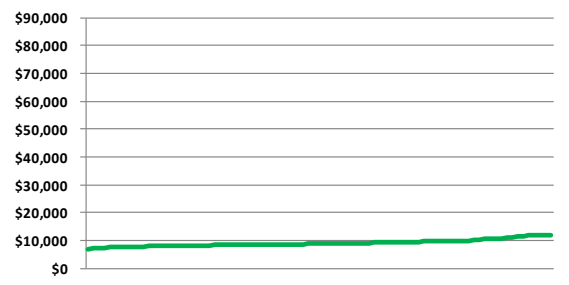
<sup>a</sup>There is no value at this percentile due to the small number of cases (n=14)

Although there is a great deal of variability in wealth across the state, a simple scatter plot shows little relationship between the assessed value per pupil and the total revenue per pupil across school districts (See Figure 5). Other indicators of fiscal neutrality such as correlation coefficients and elasticity also indicate that there is little or no relationship between these measures (See Table 3). However, the coefficient of variation, the Gini

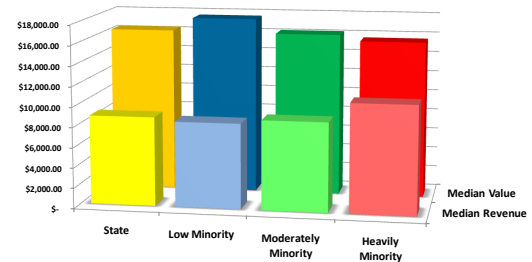
**Figure 1**  
Range of Assessed Value Per Pupil Among Districts Statewide: Ranked Values



**Figure 2**  
Range of Revenue Per Pupil Among Districts Statewide: Ranked Values



**Figure 3**  
Median Assessed Property Values and Median Per Pupil Revenue



	State	Low Minority	Moderately Minority	Heavily Minority
Median Revenue	\$8,819.00	\$8,457.60	\$8,861.00	\$10,793.00
Median Value	\$16,313.00	\$17,622.00	\$16,197.00	\$15,612.00

Note: Calculated using data from the Rankings of the Counties and School Districts of South Carolina (2009).

Coefficient, and the McLoone Index all show values for total revenue per pupil at the state level that fall below the standards set by Odden and Picus (2000) for equitable measures. These measures vary somewhat by minority category with the more homogenous groups tending to fare somewhat better on equity measures (See Table 4).

South Carolina schools use a variety of weighting factors to account for students with greater needs. These factors include grade levels (primary, kindergarten, elementary, high school), programs (vocational, pre-vocational), disability status, and homebound students (S.C. Department of Education, 2009). They do not however, include categories for low-income or less academically proficient students. For example, there is no weighting to provide additional resources for minority students who score "below basic" on the annual PACT test at relatively high rates, especially in districts that have greater numbers of these students (See Figure 6).

# POLICY REPORT

**Table 3**  
Measures of Fiscal Neutrality: Assessed Value Per Pupil and Total Revenue Per Pupil by Minority Categories

	State	Low Minority	Moderately Minority	Heavily Minority	Standard <sup>a</sup>
Spearman's Rho	0.251	0.293	.497	0.244	<0.5
Elasticity	0.062	0.081	0.050	0.051	<0.1

Note: Calculated using data from the Rankings of the Counties and School Districts of South Carolina (2009).

<sup>a</sup> According to Odden & Picus (2000)

**Table 4**  
Measures of Fiscal Equity: Total Revenue Per Pupil by Minority Categories

	State Level	Low Minority	Moderately Minority	Heavily Minority	Standard <sup>a</sup>
Coefficient of Variation	13%	9%	11%	8%	<10%
Gini Coefficient	0.071	0.049	0.055	0.046	<0.05
McLoone Index	0.927	0.932	0.948	0.928	>0.95

Note: Calculated using data from the Rankings of the Counties and School Districts of South Carolina (2009).

<sup>a</sup> Odden & Picus (2000)

When total revenue per pupil is adjusted to account for students with greater needs (the weighted pupil population), there are, not unexpectedly, slightly lower total revenue per pupil dollar amounts overall. Even so, the pattern is very similar to that of the unweighted population with higher minority districts receiving relatively greater amounts than those districts with low minority populations (See Table 5). Equity statistics remain essentially unchanged for the state weighted student population, continuing to fall below standards utilized in this report.

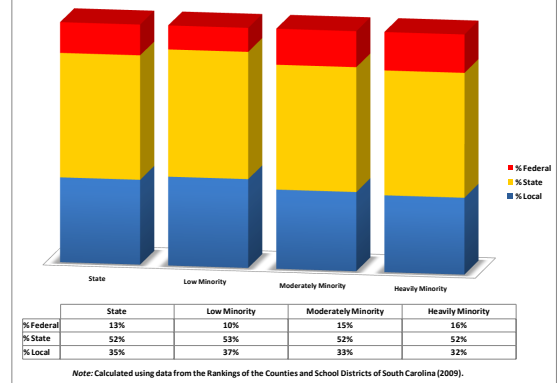
## IMPLICATIONS

Even as we see that there is more revenue per pupil available in higher minority districts, differences in outcomes remain. Percentages of minority students scoring "below basic" are substantially higher than percentages of White students on the 2007 Palmetto Achievement Challenge Test (S.C. Department of Education, 2007) and Whites continue to graduate from high school at higher rates than minorities (S.C. Department of Education, 2008). Minority students from South Carolina also lag behind others in taking core curriculum courses and in measures of college readiness (ACT, 2010). This finding that districts with high minority populations receive more resources while continuing to exhibit low academic performance, while not conclusive in itself, should encourage policy makers and others to seriously question the fundamental assumptions that are so often utilized in the process of developing and implementing education policy (i.e., more funding leads to better outcomes).

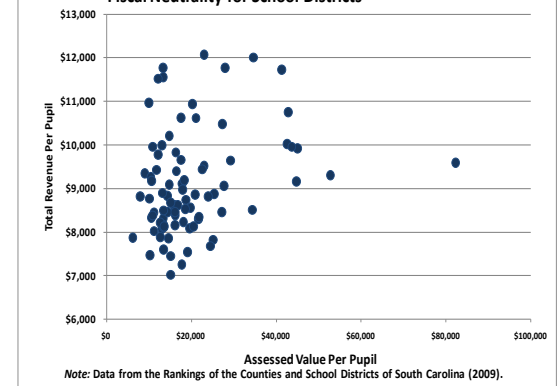
## RECOMMENDATIONS

- Expand the focus of this research to address the longitudinal nature of the problem. These findings may be atypical over time.
- Explore other aspects of education finance as it may relate to differential outcomes between groups. One possibility would be to look at how money is spent across districts and the impact of different spending patterns on outcomes. Special attention should be focused on the impact of federal Title I funding over the different districts. Another possibility would be to investigate historical spending patterns to determine if these may be influencing outcomes and, if so, to what extent.

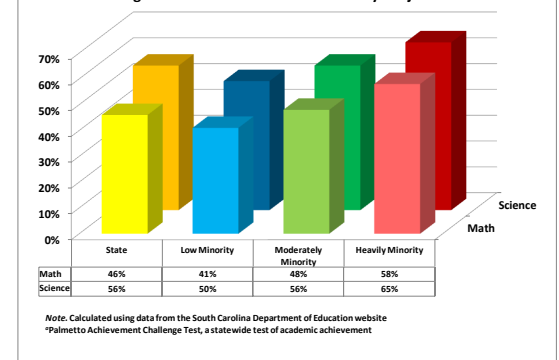
**Figure 4**  
Revenue Distribution by Local, State and Federal Sources



**Figure 5**  
Fiscal Neutrality for School Districts



**Figure 6**  
Median Percentage of 8th Grade African American Students Scoring BELOW BASIC on the PACT Test<sup>a</sup> by Subject Area



**Table 5**  
Weighted Measures: Revenue Per Pupil by Minority Classification

	State	Low Minority	Moderately Minority	Heavily Minority
Median	\$7,281	\$6,939	\$7,492	\$8,926
Range	\$4,353	\$2,587	\$3,189	\$2,563
Restricted Range	\$3,406	\$1,976	\$2,806	----- <sup>a</sup>

<sup>a</sup>There is no value at this percentile due to the small number of cases (n=14)

- Assess districts and schools not just for equitable funding but for the adequacy of funding as well.
- Recognize that for adequate and equitable outcomes (grades, test scores, graduation rates) across the state, much more must be

# POLICY REPORT

known about those districts and schools that are succeeding as well as those that are failing. Education finance is a critical piece of educational policy but does not function alone.

- Integrate education finance and other aspects of education, such as school reform, for a comprehensive, holistic approach.

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## ABOUT THE AUTHOR

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