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The Florida Education Finance Program from 1981 to 2009: A Historical Review and Equity Analysis

Curtis Todd Bowden
University of South Florida

The Florida Education Finance Program from 1981 to 2009:

A Historical Review and Equity Analysis

by

Curtis Todd Bowden

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of the requirements for the degree of
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Major Professor: Bobbie J. Greenlee, Ed.D.
Michael Bookman, Ph.D.
Darlene Bruner, Ed.D.
John M. Ferron, Ph.D.

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DEDICATION

To my beautiful wife Janene, when we first met I was a classroom teacher with big hopes and dreams. One of my most important hopes was that one day I would meet a woman like you that I could spend the rest of my life with. I thank you for coming into my life. I also dreamed of earning a doctoral degree. There were times when I wanted to quit, but you would not allow it. Because of you this dream is coming true, not for me but for us, and I thank you for it. Thank you for standing by me through countless promotions, transfers, and relocations as I pursued my professional ambitions. For all of your love, support, encouragement, and occasional nagging to get this done I dedicate this dissertation to you.

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TABLE OF CONTENTS

LIST OF TABLES vi

LIST OF FIGURES ix

ABSTRACT xiii

CHAPTER 1: INTRODUCTION 1
Adequacy Defined 2
Equity Defined 4
Adequacy Versus Equity Studies 6
The Case of Florida 8
Statement of the Problem 10
Research Question 11
Procedures 11
Phase 1 12
Phase 2 12
Measures of Dispersion of Variability and Variation 14
Phase 3 16
Independent Variables 17
Delimitations 17
Limitations 19
Justification for the Study 20
Definition of Terms 22
Organization of the Study 23

CHAPTER 2: HISTORICAT REVIEW OF THE DEVELOPMENT OF FLORIDA'S SCHOOL FINANCE PROGRAM FROM 1982 TO 2009 25
The FEFP Funding Formula in 1982 26
Full-time Equivalent (FTE) 27
Program Cost Factors 28
Base Student Allocation 28
Sparsity Supplement 28
District Cost Differential 28
Declining Enrollment & Guaranteed Minimum Levels 30
State & Local FEFP Dollars 31
Required Local Effort 32
State FEFP Dollars 32

Adjustments 32
Net State FEFP Allocation 32
Categorical Program Funds 33
Special Allocations 33
Total State Allocation 34
The Evolution of the FEFP 34
Changes to the District Cost Differentials 34
Calculation of the District Cost Differential 34
The Florida Price Level Index 36
Changes in the Program Cost Factors 37
The Number of Program Cost Factors 37
Program Caps 38
Additional Weighted FTE 42
Inclusion and Exclusion of Various Adjustments 42
Declining Enrollment Supplement and Guaranteed Minimum Levels 43
Guaranteed Minimum Level 44
Quality Assurance Guarantee 44
Equalization of Discretionary Levy 45
Profoundly Handicapped Adjustment 46
Sparsity Supplement 46
Salary Allocation and Assigned Allocation 47
Rapid Growth Supplement 48
Extended Day Allocation 48
Adequacy Supplement 48
Math/Science Incentive 49
Funding Adjustment 49
Hold Harmless Adjustment 50
Safe Schools Allocation 50
First Grade Class Size Reduction 51
Remediation Reduction Incentive 51
Disparity Compression Adjustment 52
Dropout Prevention Incentive 52
Supplemental Academic Instruction 53
ESE Guaranteed Allocation 53
Minimum Guarantee Adjustment 53
Lab School Discretionary Contribution 54
Summer Reading Allocation 54
Reading Program Allocation 55
0.51 (0.498) Mills Discretionary Compression 55
Special Teachers are Rewarded (STAR) Plan Allocation 56
Merit Award Program (MAP) Allocation 56
DJJ Supplement 56
Additional Allocations Outside of the Base FEFP Calculation 56

Extended Day / Seventh Period 57
Adequacy Supplement 57
Caps Adjustment Supplement 57
Additional State Allocation 57
The Inclusion of Lottery Dollars 58
The FEFP Funding Formula in 2008 59
Full-time Equivalent (FTE) 60
Program Cost Factors 61
Additional Weighted FTE 62
Base Student Allocation 62
District Cost Differential 63
Adjustments 63
State & Local FEFP Dollars 64
Required Local Effort 65
State FEFP Dollars 65
Adjustments 65
Net State FEFP Allocation 66
District Discretionary Lottery Funds 66
Categorical Program Funds 67
Special Allocations 67
Total State Allocation 67
Legal Challenges 67
Equity Challenges 68
Adequacy Challenges 69
Constitutional Amendment 71
Conclusion 71

CHAPTER 3: METHODS AND PREVIOUS FINDINGS 73
Method for Conducting the Historical Review 74
Measures of Distributional Equality 74
Adjustment of Revenue Measures 75
The District Cost Differential 76
The Geographic Cost of Education Index 76
The Comparable Wage Index 77
Selected Years for Study 78
Equity Measures 79
Total State Revenue Measures 82
Findings from the Original Study 82
Total Local Revenue Measures 84
Findings from the Original Study 84
Total State and Local Revenue Measures 86
Findings from the Original Study 86
Assessing Distributional Patterns of Per Pupil Revenues
Using Lorenz Curves and Gini Coefficients 89

Findings from the Original Study 92
Relationships Between Revenue Measures and Selected Independent Variables 95
Selected Independent Variables 96
Total State Revenue Measures 97
Total Local Revenue Measures 99
Total State and Local Revenue Measures 101
Equity Studies in the Literature 104
The Equity of Public Education Funding in Georgia 104
School Finance Reform in Tennessee 105
Wealthy or Poor: Who Receives and Who Pays in Iowa 105
Assessing the Equity of Kentucky's SEEK Formula 105
Horizontal and Vertical Equity Analysis of Indiana 106
The Equality of Public School District Funding 107

CHAPTER 4: FINDINGS 108
Research Design and Methods 109
Variables for Analysis 109
Measures of Dispersion of Variability and Variation 111
Correlations 113
Independent Variables 113
Measures of Distributional Equity 114
Total State Revenue Measures 114
Percentile Ranks 114
Range and Restricted Range 118
Coefficient of Variation 124
Federal Range Ratio 125
McLoone Index 127
Verstegen Index 128
Total Local Revenue Measures 129
Percentile Ranks 132
Range and Restricted Range 133
Coefficient of Variation 139
Federal Range Ratio 140
McLoone Index 142
Verstegen Index 143
Total State and Local Revenue Measures 144
Percentile Ranks 147
Range and Restricted Range 148
Coefficient of Variation 154
Federal Range Ratio 155
McLoone Index 157
Verstegen Index 158

Assessing Distributional Patterns of Per Pupil Revenues Using Gini Coefficients 159
Total State Revenue 160
Total Local Revenue 162
Total State and Local Revenue 164
Comparison of Revenues 166
Relationship Between Revenue Measures and Selected Independent Variables 167
District Cost Differential and the Revenue Measures 167
Total State Revenue 168
Total Local Revenue 170
Total State and Local Revenue 172
Comparison of Revenue Types 174
Assessed Property Value per Pupil and the Revenue Measures 175
Total State Revenue 176
Total Local Revenue 178
Total State and Local Revenue 180
Comparison of Revenue Types 182
Assessed Property Value per Pupil and the District Cost Differential 183
Total State and Local Revenue per Pupil Using Weighted Student FTE 185

CHAPTER 5: RESULTS AND CONCLUSIONS 188
Overview 188
Phase I 188
Phase II 188
Phase III 189
Interpretation of Findings 189
Phase I 189
Phase II 190
Revenue Measures 190
Adjustment of Revenues 191
Measures of Dispersions or Variability 191
Findings 192
Phase III 194
Implications of Findings 195
Recommendations for Future Research 195
Conclusion 197

REFERENCES 199

BIBLIOGRAPHY 206

ABOUT THE AUTHOR End Page

LIST OF TABLES

Table 1:	1981-82 Program Cost Factors	29
Table 2:	1981-82 District Cost Differentials	30
Table 3:	Program Cost Factors, 1981-82 to 1989-90	39
Table 4:	Program Cost Factors, 1990-91 to 1999-2000	40
Table 5:	Program Cost Factors, 2000-01 to 2008-09	41
Table 6:	2008-09 Program Cost Factors	61
Table 7:	2008-09 District Cost Differentials	64
Table 8:	Percentile Distribution of Total State Revenue per Pupil, 1970-1980	83
Table 9:	Measures of the Variation in the Distribution of Total State Revenues per Pupil, 1970-1980	84
Table 10:	Percentile Distribution of Total Local Revenue per Pupil, 1970-1980	85
Table 11:	Measures of the Variation in the Distribution of Total Local Revenues per Pupil, 1970-1980	85
Table 12:	Percentile Distribution of Total State and Local Revenues Per Pupil, 1970-1980	87
Table 13:	Measures of the Variation in the Distribution of Total State and Local Revenues per Pupil, 1970-80	88
Table 14:	Gini Coefficients of the Distribution of Total Local Revenues per Pupil, 1970-80	92
Table 15:	Gini Coefficients of the Distribution of Total State Revenues per Pupil, 1970-80	93

Table 16:	Gini Coefficients of the Distribution of Total State and Local Revenues per Pupil, 1970-80	95
Table 17:	Product-Moment Correlation Between the District Cost Differential and Total State Revenues per Pupil, 1970-80	98
Table 18:	Product-Moment Correlation Between Assessed Property Value per Pupil and Total State Revenue per Pupil, 1970-80	98
Table 19:	Product-Moment Correlation Between the District Cost Differential and Total Local Revenues per Pupil, 1970-80	100
Table 20:	Product-Moment Correlation Between Assessed Property Value per Pupil and Total Local Revenues per Pupil, 1970-80	100
Table 21:	Product Moment Correlation Between the District Cost Differential and Total State and Local Revenues per Pupil, 1970-80	102
Table 22:	Product-Moment Correlation Between Assessed Property Value per Pupil and Total State and Local Revenues per Pupil, 1970-80	102
Table 23:	Product-Moment Correlation Between Assessed Property Value per Pupil and Florida's District Cost Differential, 1970-80	103
Table 24:	Percentile Distribution of Total State Revenues per Pupil, 1982-2008	115
Table 25:	Measures of the Variation in the Distribution of Total State Revenues per Pupil, 1982-2008	116
Table 26:	Additional Measures of the Variation in the Distribution of Total State Revenue per Pupil, 1982-2008	126
Table 27:	Percentile Distribution of Total Local Revenues per Pupil, 1982-2008	130
Table 28:	Measures of the Variation in the Distribution of Total Local Revenues per Pupil, 1982-2008	131
Table 29:	Additional Measures of the Variation in the Distribution of Total Local Revenues per Pupil, 1982-2008	141

Table 30:	Percentile Distribution of Total State and Local Revenues per Pupil, 1982-2008	145
Table 31:	Measures of the Variation in the Distribution of Total State and Local Revenues per Pupil, 1982-2008	146
Table 32:	Additional Measures of the Variation in the Distribution of Total State and Local Revenues per Pupil, 1982-2008	156
Table 33:	Gini Coefficients of the Distribution of Total State Revenues per Pupil, 1982-2008	160
Table 34:	Gini Coefficients of the Distribution of Total Local Revenues per Pupil, 1982-2008	162
Table 35:	Gini Coefficients of the Distribution of Total State and Local Revenues per Pupil, 1982-2008	164
Table 36:	Product-Moment Correlation Between the District Cost Differential and Total State Revenues per Pupil, 1982-2008	168
Table 37:	Product-Moment Correlation Between the District Cost Differentials and Total Local Revenues per Pupil, 1982-2008	170
Table 38:	Product-Moment Correlation Between the District Cost Differentials and Total State and Local Revenues per Pupil, 1982-2008	172
Table 39:	Product-Moment Correlation Between Assessed Property Value per Pupil and Total State Revenue per Pupil, 1982-2008	176
Table 40:	Product-Moment Correlation Between Assessed Property Value per Pupil and Total Local Revenues per Pupil, 1982-2008	178
Table 41:	Product-Moment Correlation Between Assessed Property Value per Pupil and Total State and Local Revenues per Pupil, 1982-2008	180
Table 42:	Product-Moment Correlation Between Assessed Property Value per Pupil and the District Cost Differentials, 1982-2008	184
Table 43:	Use of Weighted and Unweighted Students in Total State and Local Revenue per Pupil Equity Measures in 1998-99	186

List of Figures

Figure 1:	Calculation of State and Local FEFP in 1980	27
Figure 2:	Calculation of Net State FEFP in 1981-82	31
Figure 3:	Calculation of Total State Allocation in 1981-82	33
Figure 4:	Calculation of FEFP in 2008-09	60
Figure 5:	Calculation of Net State FEFP Allocation in 2008-09	65
Figure 6:	Calculation of Total State Finance Program in 2008-09	66
Figure 7:	A Sample Lorenz Curve	90
Figure 8:	Range and Restricted Range of Unadjusted Total State Revenue per Pupil, 1982-2008	119
Figure 9:	Range and Restricted Range of DCD Adjusted Total State Revenue per Pupil, 1982-2008	120
Figure 10:	Range and Restricted Range of CWI Adjusted Total State Revenue per Pupil, 1998-2008	121
Figure 11:	Range and Restricted Range of GCEI Adjusted Total State Revenue per Pupil, 1988-2008	122
Figure 12:	Range of Total State Revenues per Pupil, 1982-2008	123
Figure 13:	Restricted Range of Total State Revenues per Pupil, 1982-2008	124
Figure 14:	Coefficient of Variation of Total State Revenues per Pupil, 1982-2008	125
Figure 15	Federal Range Ratio of Total State Revenues per Pupil, 1982-2008	127
Figure 16	McLoone Index of Total State Revenues per Pupil, 1982-2008	128

Figure 17:	Verstegen Index of Total State Revenues per Pupil, 1982-2008	129
Figure 18:	Range and Restricted Range of Unadjusted Total Local Revenue per Pupil, 1982-2008	134
Figure 19	Range and Restricted Range of DCD Adjusted Total Local Revenue per Pupil, 1982-2008	135
Figure 20:	Range and Restricted Range of CWI Adjusted Total Local Revenue per Pupil, 1998-2008	136
Figure 21:	Range and Restricted Range of GCEI Adjusted Total Local Revenue per Pupil, 1988-2008	137
Figure 22:	Range of Local Revenues per Pupil, 1982-2008	138
Figure 23:	Restricted Range of Total Local Revenues per Pupil, 1982-2008	139
Figure 24:	Coefficient of Variation of Total Local Revenues per Pupil, 1982-2008	140
Figure 25:	Federal Range Ratio of Total Local Revenues per Pupil, 1982-2008	142
Figure 26:	McLoone Index of Total Local Revenues per Pupil, 1982-2008	143
Figure 27:	Verstegen Index of Total Local Revenues per Pupil, 1982-2008	144
Figure 28:	Range and Restricted Range of Unadjusted Total State and Local Revenue per Pupil, 1982-2008	149
Figure 29:	Range and Restricted Range of DCD Adjusted Total State and Local Revenue per Pupil, 1982-2008	150
Figure 30:	Range and Restricted Range of CWI Adjusted Total State and Local Revenue per Pupil, 1998-2008	151
Figure 31:	Range and Restricted Range of GCEI Adjusted Total State and Local Revenue per Pupil, 1988-2008	152
Figure 32:	Range of Total State and Local Revenues per Pupil, 1982-2008	153
Figure 33:	Restricted Range of Total State and Local Revenues per Pupil, 1982-2008	153

Figure 34:	Coefficient of Variation of Total State and Local Revenues per Pupil, 1982-2008	154
Figure 35:	Federal Range Ratio of Total State and Local Revenues per Pupil, 1982-2008	157
Figure 36:	McLoone Index of Total State and Local Revenues per Pupil, 1982-2008	158
Figure 37:	Verstegen Index of Total State and Local Revenues per Pupil, 1982-2008	159
Figure 38:	Gini Coefficients of Total State Revenues per Pupil, 1982-2008	161
Figure 39:	Gini Coefficients of Total Local Revenues per Pupil, 1982-2008	163
Figure 40:	Gini Coefficients of Total State and Local Revenues per Pupil, 1982-2008	165
Figure 41:	Gini Coefficients of Unadjusted Revenues per Pupil, 1982-2008	166
Figure 42:	Gini Coefficients of DCD Adjusted Revenues per Pupil, 1982-2008	167
Figure 43:	Product-Moment Correlation Between District Cost Differentials and Total State Revenues per Pupil, 1982-2008	169
Figure 44:	Product-Moment Correlation Between District Cost Differentials and Total Local Revenues per Pupil, 1982-2008	171
Figure 45:	Product-Moment Correlation Between District Cost Differentials And Total State and Local Revenues per Pupil, 1982-2008	173
Figure 46:	Product-Moment Correlation Between District Cost Differentials and Unadjusted Revenues per Pupil, 1982-2008	174
Figure 47:	Product-Moment Correlation Between District Cost Differentials and DCD Adjusted Revenues per Pupil, 1982-2008	175
Figure 48:	Product-Moment Correlation Between Assessed Property Value per Pupil and Total State Revenues, 1982-2008	177
Figure 49:	Product-Moment Correlation Between Assessed Property Value per Student and Total Local Revenues, 1982-2008	179

Figure 50: Product-Moment Correlation Between Assessed Property Value per Pupil and Total State and Local Revenues, 1982-2008 181

Figure 51: Product-Moment Correlation Between Assessed Property Value per Pupil and Unadjusted Revenues per Pupil, 1982-2008 182

Figure 52: Product-Moment Correlation Between Assessed Property Value per Pupil and DCD Adjusted Revenues per Pupil, 1982-2008 183

Figure 53: Product-Moment Correlation Between Assessed Property Value per Pupil and the District Cost Differentials, 1982-2008 184

THE FLORIDA EDUCATION FINANCE PROGRA FROM 1981 TO 2009:

A HISTORICAL REVIEW AND EQUITY ANALYSIS

Curtis Todd Bowden

ABSTRACT

In 1973, the state of Florida implemented the Florida Education Finance Program (FEFP). The program was developed to distribute available funds to public school districts in a more equitable manner than the Minimum Foundation Plan it replaced. Almost immediately, the Florida Education Finance Program came under attack as less equitable and unnecessarily complex.

The Florida Education Finance Program provides funding to local school districts based on the number students and the types of educational programs in which they are enrolled. Through a system of program cost factors and district cost differentials the Florida Education Finance Program adjusts for the type of students and the economic environment the district serves. But does it distribute funds equitably?

This study was designed to answer one central research question: "Does the Florida Education Finance Program equitably distribute available funding to public school districts in the state?" In order to answer this question, a three phase method was implemented. In the first phase a chronological development of Florida's school finance plan was developed. The second phase employed research based statistical tools to gauge the distributional equity of Florida's mechanism for distributing available funds for

Florida public school districts. The final phase used Pearson product-moment correlations to gauge the fiscal neutrality of the system. The study is patterned after a similar study completed in 1982 that called into question the distributional equity of the Florida Education Finance Program.

The coefficient of variation, federal range ratio, McLoone index, Verstegen index, and Gini coefficient are all research based measures of distributional equity that are resistant to inflationary pressure. Each of these measures of distributional equity yielded the same results. They showed a high level of equity in the distribution of available funding to Florida's public school districts through the Florida Education Finance Program.

This study left open the questions of adequacy and the role of the state in funding public education in the state of Florida to future study.

CHAPTER 1

INTRODUCTION

For over 30 years, the distribution of educational opportunities and the equality of education funding across communities has generated considerable interest among policy makers, the public, and the courts (Moser & Rubenstein, 2002). The majority of states have been involved in ongoing judicial and legislative controversies over education finance formulas that provide more education resources to students in some school districts than others. Despite scores of court decisions and dozens of legislative enactments, the legal and political issues concerning state funding of education remains muddled (Imber, 2001). Consistent with court decisions, states appear to be taking a more active role in the design of public school finance programs that recognize the difference in the needs of pupils, school and school districts (Verstegen & Jordan, 2009). Usually when the state assumes a greater fiscal responsibility for funding its public schools, a higher level of fiscal equity is the result (Driscoll & Salmon, 2008).

The two key questions that currently guide the school funding debate are:

1. How much money is needed?
2. What is fair in the distribution of available funding (Ramirez, 2003)?

These questions revolve around the concepts of adequacy and equity. Challenges to the constitutionality of a state school finance system as inequitable or inadequate have driven reform of school finance systems in those states (Hirth & Eiler, 2005). School funding

litigation is nothing new to the United States (Murry, 2006). During the past 40 years, questions about the equity and adequacy of school finance have been the subject of lawsuits in nearly every state (Glenn, 2006).

In examining any school funding formula, it is important to understand the differences between equity, equality, and adequacy because it leads to profound differences in the definition of the problems to be addressed and the remedies available for their solution (Hirth & Eiler, 2005). Theoretically, there should be no relationship between wealth and resources (Driscoll & Salmon, 2008).

Adequacy Defined

One would think that a concept so central to the debate of funding of public education would have a readily accepted definition. Yet, a consensus of the experts is hard to find. In general terms, adequacy deals with the amount of money needed by a system of education to deliver a specific result. The key to adequacy is that it revolves around a stated outcome. The adequacy of educational dollars is measured by the degree of student achievement in comparison to the stated performance standards of the education system (Odden, 2003).

There is not and probably will never be a single standard that applies across states as the absolute cost of an adequate education (Baker, 2005). If we assume that state-imposed standards define what an "adequate" education is, we can refer to the amount of money necessary to achieve educational adequacy as the "cost" of education (Imazeki & Reschovsky, 2003). To date, no single approach to determining an adequate spending level is dominant across the country, and each produces different dollar amounts. Most

require substantial increases in education funding (Odden, 2003). The Kentucky Supreme Court in *Rose v. Council for Better Education* in 1989 defined an adequate education as one that provides "sufficient knowledge of economic, social and political systems to enable the student to make informed choices" and "sufficient understanding of governmental process to enable the student to understand the issues that affect his or her community, state, and nation (Roelke, Green, & Zielewski, 2004, p. 122)." The Wyoming Supreme Court in *Campbell County School District v. State* in 1995 found that the state's education article obliged the legislature to "provide an education system of a character which provides Wyoming students with a uniform opportunity to become equipped for their future role as citizens, participants in the political system (Roelke et al., 2004, p. 122)." The New Hampshire Supreme Court held in *Claremont School District v. Governor* in 1993 that an adequate education "includes broad educational opportunities needed in today's society to prepare citizens for their role as participants and as potential competitors in today's marketplace (Roelke et al., 2004, p. 122)." The New York Supreme Court found in *Campaign for Fiscal Equity v. State* in 2003 that an adequate education is one that provides students with greater than minimum preparation (Roelke et al, 2004).

The underlying theoretical assumptions for the shape of educational adequacy are:

1. Basic costs vary by desired outcomes
2. Marginal Costs of Achieving Outcomes vary by district scale
3. Marginal Costs of Achieving Outcomes vary by student needs
4. Marginal Costs of Producing Outcomes vary by prices districts must pay for comparable resources
5. Scale, student needs, and input prices interact to influence costs multiplicatively
6. Marginal costs of achieving desired outcomes increase as performance standards increase and decrease as performance standards decrease (Baker, 2005).

Court decisions and legislative struggles have emphasized that adequacy – state funding at levels that allow all children to perform at high levels – is replacing equity as the school finance issue of our time (Picus, 2001). Long focused on fiscal equity, school finance is now shifting toward fiscal adequacy. And this shift represents a fundamental change: it means that school finance today encompasses not only fiscal inputs but also their connection to educational programs, teacher compensation, and student achievement (Odden, 2003). Adequacy is challenging equity as the standard to which state school revenue distribution plans should be held (Cohen-Vogel & Cohen-Vogel, = 2001). Despite the shift to adequacy, those who make school finance policy must remain vigilant about fiscal disparities caused by the unequal distribution of available revenues. As funding formulas are revised to ensure adequacy, there will also be an improvement in fiscal equity (Odden, 2003).

Equity Defined

The struggle for equity continues to be at once the most important and the most contentious issue in American education (Imber, 2001). Equity is a long-held and widely affirmed ideal of the American system of government (Verstegen & Driscoll, 2008). In

one form or another, equity in school funding has been a major concern in K-12 education finance discussions since the early 1970s (Toutkoushian & Michael, 2007). While perfect equity will probably never be fully defined, much less achieved, education policy and practice must be designed to promote the goal of creating the most equitable system of education possible (Imber, 2001).

Two alternative definitions of equity exist in school funding. The first is known as horizontal equity, meaning that school districts considered to be similar to each other along dimensions that relate to the cost of providing basic education, such as wealth, size, and socioeconomic status, should have comparable levels of funding. This is often called the equal treatment of equals in school finance literature. A second equity principle, vertical equity, states that for education funding to be equitable, school districts with higher costs to educate student populations should receive more funding than their counterparts to compensate for this difference; this is called the unequal treatment of unequals (Toutkoushian & Michael, 2007).

From the pupil's perspective, equity means sufficient funding to ensure equal access to educational opportunity. From the taxpayers' perspective, equity means that taxes should be equal regardless of one's taxing jurisdiction.

Fiscal equity in financing public education has been a substantive issue with a long history in school finance literature (Maiden & Evans, 2009). Equity targets need to be supplemented, not supplanted, by adequacy targets to determine whether there is sufficient funding available to teach all children to high standards (Verstegen, 2002). In

theory, any system designed to provide adequate funding for virtually all students should also meet the standards of equity (Picus, 2001).

Public education systems are designed to produce equity (fairness) in the treatment of their students, but they do not, cannot, and should not aspire to produce complete equality. In the difficult process of allocating resources for education, some recipients must necessarily receive advantages over others, while some suffer disadvantages. This is inevitable in a process where there are innate and fundamental differences in students' ability, interest, and desire to learn (Brimley & Garfield, 2002).

Adequacy Versus Equity Studies

As stated previously, state distribution systems can be evaluated from two distinct perspectives.

1. How much money is needed?
2. What is fair in the distribution of available funding?

Finance systems can be equitable but not adequate if children and youth within a state receive insufficient funding to meet state standards, requirements, and laws (Verstegen & Driscoll, 2008). Researchers and policymakers should endeavor to ensure that resources supporting instruction as the critical component of the educational enterprise are distributed fairly. Continued studies of state distribution systems are strongly recommended (Maiden & Evans, 2009). Studies designed to determine the amount of money needed to operate an adequate system of education are designed and conducted differently than studies designed to test the fairness of the distribution of available funding. It is important for researchers to clearly differentiate whether they intend to conduct an adequacy or equity study, and tailor their methods accordingly.

Over the past 10 years, education policy analysts have established four different approaches for determining an adequate per student funding level in a state system of education:

1. Determining the economic cost of various educational functions
2. Linking spending to performance benchmarks
3. Asking professional educators
4. Pricing effective school wide strategies (Picus, 2001)

Each of these methods results in a cost of education for a presumed hypothetical average student that can serve as an adequacy target and basis for school finance policy. This cost is further adjusted for special high cost students and district characteristics (Verstegen, 2002). It is important to note that researchers would chose from one of the four established approaches. A justification for using the selected method would be required as each method will deliver a different result based on its methodology.

Measures of equity are well-established in the school finance literature (Bundt & Leland, 2001). New York University Professors Robert Berne and Leanna Stiefel have developed a widely used framework for conceptualizing and measuring equity in education finance (Verstegen, 2002). The framework consists of eight equity measures that can be used in conjunction with each other to make judgments about distribution of available funding. The equity measures are:

1. Range
2. Restricted Range
3. Federal Range Ratio
4. Coefficient of Variation
5. Gini Coefficient
6. McLoone Index
7. Verstegen Index
8. Fiscal Neutrality

The Case of Florida

In 1982, a doctoral student at the University of Florida proposed to study the financing of Florida's K-12 public schools. That student, Dr. Lee Shiver, completed his doctoral studies with a dissertation entitled *A Historical Review of the Development of Florida's School Finance Plan and the Fiscal Equalization Effects of the Florida Education Finance Plan.* Dr. Shiver's dissertation, completed in 1982, studied Florida's system for financing public education from two perspectives. The first perspective was a historical one. Dr. Shiver chronicled the financing of public schools in Florida from statehood through the publication of his dissertation in 1982. The second perspective involved the application of statistical tests to determine if the newly enacted Florida Education Finance Program (FEFP) distributed funds more equitably than the Minimum Foundation Plan (MFP) it replaced.

Dr. Shiver's study was held out as an equity study. His findings were surprising in that he found the Minimum Foundation Plan was more equitable than the newer Florida Education Finance Program. In the introduction to his study, Dr. Shiver quoted from the work of Morphet, Johns and Reller (1982, p. 402). The quote stated:

> The equalization of educational opportunity within a state is not a simple task …The measurement of educational need and the computation of variations in the unit costs for equivalent educational programs and services is a problem which requires continuous study in each state if educational opportunities are really equalized.

This statement is as true in 2009 as it was in 1982. It is this need for continuous study that drives the call for new and current study of Florida's system for financing public K-12 education.

It behooves policymakers to carefully and continuously examine state education funding systems (Vesely, Crampton, Obiakor, & Sapp, 2008). Continuing that study, and clearly differentiating between equity and equality, is the intent of this study. Utilizing the multiple perspectives of the Shiver study, it is the desire of this study to chronicle the evolution of the Florida Education Finance Program from the publication of Dr. Shivers work in 1982 through 2009. The current study will also replicate the statistical techniques used by Dr. Shiver. Newer statistical models are also to be employed so that a linear comparison can take place amongst the findings to produce a work, that when compiled with the original study, provides data about the equalization effects of the Florida Education Finance Program from the 1970-71 through 2008-09 academic years.

Over a decade after the *A Nation at Risk* report and three decades well after the ground breaking school finance litigation of the 1970's, a review of the political economy of education finance in state capitols indicates that public school funding continues to be a tortuous undertaking and its path is strewn with technical and political minefields. The pursuit of equal educational opportunity, begun in earnest in the late 1960's, is still a distant goal for many states (Nakib & Herrington, 1998). School finance policy for most of the 20th century largely concerned fiscal equity. The key problem was differences in revenues per pupil across school district lines, usually but not always, caused by differences in property wealth per pupil (Odden, 2000). In the twentieth century, state governments have tried to offset these funding inequities by supplementing local revenues with state funds through a variety of equalizing measures. Although these measures mitigate local inequalities, they rarely offset them (Rebell, 1999).

Dr. Shiver wrote in 1982:

> It is important that the status of the FEFP's impact on equalization of educational opportunity in the state be updated to provide the information necessary for developing sound public finance policy in the future. Combined with a historical overview of the development of state support for public schools in Florida, such an analysis will enable scholars and governmental decision-makers to reflect upon and evaluate the pertinent background information, the trends established, and the lessons learned in the state's quest for school finance equity (p. 5).

Many things have changed in regards to financing schools equitably since 1982, yet many have not. The need for current information and a complete history of Florida's finance system described by Dr. Shiver in 1982 is evident today. Twenty-seven years later, the 1982 study's historical review has become outdated. From a statistical perspective, statistical tools have been developed and refined over the last twenty-seven years that allow us to better gauge the equity of a state's school finance distribution system. It is the need for an updated historical review and an updated statistical analysis of the State of Florida's school finance distribution formula that forms the basis of this study.

Statement of the Problem

The United States has not one system of education finance but 50, each shaped by statutes of the particular state. Therefore, the study of education finance policy is the study of state legislative activity (Crampton, 2007). The means by which states provide funding for public education vary greatly across the United States, and there are many variations in the details of how these distributions are made. Although almost every state uses a funding formula for distributing revenues for public education, no two are alike in their specific details (Toutkoushian & Michael, 2008). The state of Florida has had in place, since the time of *San Antonio v. Rodriguez*, an education finance system called the

Florida Education Finance Program (FEFP), which makes substantial effort to equalize per-pupil spending in all of the state's school districts while recognizing the local factors that may necessitate changes in that spending (Bauries, 2006). In 1982, Dr. Shiver called into question the equity components of the Florida Education Finance Program. His findings specifically stated that the Minimum Foundation Plan was more equitable than the Florida Education Finance Program. This study challenges those findings by using recent, research based statistical tools to conduct a true equity study.

A statistical analysis of the equalization of educational funding in Florida from 1982-83 to 2008-09 was conducted to determine the state aid impact on equalization in the state. Dr. Shiver's original statistical method was employed as well as more recent statistical tools. The findings are presented side-by-side for comparative purposes. The coupling of these studies provides data from 1970-71 through 2008-09. Measures of fiscal equality are the focus of the analysis.

Research Question

The central research question of this study is:

Does the Florida Education Finance Program equitably distribute available funding to public school districts in the state?

Procedures

The study is conducted using procedures outlined in the initial Shiver study as well as those contained in the current literature. The study is conducted in three phases.

Phase I

The chronological development of Florida's school finance plan is traced through a review of relevant literature including official state and local agency reports and records. This historical review covers the period from 1982 through 2009. The historical review has been completed and is included as chapter 2 of this study.

Phase II

Phase II begins with the identification of the statistical measures and independent and dependant variables, which will be used to assess the progress of state school aid, toward greater equalization of educational opportunity. Based on the concept and measurement approaches which have been used previously by Dr. Shiver, and those established in the current literature, as well as the accessible and centrally recorded data pertaining to the state and local funding of Florida's sixty-seven public school districts necessary to conduct such analyses, the following measures are the variables for analysis.

Variables for Analysis

Total State Revenue per Pupil. This variable is the sum of all state revenue provided to districts and includes the FEFP appropriations, categorical program funding, special state revenue sources, special state appropriations, and state lottery funds divided by the unweighted FTE student count of the district. The required local effort is prescribed by the state, but raised from local sources (property taxes) and will not be included in total state revenue per pupil.

District Cost Differential (DCD) Adjusted Total State Revenue per Pupil. This variable is the sum of all state revenue provided to districts and includes the FEFP

appropriations, categorical program funding, special revenue sources, special appropriations, and lottery funds divided by the unweighted FTE student count of the district divided by the district's District Cost Differential.

Comparable Wage Index (CWI) Adjusted Total State Revenue per Pupil. This variable is the sum of all state revenue provided to districts and includes the FEFP appropriations, categorical program funding, special revenue sources, special appropriations, and lottery funds divided by the unweighted FTE student count of the district divided by the district's Comparable Wage Index.

Geographic Cost of Education Index (GCEI) Adjusted Total State Revenue per Pupil. This variable is the sum of all state revenue provided to districts and includes the FEFP appropriations, categorical program funding, special revenue sources, special appropriations, and lottery funds divided by the unweighted FTE student count of the district divided by the district's Geographic Cost of Education Index.

Total Local Revenue per Pupil. This variable is the revenue derived from the required local effort combined with other local revenues provided to the district divided by the unweighted FTE student count.

DCD Adjusted Total Local Revenue per Pupil. This variable is the revenue derived from the required local effort combined with other local revenues provided to the district divided by the unweighted FTE student count divided by the district's District Cost Differential.

CWI Adjusted Total Local Revenue per Pupil. This variable is the revenue derived from the required local effort combined with other local revenues provided to the

district divided by the unweighted FTE student count divided by the district's Comparable Wage Index.

GCEI Adjusted Total Local Revenue per Pupil. This variable is the revenue derived from the required local effort combined with other local revenues provided to the district divided by the unweighted FTE student count divided by the district's Geographic Cost of Education Index.

Total State and Local Revenue per Pupil. This variable combines the total state revenue and the total local revenue provided to the district divided by the unweighted FTE student count.

DCD Adjusted Total State and Local Revenue per Pupil. This variable combines the total state revenue and the total local revenue provided to the district divided by the unweighted FTE student count divided by the district's District Cost Differential.

CWI Adjusted Total State and Local Revenue per Pupil. This variable combines the total state revenue and the total local revenue provided to the district divided by the unweighted FTE student count divided by the Comparable Wage Index.

GCEI Adjusted Total State and Local Revenue per Pupil. This variable combines the total state revenue and the total local revenue provided to the district divided by the unweighted FTE student count divided by the Geographic Cost of Education Index.

Measures of Dispersion of Variability and Variation

Seven different measures of dispersions of variability or variation were selected by the Shiver study to summarize the FEFP's impact on distributional equality among the state's school districts. Three additional measures of dispersion or variability have been

selected based on their prevalence in the current literature. These ten different measures of dispersions or variability will be utilized in the current study.

Percentiles. School districts are ranked according to the variable of interest with values listed for the 100^{th} (highest), 95^{th}, 75^{th}, 50^{th} (median), 25^{th}, 5^{th}, and 1^{st} (lowest) percentiles.

Range. The range is the difference between the values of a variable in the highest and lowest districts in a distribution.

Restricted Range. The restricted range is a measure less sensitive to extreme values than the range. In this study, it is the difference between the values of the selected revenue measure at the 95^{th} and the 5^{th} percentiles.

Federal Range Ratio. The federal range ratio is the restricted range divided by the per-pupil revenue measure at the 5^{th} percentile.

Mean. The mean is the sum of the school districts values of a variable divided by the number of districts.

Standard Deviation. The standard deviation is the square root of the mean of the squared differences between the value of the variable in each district and the mean.

Coefficient of Variation. The coefficient of variation is the standard deviation divided by the mean.

Gini Coefficient. After school districts are ranked in ascending order by the variable of interest, they will be plotted on a graph with the percentage of the total pupil population measured along the horizontal axis and the percentage of revenue received on the vertical axis. A 45-degree diagonal dissects the graph and represents the locus points

where the two factors are equal, or a state of total equality. Inequalities are represented by the curve (Lorenz curve) divergent from the diagonal. The Gini coefficient is a statistical summary of distributional equality and is equal to the area between the Lorenz curve and the 45-degree diagonal divided by the area of the triangle below the diagonal. The closer the Gini coefficient approaches zero, the closer the distribution is to total equality.

McLoone Index. The McLoone index is the sum of per-pupil revenue measure for students at or below the median divided by the sum of per-pupil revenue measure if all the students below the median received the median amount.

Verstegen Index. The Verstegen index is the sum of per-pupil revenue measure for students at or above the median divided by the sum of per-pupil revenue measure if all the students above the median received the median amount.

Corresponding data appropriate to the aforementioned variables and measures are then collected, computed, and analyzed for every other school year beginning with 1982-83 through 2008-09.

Phase III

Assuming the continuance of some degree of variation among the aforementioned measures of distributional equality, a separate analysis using Pearson product-moment correlations will focus on the relationship between each of the selected per pupil revenue measures and a pair of independent variables thought to have varying degrees of influence on per pupil revenues. Variations in distributional equality are then evaluated by assessing the changes in the strength of relationship associated with each correlation.

This procedure gauges the fiscal neutrality of the system and is consistent with the procedures utilized in the Shiver study and are contained in the current literature.

Independent Variables

The selected independent variables are measured in terms of amount or unit per pupil and are as follows:

District Cost Differential Factor. District cost differential factors are incorporated into the FEFP formula to adjust the districts' FEFP allocations for the varying cost of providing similar education programs. The district cost differential is not based on student variables, but rather economic data relevant to the cost of doing business in a geographic region and is not measured per pupil.

Assessed Valuation. The property tax base is the assessed, nonexempt value of property against which taxes are levied. Assessed property values are a net figure for a district. In order for the assessed valuation to be relevant for a school finance study, the figure was converted to a per pupil figure. Each district's net assessed valuation is divided by the unweighted FTE of that district. The result is an assessed valuation per pupil.

Delimitations

1. The historical account of the development of Florida's school finance plan is delimited to a review of the major changes in the structure of the state's public school funding systems since the Shiver study was completed in 1982.

2. The analysis of equalization of educational opportunity in the state is confined to the twelve selected revenue measures.

3. The study is restricted to quantitative measures of distributional equality and fiscal neutrality as its criteria of school finance equity.

4. Analysis of the state aid program's impact on equalization of educational opportunity in the state is confined to a study of every other school year from 1982-83 through 2008-09.

5. Given that variations in revenues are more meaningful than variations in expenditures when studying the distribution of funding, the study is confined to analysis of measures of yearly revenues per pupil.

6. The assessed property values to be used in this study will be for the calendar year immediately preceding the selected school year. This is consistent with the method employed in the Shiver study and allows for analysis of results across both the current and prior study.

7. The Comparable Wage Index and Geographic Cost of Education Index are cost adjustment indexes that are developed, calculated, and disseminated by outside third parties. Each of these indexes is only available for specific years of the current study. When a current index is not available, the index from the most recent previous year was employed. This is consistent with the index's application in current literature.

8. State revenue in the state of Florida is distributed to schools using the Florida Education Finance Program, but this is not the only means for distributing funds to Florida's public school districts. Through the annual appropriation process, categorical funds are also allocated to public school districts. These categorical allocations take

place outside of the Florida Education Finance Program are not included in any of the revenue measures used in this study.

Limitations

This study is very clearly an equity study. It seeks to answer the question: "Does the Florida Education Finance Program (FEFP) equitably distribute available funding to public school districts in the state?" This study does not attempt to define what funding level is adequate for the students of Florida, nor does it attempt to make judgments on the adequacy of Florida's funding of public schools.

Although the FEFP remains, basically, a foundation program, the complexities inherent in its funding process dictate that comparison of the substantive conclusions of this study or the prior Shiver study with similar analyses of other states' school finance reform measures be made with caution. This study does not propose to, nor did the Shiver study, represent a comprehensive application of the myriad school finance equity standards and measures to the FEFP and its effect on equalization, but instead, focuses on a more compendious design that provides the same type of evaluative information in regard to distributional equity and fiscal neutrality. This study has been constructed using the same methodology as the Shiver study to allow for comparison between years within the state of Florida. Any other application of the studies' data would be inconsistent with their design.

The current study employs three cost adjustments in connection with the selected revenue measures. The cost adjustments are the District Cost Differential (DCD), the Comparable Wage Index (CWI), and the Geographic Cost of Education Index (GCEI).

The DCD is available for all years of the current and previous study. The DCD is a product of the Florida Price Level Index and the method for determining it has varied from year to year. This variation is discussed further in Chapter 2. The CWI was first calculated in 1997 and is available from 1997 through 2003. To allow for continuous evaluation, the CWI for 2003 is used for subsequent years of the study. The justification for this procedure is discussed in Chapter 3. The GCEI was first calculated for the 1987-88 school year and is available for the 1987-88, 1990-91, and 1993-94 school years. In years where a current GCEI is not available and to allow for continuous evaluation, the GCEI for the most recent preceding year is utilized. The justification for this procedure is discussed in Chapter 3.

Justification for the Study

Since establishing educational systems in the 1800s, most states have experienced problems in trying to equalize education funding from school to school and district to district (Hadderman, 1999). The pace of reforms of state finance systems still shows no sign of slowing after 30 years of efforts. More than 50 years after the historic *Brown v. Board of Education* decision demanding equality of educational opportunity for all students, the role of state education funding systems as a tool to promote social justice remains understudied and underutilized (Vesely, Crampton, Obiakor, & Sapp, 2008). Ever since the early 1970's, when states first made changes to their foundation grants and the *Serrano v. Priest* decision gave reforms a legal push, equalization of school finance across school districts has been a prime concern of state policy makers (Chandler, 2002). Equity in the financing of education continues to hold the attention of educational

researchers and policymakers. Questions about whether public education funds are being fairly allocated (equity) and are sufficient for their specified purpose (adequacy) are being contested and debated by legislative and judicial bodies across the nation in the states on a regular and ongoing basis (Parrish, Hikido, & Fowler, 1998). New attention to adequacy issues does not eliminate concerns about inequalities (Verstegen, 2002).

The justification for this study is much the same as it was when Dr. Shiver first proposed to study the issue. Without a current understanding of the historical development of Florida's school finance program, legislative and executive decision-makers concerned with public school funding will be hard pressed to formulate sound policies for the future. The primary focus of school finance equity analysis has rightly been on measuring imbalances in students' access to educational resources within a state (Fastrup, 2002). Documentation of Florida's historical quest for equalization of educational opportunity can provide school funding policy-makers with an account of what has been accomplished in the past, thus facilitating their understanding of the origins and development of present-day problems and serving as a guide for the future. One of the most important standards by which we judge our education systems is equity (Bundt & Leland, 2001). The ultimate goal of educational finance and economic research is to improve the quantity and quality of educational opportunities provided to all children (Rolle, Houck, & McColl, 2008).

Financial equity among school expenditures is one type of educational input whose importance is widely recognized (Oesch & Paquette, 1995). Although there are a few examples in which the target of equity has been the taxpayer, courts have only been

concerned with the extent to which the state is providing equal educational opportunity for children (Cohen-Vogel & Cohen-Vogel, 2001). Although difficult to measure, or even define, equality of educational opportunity as a central policy objective has prompted continuous study (Oesch & Paquette, 1995). The review of the historical development of the state's school finance plan contained within this study seeks to expand significantly on the Dr. Shiver study. Current analysis of the FEFP's impact on equalization of educational opportunity in the state will not only allow legislators and others interested in Florida's school finance plan to assess the current status of school finance equity in Florida, but coupled with a review of the historical development of the state's support for public schools, provides needed, consequential information for the continued improvement of Florida's schools.

When describing the limitations of his 1982 study, Dr. Shiver wrote "this study's analysis of the equalization trends before and after enactment of the FEFP may differ significantly in a future assessment of the long-run equity effects of the FEFP" (p. 14). This study seeks to provide that relevancy through the addition of current information and analysis to determine long-term trends in the equity of Florida's system for financing public K-12 education.

Definition of Terms

The following terms were defined and utilized by the Shiver study. Their definitions are presented here unchanged for consistency (Shiver, 1982, p. 18).

Distributional Equality. Distributional equality refers to the absence of disparities in the cost-adjusted distribution of per pupil, unweighted FTE, revenues.

Equalized Educational Opportunity. Equalized educational opportunity means that every individual should have an equal chance to acquire the type and quality of education that will meet his personal needs and the needs of his society.

Fiscal Neutrality. When the quality of a child's education is unrelated to the wealth of the district in which the child lives, the school finance program is said to be fiscally neutral.

Foundation Program. A foundation program is a school finance system financed jointly by the state and local school districts in proportion to their relative taxpaying ability.

Full Time Equivalent (FTE) Student. An FTE student is a student who is enrolled in one or a combination of FEFP programs for not less than 25 hours per week in grades four through twelve or less than 20 hours per week if enrolled in kindergarten through grade three. The 2008-2009 FEFP defined a full time equivalent student as "one student in membership in one or more FEFP programs for a school year or its equivalent (Florida Department of Education, 2008, p. 9).

Revenue. Revenue refers to the dollar amount of funds received from specified sources (e.g., state, local).

Organization of the Study

This study is divided into five chapters. Chapter one introduces the problem and the procedures to be used. Chapter two is an overview of the historical development of public school finance in Florida from 1982-2009. The methods and procedures to be used in the study as well as a brief discussion of the results of the previous study

comprise chapter three. Chapters four and five will represent the application of the statistical tools to the identified variables of interest. Specifically, chapter four will provide the analysis of the data and chapter five will present a summary of the findings, relevant conclusions, and recommendations for future practice.

CHAPTER 2

HISTORICAL REVIEW OF THE DEVELOPMENT OF FLORIDA'S SCHOOL FINANCE PROGRAM FROM 1982 TO 2009

Florida's system for financing the operation of public school districts and schools, the Florida Education Finance Program (FEFP), has remained relatively consistent since its implementation in 1973. The FEFP bases funding on student enrollment, types of services or programs in which students participate, an annual monetary allocation per student, and the cost of operating a school district in local economies (Florida Department of Education [FLDOE], 1981). In addition to these basic components of the FEFP, the formula also allows for categorical supplements and allocations.

The purpose of this chapter is to examine the evolution of the FEFP from 1982 through 2009. The chapter will begin with an examination of the FEFP in 1982. It will continue by exploring the changes the FEFP has undergone in each of five broad categories:

1. Changes in the District Cost Differential
2. Changes in the Program Cost Factors
3. Inclusion and Exclusion of Various Adjustments
4. Additional Allocations Outside of the Base FEFP Calculation
5. The Inclusion of Lottery Dollars

The chapter will conclude by examining the most recent FEFP for 2008-09, discussing legal challenges brought against the FEFP, and drawing some conclusions about how the FEFP has changed over the last 27 years.

The FEFP Funding Formula in 1982

Traditionally, state agencies have distributed dollars to school districts by formulas based upon instructional units or special services. In 1973, the Florida Legislature passed the Florida Education Finance Program (FEFP) which changed the focus for funding education in the state. The Citizens Committee on Education, appointed in 1971 by Governor Askew, was generally credited with originating the basic thrust of the 1973 school finance bill. Much of the committee's report was based on a National Education Finance Project (NEFP) study of Florida directed by R. L. Johns of the University of Florida (Shiver, 1982).

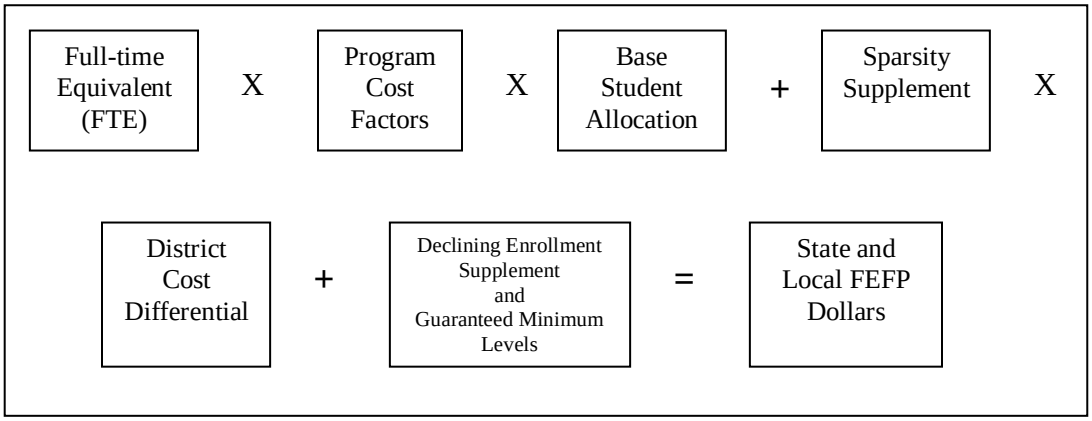
To provide equalization of educational opportunity in Florida, the FEFP formula recognized (1) varying program cost factors, (2) district cost differentials, (3) differences in per student cost for equivalent educational programs due to sparsity and dispersion of student population, and (4) required local effort.

The key feature of the finance program is to base financial support for education upon the individual student participating in a particular educational program rather than upon the number of teachers or classrooms. FEFP funds are generated by multiplying the number of full-time equivalent students (FTE's) in each of the educational programs by cost factors to obtain weighted FTE's. Weighted FTE's are then multiplied by a base student allocation and by a district cost differential to determine the state and local FEFP

funds. Educational program cost factors are determined by the legislature and represent relative cost differences among the FEFP programs (FLDOE, 1981).

A total of $1,694,023,329 was appropriated for distribution in the Florida Education Finance Program for the 1981-82 school year (FLDOE, 1981). A graphical illustration, Figure 1, of how the FEFP determines total state and local FEFP funds follows with a discussion of each of the components.

Figure 1: Calculation of State and Local FEFP in 1980



Full-time Equivalent (FTE)

A full-time equivalent in accordance with the provisions of the 1981-82 FEFP is one student on the membership roll of one school program or combination of school programs for five school days or the equivalent consisting of not less than a certain number of net hours as defined by the program type. A combination of full or part-time students in one of the program areas is the equivalent of one full-time student based on certain criteria for each program type (FLDOE, 1981).

To be eligible for full-time equivalent membership, a student must meet both of the following requirements: (1) The student must be in program membership at least one day during the survey period, and (2) The student must be in attendance at least one of the days of the survey period or one of the six days preceding the survey period on which students were in attendance (FLDOE, 1981).

Program Cost Factors

To recognize the varying cost of educating students in different educational programs, the program cost factors provide a funding variable. The Program Cost Factors for the 1981-82 fiscal year are listed in Table 1.

Base Student Allocation

The based student allocation is determined annually by the legislature. For the 1981-82 fiscal year, the base student allocation was $1,238.99 (FLDOE, 1981).

Sparsity Supplement

Some school districts will qualify annually for a supplement for the extra costs of equivalent educational programs which have been caused by the sparsity of the student population. This supplement was represented and discussed in the 1981-82 FEFP, but no funds were allocated for distribution.

District Cost Differential

Just as the FEFP recognizes the varying cost of educating students in different educational programs, it also recognized the varying cost of educating students in different economies across the state. The state policy objective for including cost

Table 1: 1981-82 Program Cost Factors (FLDOE, 1981)

- Basic Program
  - Kindergarten and Grades 1, 2, and 3 — 1.234
  - Grades 4, 5, 6, 7, 8, and 9 — 1.000
  - Grades 10, 11, and 12 — 1.089
  - Educational Alternatives — 1.869

- Exceptional Student Programs
  - Educable Mentally Retarded — 2.139
  - Trainable Mentally Retarded — 2.803
  - Physically Handicapped — 3.455
  - Physical & Occupational Therapy (part-time) — 6.493
  - Speech and Hearing Therapy (part-time) — 7.316
  - Deaf — 3.775
  - Visually Handicapped (part-time) — 10.983
  - Visually Handicapped — 3.927
  - Emotionally Disturbed (part-time) — 5.507
  - Emotionally Disturbed — 3.287
  - Specific Learning Disability (part-time) — 4.767
  - Specific Learning Disability — 2.279
  - Gifted (part-time) — 2.524
  - Hospital Homebound (part-time) — 14.389
  - Profoundly Handicapped — 5.628

- Adult General Education Programs
  - Adult Basic Education & Adult High School — 1.066

- Vocational-Technical Programs

	7-12 Vocational	Job Preparatory	Adult Supplemental
Agriculture	2.170	2.130	2.052
Business & Office	1.627	1.651	1.453
Distributive	1.508	1.585	1.293
Diversified	1.404	1.433	------
Health	2.097	2.157	1.491
Public Service	2.358	2.380	1.787
Home Economics	1.665	1.696	1.342
Industrial	2.077	2.023	1.683
Exploratory	1.399	------	------

adjustments to state aid is to promote equity (Baker, 2008). To that end, the FEFP includes a district cost differential. The district cost differential is based upon an average of the previous three years of the Florida Price Level Index as determined by the Department of Administration. The district cost differentials for the 1981-82 fiscal year are listed in Table 2

Table 2: 1981-82 District Cost Differentials (FLDOE, 1981)

Alachua 0.9817	Hamilton 0.9655	Okeechobee .. 0.9783
Baker..... 0.9590	Hardee..... 0.9674	Orange 0.9827
Bay..... 0.9572	Hendry 0.9770	Osceola 0.9727
Bradford..... 0.9562	Hernando..... 0.9681	Palm Beach .. 1.0203
Brevard..... 0.9885	Highlands 1.9687	Pasco..... 0.9684
Broward 1.0213	Hillsborough..... 0.9894	Pinellas..... 0.9974
Calhoun..... 0.9566	Holmes..... 0.9540	Polk..... 0.9750
Charlotte..... 0.9842	Indian River..... 0.9929	Putnam..... 0.9511
Citrus..... 0.9694	Jackson..... 0.9636	St. Johns..... 0.9786
Clay..... 0.9815	Jefferson..... 0.9708	St. Lucie..... 0.9862
Collier 1.0168	Lafayette 0.9678	Santa Rosa.... 0.9538
Columbia..... 0.9634	Lake 0.9745	Sarasota..... 1.0041
Dade..... 1.0442	Lee 1.0048	Seminole 0.9872
De Soto 0.9703	Leon..... 0.9669	Sumter..... 0.9679
Dixie 0.9642	Levy..... 0.9608	Suwannee 0.9608
Duval..... 0.9805	Liberty..... 0.9752	Taylor..... 0.9594
Escambia 0.9640	Madison 0.9543	Union 0.9656
Flagler 0.9873	Manatee..... 0.9890	Volusia..... 0.9911
Franklin..... 0.9818	Marion..... 0.9750	Wakulla..... 0.9842
Gadsden 0.9603	Martin 1.0157	Walton 0.9670
Gilchrist 0.9716	Monroe..... 1.0721	Washington .. 0.9576
Glades 0.9909	Nassau..... 0.9641	
Gulf..... 0.9618	Okaloosa 0.9758	

Declining Enrollment & Guaranteed Minimum Levels

This supplement and guarantee was the only such provision of the 1981-82 FEFP. The funding component is a collection of three guaranteed minimum funding provisions.

The first of the minimum funding provisions is the declining enrollment supplement. In those districts where there is a decline in the unweighted FTE's (enrollment), 50 percent of the decline is to be multiplied by the prior year's calculated FEFP program per unweighted FTE and added to the allocation of the district (FLDOE, 1981).

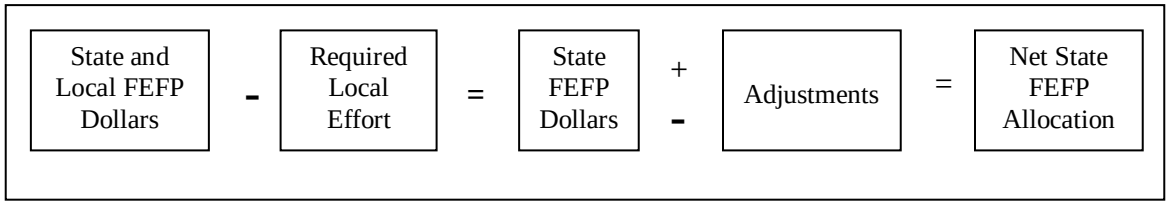
The second guaranteed minimum funding level provision is then applied to the total of all of the preceding dollars including the declining enrollment provision. It guarantees that each district will receive the greater of the total potential funding per full-time equivalent student or the total funding available per full-time equivalent student in the previous year, multiplied by the current full time equivalent students (FLDOE, 1981).

The third provision provides that in addition to all other hold harmless provisions, each school district is entitled to receive additional state funds through the FEFP to compensate for reductions in funding related to certain federal programs (FLDOE, 1981).

State & Local FEFP Dollars

The state and local FEFP dollars is the total amount allocated for the current operations of each school district. It is subject to a reduction for local effort and various adjustments as illustrated in Figure 2.

Figure 2: Calculation of Net State FEFP in 1981-82



Required Local Effort

The district required local effort is subtracted from the basic amount for current operation or state and local FEFP dollars. The required local effort is set by the legislature. For the 1981-82 fiscal year, the legislature set the required local effort at $838,673,038. The Commissioner of Education, based on the amount set by the legislature then sets the state-wide property millage levy necessary. For the 1981-82 fiscal year, the millage rate was 4.512 mills (FLDOE, 1981).

State FEFP Dollars

The state portion of the FEFP or state FEFP dollars is the result of subtracting the required local effort from the state and local FEFP dollars.

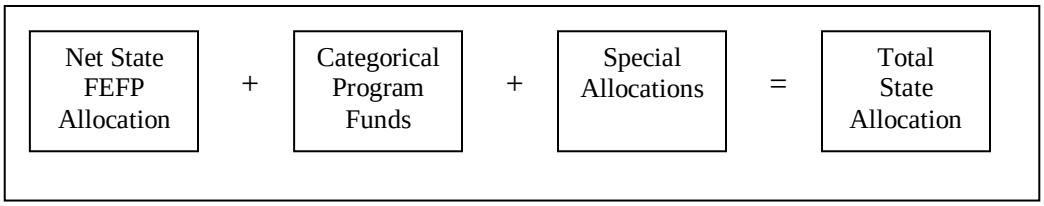
Adjustments

A provision is also included in the 1981-82 FEFP to authorize the Department of Education to make prior-year adjustments in the allocation of funds to a district for arithmetical errors, assessment roll changes, full-time equivalent student membership errors, or allocation errors revealed in an audit report.

Net State FEFP Allocation

As Figure 3 illustrates, by removing the adjustments from the state FEFP dollars, one can arrive at the net state FEFP allocation. The net state FEFP allocation is then increased by categorical program funds and special allocations to determine the total state allocation.

Figure 3: Calculation of Total State Allocation in 1981-82



Categorical Program Funds

Categorical program funds are added to the FEFP allocation which is distributed to districts. The 1981-82 FEFP included eight such programs with allocations totaling $291,134,427. They are listed below (FLDOE, 1981):

- Community Schools $2,355,242
- Comprehensive Health Education 1,272,868
- Comprehensive School Construction and Debt Service 150,035,935
  - Public Education Capital Outlay $92,035,935
  - Motor Vehicle License Sales 58,000,000
- Diagnostic and Learning Resources 817,479
- Instructional Materials 36,290,000
- School Lunch 9,321,676
- Student Development Services 20,659,148
- Student Transportation 70,382,079

Special Allocations

Special Allocations are added to the FEFP allocation which is distributed to districts. Special allocations include all other sources of state aid for districts not classified by Florida Statutes as FEFP or categorical program funds. The 1981-82 FEFP included eight such special allocations totaling $142,144,159. They are listed below (FLDOE, 1981):

• Community Instructional Services	$4,889,963
• Compensatory Education Supplement	33,176,646
• Educational Improvement Grants	469,673
• Environmental Education	325,437
• K-3 Improvement Program	79,899,792
• Law Education	185,179
• Migrant Education for 3 and 4 year olds	2,000,000
• School Volunteer Program	319,929
• School Bus Replacement	12,144,040
• School Safety Fund – Pilot Program, Dade County	2,500,000
• Writing Skills Enhancement	6,000,000
• Governor's Summer Program for the Gifted	233,500

Total State Allocation

The total state allocation is the result of adding the categorical program funds and the special allocations to the net state FEFP allocation. The total state allocation represents the total state financial contribution to the operation of local school districts.

The Evolution of the FEFP

Changes to the District Cost Differentials

The District Cost Differentials serve as a funding variable to adjust for the cost of doing business in the 67 county school districts in Florida. Its function in the Florida Education Finance Program has remained unchanged throughout the 27 year period covered by this study. However, the method in which the District Cost Differentials has been calculated has varied during this period.

Calculation of the District Cost Differential

In 1981-82, the District Cost Differential was based upon the average of the three previous years of the Florida Price Level Index as determined by the Department of Administration (FLDOE, 1981). This was consistent through the 1988-89 Florida

Education Finance Program. The only change during this eight year period was a change in responsibility for determining the Florida Price Level Index being moved from the Department of Administration to the Executive Office of the Governor (FLDOE, 1988).

The 1989-90 Florida Education Finance Program brought a significant change to the District Cost Differential. It was no longer solely based on the three year average of the Florida Price Level Index. The 1989 Legislature provided that each district with a calculated value below 1.000 would be set to 1.000 in determining FEFP allocations. Only 9 of the 67 county school districts had a District Cost Differential other than 1.000 (FLDOE, 1989). The practice of setting values at 1.000 for districts under 1.000 was repeated again in the 1990-91 Florida Education Finance Program. Once again only 9 districts had a District Cost Differential other than 1.000 (FLDOE, 1990).

For a two year period beginning in 1991-92, the District Cost Differential was based on the three year average of the Florida Price Level Index with three major adjustments. The first adjustment sought to tie the District Cost Differential to the salary component of school district operating costs. To accomplish this, the averaged index factor was multiplied by 0.008 and 0.200 was added to the product. The second adjustment indexed the calculated District Cost Differential so that the lowest value becomes 1.000. This was a significant departure from simply resetting all values less than 1.000 at 1.000. The third adjustment was that districts were placed in regions that correspond to the state's judicial circuits, and all districts in such regions or circuits are given the highest value calculated for any district assigned to that region (FLDOE, 1991).

The District Cost Differential calculation in 1993-94 and 1994-95 did not contain the provision of regions tied to the judicial circuits. It did, however, continue to be based on a three year average of the index adjusted to the salary component and was still indexed so that the lowest score was 1.000 (FLDOE, 1993).

The Florida Education Finance Program dropped the practice of indexing scores so that the lowest score was 1.000 in 1995-96. The 1995-96 FEFP calculated the District Cost Differential based on the three year average of the Florida Price Level Index and adjusted for the salary component by multiplying by 0.800 and adding 0.200 to its product (FLDOE, 1995). The District Cost Differential has continued to be calculated in this manner through the end of the study period in 2008-09 (FLDOE, 2008).

The Florida Price Level Index

The Florida Price Level Index is an economic measure determined by the state or a delegated agency. Its use is not exclusive to the Florida Education Finance Program. The consumer price index is used to adjust other state allocations to various areas of the state. The responsibility for determining the Florida Price Index currently belongs to the Executive Office of the Governor.

The manner in which the Florida Price Level Index is calculated is not within the scope of this study. It should be said, however, that changes and advancements in economic and statistical measures as well as political climates over the years has had an impact on how the Florida Price Level Index is calculated. Any adjustment in the way the Florida Price Level Index is calculated will have a residual effect on how the District

Cost Differential is determined, ultimately effecting the distribution of educational funding throughout the state.

Changes in the Program Cost Factors

As discussed previously, the program cost factors serve as a funding variable that recognizes the varying expense of educating students in different educational programs. Its role as that funding variable has been consistent during the 27 year period from 1981-82 through 2008-09. Tables 3, 4, and 5 show the program cost factors for each year from 1981-82 through 2008-09.

The Number of Program Cost Factors

In 1981-82, there were 44 different program cost factors (FLDOE, 1981). The number of program cost factors steadily rose as the legislature added different funding categories. By the 1996-97 fiscal year, there were 54 program cost factors (FLDOE, 1996).

The 1997-98 Florida Education Finance Program brought a dramatic change to the number of program cost factors, but not their role as a funding variable. In 1997-98, there were only 12 program cost factors --- a significant decrease from the 54 of the previous year (FLDOE, 1997). The decrease in program cost factors can be traced to Exceptional Student Education and Technical and Career Education. In 1996-97, there were 18 program cost factors for Exceptional Student Education and 25 for Technical and Career Education (FLDOE, 1996). In 1997-98, the program cost factors had been reduced to 5 and 1 respectively (FLDOE, 1997). The reduction of program cost factors resulted in a streamlining of the calculation of district funds.

Program cost factors were further reduced in 2000-01. In the 2000-01 Florida Education Finance Program, there are only 7 program cost factors (FLDOE, 2000). This reduction is again attributable to a decrease in program cost factors for Exceptional Student Education (ESE). Beginning in 2000-01, students in Exceptional Education levels 1, 2, and 3 received the same program weight as those students in the corresponding grade level basic program. Funding for ESE students in levels 1, 2, and 3 is appropriated in the ESE Guaranteed Allocation which was first included in the 2000-01 FEFP.

The following pages contain a table that depicts the program cost factors for each year from the 1981-82 FEFP to the 2008-09 FEFP.

Program Caps

During the 27 year period covered by this study, the program cost factors have been subject to a series of caps. These caps serve to reduce the amount of weighted funding districts receive. As an example, the 1981-82 Florida Education Finance Program contained a cap on students enrolled in the Specific Learning Disability Part-Time (SLD PT) program. The provision stated, "any unweighted FTE assigned to the SLD PT program in any district, which is in excess of .87% of the total K-12 unweighted FTE for that district, shall be adjusted to a factor of 1. However, no district shall receive less than the unweighted FTE generated in 1978-79" (FLDOE, 1981, p. 10).

Table 3: Program Cost Factors, 1981-82 to 1989-90

Program	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90
Basic K-3	1.234	1.165	1.234	1.234	1.131	1.121	1.098	1.077	1.048
Basic 4-8	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Basic 9-12	1.089	1.106	1.116	1.180	1.167	1.188	1.190	1.192	1.186
Dropout Prevention							1.683	1.689	1.722
Teenage Parent									
Dropout Prevention / Teen Parent									
Int. Eng./ESOL K-3							1.683	1.689	1.734
Int. Eng./ESOL 4-8							1.683	1.689	1.727
Int. Eng./ESOL 9-12							1.683	1.689	1.692
Int. Eng./ESOL All levels									
Basic "Educational Alternatives"	1.869	1.818	1.763	1.676	1.632	1.657			
Basic Mainstream K-3			2.352	2.468	2.262	2.242	2.196	2.144	2.096
Basic Mainstream 4-8			2.000	2.000	2.000	2.000	2.000	2.000	2.000
Basic Mainstream 9-12			2.232	2.360	2.334	2.376	2.380	2.384	2.372
Basic Mainstream "Ed. Alternatives"			3.526	3.352	3.264	3.314			
ESE Educable Mentally Retarded	2.139	2.149	2.154	2.172	2.189	2.184	2.188	2.182	2.176
ESE Trainable Mentally Retarded	2.803	2.832	2.863	2.887	2.927	2.937	2.982	3.010	3.006
ESE Physical Handicapped	3.455	3.472	3.539	3.718	3.839	3.896	3.821	3.812	3.752
ESE PT/OT part-time	6.493	6.674	7.045	7.698	7.981	8.099	8.003	8.453	8.722
ESE Speech, Lang. & Hearing (pt)	7.316	6.870	6.795	6.379	6.052	6.024	5.966	5.901	5.642
ESE Speech, Lang. & Hearing (ft)				3.888	3.995	3.827	3.700	3.476	3.434
ESE Deaf	3.775	3.835	3.840						
ESE Visually Handicapped (pt)	10.983	11.393	11.666	12.452	13.118	13.654	13.896	13.946	13.697
ESE Visually Handicapped (ft)	3.927	4.248	4.316	4.587	4.793	4.860	4.957	4.989	4.861
ESE Emotionally Disturbed (pt)	5.507	5.094	4.922	4.473	4.157	4.125	4.058	4.005	3.908
ESE Emotionally Disturbed (ft)	3.287	3.242	3.183	3.100	3.026	2.976	2.931	2.896	2.867
ESE SLD (pt)	4.767	4.391	4.309	3.950	3.688	3.604	3.506	3.402	3.246
ESE SLD (ft)	2.279	2.347	2.294	2.286	2.275	2.266	2.272	2.241	2.182
ESE Gifted (pt)	2.524	2.427	2.371	2.242	2.148	2.135	2.104	2.059	1.992
ESE Hospital Homebound (pt)	14.389	13.295	12.873	11.610	10.442	10.004	9.965	10.592	11.457
ESE Profoundly Handicapped	5.628	4.843	5.330	5.330	4.178	4.299	4.429	4.513	4.525
ESE K-3 w/ services									
ESE 4-8 w/ services									
ESE 9-12 w/ services									
ESE Support Level 1									
ESE Support Level 2									
ESE Support Level 3									
ESE Support Level 4									
ESE Support Level 5									
Special Districts (HRS)					2.600	2.600			
Adult Basic & Adult High School	1.066	0.999	1.012	0.946	0.924	9.120			
Adult Basic Skills							0.929	0.904	0.860
Adult Secondary Education							0.929	0.904	0.854
Lifelong Learning							0.800	0.630	0.600
Adult Handicapped									
Vocational Education, 6-12									
TCE Agriculture, 7-12	2.170	1.991	1.989	1.860	1.807	1.796	1.801	1.771	1.743
TCE Agriculture, Job Prep	2.130	1.923	1.929	1.735	1.618	1.556	1.641	1.679	1.683
TCE Agriculture, Adult	2.052	1.760	1.945	1.583	1.400	1.253	1.304	1.327	1.256
TCE Business, 7-12	1.627	1.475	1.470	1.321	1.274	1.262	1.301	1.282	1.262
TCE Business, Job Prep	1.651	1.499	1.479	1.346	1.301	1.336	1.372	1.366	1.352
TCE Business, Adult	1.453	1.428	1.315	1.180	1.049	1.107	1.161	1.215	1.207
TCE Distributive, 7-12	1.508	1.414	1.409	1.351	1.341	1.320	1.258	1.185	1.144
TCE Distributive, Job Prep	1.585	1.471	1.467	1.400	1.378	1.434	1.468	1.495	1.464
TCE Distributive, Adult	1.296	1.183	1.183	1.152	1.085	1.111	1.042	1.051	0.928
TCE Diversified, 7-12	1.404	1.381	1.386	1.382	1.393	1.383	1.340	1.311	1.264
TCE Diversified, Job Prep	1.433	1.370	1.336	1.222	1.128	1.120	1.199	1.441	1.368
TCE Health, 7-12	2.097	1.967	1.952	1.833	1.775	1.763	1.743	1.717	1.642
TCE Health, Job Prep	2.157	2.021	1.975	1.840	1.785	1.865	1.924	1.924	1.816
TCE Health, Adult	1.491	1.251	1.393	1.248	1.208	1.212	1.244	1.378	1.369
TCE Public Service, 7-12	2.358	1.975	2.052	1.865	1.821	1.870	1.902	1.857	1.494
TCE Public Service, Job Prep	2.380	2.073	1.912	1.530	1.246	1.253	1.213	1.211	1.150
TCE Public Service, Adult	1.787	1.437	1.472	1.192	0.994	0.873	0.868	0.936	0.970
TCE Home Economics, 7-12	1.665	1.588	1.582	1.516	1.489	1.457	1.407	1.335	1.291
TCE Home Economics, Job Prep	1.696	1.679	1.634	1.531	1.443	1.422	1.429	1.506	1.534
TCE Home Economics, Adult	1.342	1.170	1.162	1.045	0.988	0.991	1.008	1.053	1.197
TCE Industrial, 7-12	2.077	2.013	1.982	1.906	1.891	1.899	1.900	1.847	1.800
TCE Industrial, Job Prep	2.023	1.823	1.785	1.595	1.506	1.514	1.527	1.548	1.543
TCE Industrial, Adult	1.683	1.543	1.514	1.390	1.294	1.314	1.273	1.259	1.240
Exploratory, 7-12	1.399	1.390	1.382	1.360	1.321	1.290	1.263	1.273	1.284
Vocational Mainstream									

Table 4: Program Cost Factors, 1990-91 to 1999-2000

Program	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00
Basic K-3	1.031	1.018	1.014	1.017	1.029	1.041	1.049	1.054	1.057	1.057
Basic 4-8	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Basic 9-12	1.196	1.213	1.225	1.224	1.210	1.198	1.190	1.169	1.138	1.115
Dropout Prevention	1.731	1.707	1.656	1.615	1.571	1.495	1.474			
Teenage Parent						1.495	1.474			
Dropout Prevention / Teen Parent								1.438	1.399	
Int. Eng./ESOL K-3	1.695	1.692	1.644	1.600	1.478	1.311	1.280			
Int. Eng./ESOL 4-8	1.732	1.690	1.679	1.617	1.509	1.262	1.280			
Int. Eng./ESOL 9-12	1.773	1.748	1.649	1.454	1.318	1.310	1.280			
Int. Eng./ESOL All levels								1.245	1.201	1.211
Basic "Educational Alternatives"								1.169	1.138	
Basic Mainstream K-3	2.062	2.036	2.028	2.034	2.058	2.082	2.098			
Basic Mainstream 4-8	2.000	2.000	2.000	2.000	2.000	2.000	2.000			
Basic Mainstream 9-12	2.392	2.426	2.450	2.448	2.420	2.396	2.380			
Basic Mainstream "Ed. Alternatives"										
ESE Educable Mentally Retarded	2.161	2.149	2.184	2.214	2.226	2.195	1.979			
ESE Trainable Mentally Retarded	2.990	2.954	2.922	2.899	2.934	2.977	3.111			
ESE Physical Handicapped	3.667	3.569	3.453	3.398	3.285	3.285	3.111			
ESE PT/OT part-time	9.033	9.079	9.527	10.664	11.729	12.971	13.690			
ESE Speech, Lang. & Hearing (pt)	5.520	5.478	5.475	5.392	5.312	5.313	5.333			
ESE Speech, Lang. & Hearing (ft)	3.337	3.200	3.176	3.130	3.103	2.992	2.777			
ESE Deaf										
ESE Visually Handicapped (pt)	13.856	14.506	15.145	15.773	16.168	16.687	17.069			
ESE Visually Handicapped (ft)	4.657	4.417	4.353	4.309	4.558	4.660	5.333			
ESE Emotionally Disturbed (pt)	3.793	3.725	3.740	3.851	3.859	3.878	4.287			
ESE Emotionally Disturbed (ft)	2.837	2.821	2.812	2.807	2.740	2.751	2.777			
ESE SLD (pt)	3.113	3.001	2.914	2.816	2.766	2.769	2.777			
ESE SLD (ft)	2.117	2.078	2.049	1.998	1.939	1.920	1.979			
ESE Gifted (pt)	1.951	1.918	1.896	1.841	1.785	1.747	1.710			
ESE Hospital Homebound (pt)	11.380	11.505	11.611	12.114	12.606	12.522	12.690			
ESE Profoundly Handicapped	4.479	4.417	4.396	4.386	4.391	4.357	4.287			
ESE K-3 w/ services										
ESE 4-8 w/ services										
ESE 9-12 w/ services										
ESE Support Level 1								1.341	1.341	1.341
ESE Support Level 2								2.072	2.072	2.072
ESE Support Level 3								3.287	3.287	3.287
ESE Support Level 4								4.101	4.101	4.101
ESE Support Level 5								6.860	6.860	6.860
Special Districts (HRS)										
Adult Basic & Adult High School										
Adult Basic Skills	0.805	0.780	0.745	0.721	0.718	0.766	0.802			
Adult Secondary Education	0.807	0.788	0.763	0.758	0.785	0.853	0.802			
Lifelong Learning	0.726	0.700	0.700							
Adult Handicapped	1.614	1.575	1.337	1.140	0.933	0.994	0.962			
Vocational Education, 6-12								1.272	1.240	1.211
TCE Agriculture, 7-12	1.716	1.711	1.728	1.710	1.676	1.612	1.513			
TCE Agriculture, Job Prep	1.617	1.559	1.537	1.455	1.452	1.454	1.477			
TCE Agriculture, Adult	1.322	1.363	1.516	1.614	1.676	1.807	1.477			
TCE Business, 7-12	1.239	1.224	1.229	1.235	1.250	1.254	1.248			
TCE Business, Job Prep	1.340	1.329	1.292	1.267	1.267	1.299	1.373			
TCE Business, Adult	1.162	1.142	1.114	1.190	1.272	1.371	1.373			
TCE Distributive, 7-12	1.134	1.124	1.112	1.124	1.140	1.176	1.174			
TCE Distributive, Job Prep	1.404	1.398	1.374	1.354	1.348	1.328	1.293			
TCE Distributive, Adult	0.861	0.795	0.806	0.827	0.959	1.038	1.293			
TCE Diversified, 7-12	1.237	1.185	1.185	1.204	1.231	1.241	1.232			
TCE Diversified, Job Prep	1.239	0.942	0.877	0.847	0.925	0.932	0.948			
TCE Health, 7-12	1.606	1.563	1.513	1.439	1.345	1.347	1.333			
TCE Health, Job Prep	1.729	1.608	1.506	1.429	1.410	1.451	1.488			
TCE Health, Adult	1.433	1.483	1.454	1.432	1.371	1.442	1.488			
TCE Public Service, 7-12	1.157	0.907	0.930	0.969	1.020	1.076	1.119			
TCE Public Service, Job Prep	1.097	1.020	0.959	1.011	1.045	1.113	1.155			
TCE Public Service, Adult	1.001	0.989	1.060	1.161	1.237	1.297	1.155			
TCE Home Economics, 7-12	1.278	1.274	1.261	1.247	1.254	1.272	1.277			
TCE Home Economics, Job Prep	1.560	1.477	1.433	1.383	1.369	1.293	1.265			
TCE Home Economics, Adult	1.292	1.424	1.367	1.356	1.272	1.290	1.265			
TCE Industrial, 7-12	1.764	1.752	1.746	1.740	1.758	1.764	1.743			
TCE Industrial, Job Prep	1.551	1.477	1.418	1.361	1.384	1.421	1.473			
TCE Industrial, Adult	1.232	1.294	1.332	1.463	1.573	1.778	1.473			
Exploratory, 7-12	1.308	1.303	1.276	1.238	1.222	1.215	1.198			
Vocational Mainstream		2.737	2.325	1.979	1.675	1.860	1.966			

Table 5: Program Cost Factors, 2000-01 to 2008-09

Program	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09
Basic K-3	1.036	1.007	1.005	1.002	1.012	1.018	1.035	1.048	1.066
Basic 4-8	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Basic 9-12	1.096	1.113	1.122	1.140	1.132	1.113	1.088	1.066	1.052
Dropout Prevention									
Teenage Parent									
Dropout Prevention / Teen Parent									
Int. Eng./ESOL K-3									
Int. Eng./ESOL 4-8									
Int. Eng./ESOL 9-12									
Int. Eng./ESOL All levels	1.226	1.265	1.275	1.275	1.302	1.318	1.275	1.200	1.119
Basic "Educational Alternatives"									
Basic Mainstream K-3									
Basic Mainstream 4-8									
Basic Mainstream 9-12									
Basic Mainstream "Ed. Alternatives"									
ESE Educable Mentally Retarded									
ESE Trainable Mentally Retarded									
ESE Physical Handicapped									
ESE PT/OT part-time									
ESE Speech, Lang. & Hearing (pt)									
ESE Speech, Lang. & Hearing (ft)									
ESE Deaf									
ESE Visually Handicapped (pt)									
ESE Visually Handicapped (ft)									
ESE Emotionally Disturbed (pt)									
ESE Emotionally Disturbed (ft)									
ESE SLD (pt)									
ESE SLD (ft)									
ESE Gifted (pt)									
ESE Hospital Homebound (pt)									
ESE Profoundly Handicapped									
ESE K-3 w/ services	1.036	1.007	1.005	1.002	1.012	1.018	1.035	1.048	1.066
ESE 4-8 w/ services	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ESE 9-12 w/ services	1.010	1.113	1.122	1.140	1.132	1.113	1.132	1.066	1.052
ESE Support Level 1									
ESE Support Level 2									
ESE Support Level 3									
ESE Support Level 4	3.948	3.948	3.948	3.948	3.948	3.818	3.734	3.625	3.570
ESE Support Level 5	5.591	5.591	5.591	3.948	5.591	1.193	5.201	5.062	4.970
Special Districts (HRS)									
Adult Basic & Adult High School									
Adult Basic Skills									
Adult Secondary Education									
Lifelong Learning									
Adult Handicapped									
Vocational Education, 6-12	1.211	1.206	1.186	1.190	1.187	1.193	1.159	1.119	1.077
TCE Agriculture, 7-12									
TCE Agriculture, Job Prep									
TCE Agriculture, Adult									
TCE Business, 7-12									
TCE Business, Job Prep									
TCE Business, Adult									
TCE Distributive, 7-12									
TCE Distributive, Job Prep									
TCE Distributive, Adult									
TCE Diversified, 7-12									
TCE Diversified, Job Prep									
TCE Health, 7-12									
TCE Health, Job Prep									
TCE Health, Adult									
TCE Public Service, 7-12									
TCE Public Service, Job Prep									
TCE Public Service, Adult									
TCE Home Economics, 7-12									
TCE Home Economics, Job Prep									
TCE Home Economics, Adult									
TCE Industrial, 7-12									
TCE Industrial, Job Prep									
TCE Industrial, Adult									
Exploratory, 7-12									
Vocational Mainstream									

The 2008-09 FEFP contained an enrollment ceiling for weighted programs. This ceiling operated as a cap on weighted FTEs. Student enrollment above the cap is funded at the basic level (1.000). These caps are not uncommon and are found in various forms in each year of the Florida Education Finance Program.

Additional Weighted FTE

The 2007-08 FEFP authorized five additional FTE supplements. These FTE supplements are included in a districts weighted FTE and are subject to the other provisions of the FEFP. The five additional FTE supplements are:

- Small District ESE Supplement
- Florida Virtual School
- Small, Isolated High School Supplement
- Bonus FTE Programs
- Algebra Supplement

The 2008-09 FEFP did not include the Algebra Supplement as an additional weighted FTE authorization. The four remaining additional weighted FTE supplements were included in the 2008-09 FEFP.

Inclusion and Exclusion of Various Adjustments

An area that has undergone considerable change during the period from 1981-82 through 2008-09 is the adjustments. Adjustments include certain guarantees, supplements, and incentives.

The Florida Education Finance Program allows for a series of adjustments, guarantees, supplements, and incentives. These adjustments, guarantees, supplements, and incentives are found after the Base Allocation has been determined and are included in the calculation of Total State and Local FEFP Dollars.

In 1981-82, the Florida Education Finance Program had one adjustment, the Declining Enrollment Supplement (FLDOE, 1981). In 2008-09, the Florida Education Finance Program has eleven (FLDOE, 2008). In the 27 year period that falls between the 1981-82 FEFP and the 2008-09 FEFP, there have been 14 different adjustments, guarantees, supplements, and incentives that have come and gone.

In the section that follows, a discussion of each of the 25 Adjustments, Guarantees, Supplements, and Incentives that have been included in the Florida Education Finance Program at some point during the last 27 years is defined and discussed as well as when it appeared in the FEFP.

Declining Enrollment Supplement and Guaranteed Minimum Levels

This supplement and guarantee was the only such provision of the 1981-82 FEFP. This funding component is a collection of three guaranteed minimum funding provisions. The first of these is the declining enrollment supplement. In those districts where there is a decline in the unweighted FTE's (enrollment), 50 percent of the decline is to be multiplied by the prior year's calculated FEFP program per unweighted FTE and added to the allocation of the district (FLDOE, 1981).

The second guaranteed minimum funding level provision is then applied to the total of all of the preceding dollars including the declining enrollment provision. It guarantees that each district will receive the greater of the total potential funding per full-time equivalent student or the total funding available per full-time equivalent student in the previous year, multiplied by the current full-time equivalent students (FLDOE, 1981).

The third provision provides that in addition to all other hold harmless provisions, each school district is entitled to receive additional state funds through the FEFP to compensate for reductions in funding related to certain federal programs (FLDOE, 1981).

The Declining Enrollment Supplement and Guaranteed Minimum Levels component was the first such component of the FEFP. In 1982-83, the component was reduced to simply a Declining Enrollment Supplement removing the Guaranteed Minimum Level and federal funding provisions (FLDOE, 1982). The Declining Enrollment Supplement is included in the funding formula for the most recent FEFP (FLDOE, 2008).

Guaranteed Minimum Level

A separate Guaranteed Minimum Level component was included in 1983-84 FEFP (FLDOE, 1983). The component was also included in the 1984-85 and 1985-86 FEFPs. It was discontinued in 1986-87 (FLDOE, 1987).

Quality Assurance Guarantee

The Quality Assurance Guarantee was implemented in the 1982-83 FEFP. This provision guarantees at least a ten percent increase per FTE student in state funds over the amount received the previous year. If the amount received in the current year per FTE does not equal or exceed ten percent above the previous year's amount per FTE, the district will be given a special allocation in the amount of the deficiency (FLDOE, 1982). This guarantee was included for three years beginning in 1982-83.

Equalization of Discretionary Levy

The 1982 Legislature provided state funds to equalize up to ½ mill of discretionary operating millage for each district when the value of a mill of taxation per student is below the state average value. Only discretionary millage levied by a district in excess of 1.1 mills is eligible for equalization. For qualifying districts, a state supplement will be provided representing the difference between the state average value of a mill per student and the district value of a mill per student, multiplied by the millage levied in excess of 1.1 mills, multiplied by the unweighted FTE membership of the district. This supplement was implemented in the 1982-83 FEFP (FLDOE, 1982). It was renamed the Discretionary Tax Equalization Entitlement in 1983-84 (FLDOE, 1983). It appeared as the Discretionary Tax Equalization Entitlement through 1985-86 (FLDOE, 1985). From 1986-87 through 1993-94, the supplement was not included.

In 1994-95 Discretionary Tax Equalization supplement was reintroduced. The 1994-95 FEFP called for additional funding for districts that levy the discretionary 0.51 mill and an additional .25 mill. An amount was provided to ensure that each district receives $50 per FTE when combined with the amount raised by the 0.25 mill (FLDOE, 1994). The Discretionary Tax Equalization component has been included in every FEFP since it was reintroduced in 1994-95. The 2008-09 FEFP called for additional funding for districts that levy a discretionary 0.498 mill and an additional .25 mill. Districts shall receive a supplement if the additional 0.25 mills realize less than $100 per FTE (FLDOE, 2008).

Profoundly Handicapped Adjustment

The 1985-86 FEFP contained an adjustment to provide additional funds to districts whose preceding fiscal year's per unweighted FTE expenditure level in the profoundly handicapped program exceeds the preceding fiscal year's unweighted FTE revenue allocated to the program by at least 105 percent. The incremental district expenditure difference per unweighted FTE above 105 percent of district generated revenue per unweighted FTE is multiplied by the district's preceding fiscal year unweighted FTE to determine each district's adjustment allocation (FLDOE, 1985). The allocation was expanded from the Profoundly Handicapped Adjustment to the Profoundly Handicapped and Intensive English/ESOL Adjustment in 1986-87.

The 1986-87 FEFP provided additional funding for courses provided for students whose native language is other than English, such as English for Speakers of Other Languages (ESOL). An adjustment in funding is provided when such students are in membership in ESOL, intensive English or other basic courses. This adjustment is 1.25 times the funding weight for the respective basic program (FLDOE, 1986). The supplement returned to simply the Profoundly Handicapped Adjustment in 1988-89 when the ESOL provision was removed and addressed in the Program Cost Factors (FLDOE, 1988). The last year the Profoundly Handicapped Adjustment appeared in the FEFP was 1989-90.

Sparsity Supplement

The 1987-88 FEFP recognized the relative increase in expense of a smaller district through a statutory formula in which the variable factor is a Sparsity index. The

index is computed by dividing FTE of the district by the number of permanent senior high school centers, not to exceed three. Participation was limited to the smallest of districts. Each eligible district's allocation is subject to an adjustment for relative wealth of the district. This adjustment is based on per FTE value of the maximum discretionary levy in the district relative to the state average. If a district's value per FTE exceeds the state average, the Sparsity entitlement is negatively adjusted by an amount equal to the district's FTE multiplied by the per FTE amount which the district's maximum discretionary value per FTE exceeds the state average (FLDOE, 1987). The component was allocated as a categorical program in 1986-87 (FLDOE, 1986). The Sparsity Supplement has enjoyed one of the longest runs in the FEFP being introduced in 1987-88 and continuing through the most recent FEFP. Participation in the Sparsity Supplement is limited to districts of 20,000 or fewer FTE (FLDOE, 2008).

Salary Allocation and Assigned Allocation

The FEFP included a one-year provision of a salary allocation in 1987-88. The Salary Allocation and Assigned Allocation of 20 million dollars were allocated to districts based on each district's proportion of the state total number of instructional personnel. There was an additional assigned allocation in excess of 12 million dollars in the 2007-08 FEFP (FLDOE, 1987).

An allocation similar to the Salary Allocation and Assigned Allocation appeared in 1990-91 as the Salary Improvement Incentive. The Salary Improvement Incentive provided a one-year enhancement of in excess of 100 million dollars (FLDOE, 1990).

Rapid Growth Supplement

The 1989-90 and 1990-91 FEFPs included an added component to address the needs of districts where growth exceeded the state average change in unweighted FTE enrollment from the actual enrollment count from the previous year to the next year's estimate. The percentage amount by which each district's enrollment growth exceeds the statewide average is to be multiplied by the district current unweighted FTE student count and the result used to distribute the funds allocated to this supplement (FLDOE, 1989).

Extended Day Allocation

The 1990-91 FEFP provided funds on a one-year basis for extended day and seven-period day programs for 9-12 grade students. Districts were allowed to implement one of two programs. The first was a seven period day. It called for seven periods of 50-minutes or more per day and was funded at the rate of $280.35 per student. The second option allowed for six periods of 60-minutes of instruction, it was funded at the rate of $138.38 per student. There was also a provision to fund students in grades 6-8 if the school has a ninth or tenth grade, but not an eleventh or twelfth grade. Such students will be funded if enrolled in seven periods of at least 50-minutes each or an equivalent amount of time (FLDOE, 1990).

Adequacy Supplement

The 1990-91 FEFP also provides funds to guarantee a 5% weighted FTE increase in funding. This increase is measured based on total state and local FEFP, discretionary

local funds, and the major formula based categoricals. The funding for this provision was for the 1990-91 FEFP only (FLDOE, 1990).

Math/Science Incentive

The 1990-91 FEFP sought to increase student enrollment in higher level math and science courses through the Math/Science Incentive. These funds were to be used to enhance the quality of each district's math and science curricula (FLDOE, 1990). It was implemented for one year in 1990-91.

Funding Adjustment

A Funding Adjustment was included in the 1991-92 and 1992-93 FEFP. This adjustment provides for each district to receive an equal change (increase or decrease) in funding relative to the previous year's funding on a weighted FTE student basis. The calculation included state FEFP, major categorical funds, and local required and discretionary tax proceeds in four steps. Step one: Divide the funds from the previous year by that year's weighted FTE students. Step two: Multiply result in step one by district's current funded weighted FTE. Step three: Prorate result in step to achieve a state total amount equal to the sum of all district's unadjusted total potential funds. Step four: Subtract each district's step three prorate amount from the district's current unadjusted total potential funds amount. The result is the district's funding adjustment which assures that each district receives the same percentage change in funds per weighted FTE student (FLDOE, 1991).

Hold Harmless Adjustment

An adjustment to provide each district with a minimum percentage increase in funding to their previous year's funding on a weighted FTE student basis was implemented in 1993-94. The calculation includes state FEFP, major categorical funds, discretionary lottery fund, local required effort taxes and fees, and discretionary tax process (FLDOE, 1993). The Hold Harmless Adjustment was introduced in the 1993-94 FEFP. It was included in eight consecutive FEFPs through 2000-01. It was not included for the first time in 2001-02.

Safe Schools Allocation

In 1994, an amount was appropriated for Safe Schools. The Safe Schools Allocation was included in the FEFP for the first time in 1994-95. The allocation has run continuously through the current FEFP. The Safe Schools Allocation distributes funds to every district on a weighted FTE basis. Districts may not use these funds to supplant funds currently used for these programs. The funds are available for after school programs for at-risk students in middle schools. Districts are encouraged to build on existing after school programs within their communities. Districts are further encouraged to form partnerships with community groups in an effort to maximize resources. These funds are also available for alternative school programs for students involved with the Juvenile Justice System and security programs that will provide for school resource officers, equipment, and other improvements to enhance the environment for learning. Districts must develop plans for the implementation of the specified programs and each

affected school will report on the progress of the programs in the Annual School Report (FLDOE, 1994).

The 2008-09 FEFP guaranteed each district a minimum of $71,538 under the Safe School Allocation. Additional funds are awarded based on two variables: the Florida Crime Index and the district's share of the total state unweighted FTE (FLDOE 2008).

First Grade Class Size Reduction

An amount of 40 million dollars was allocated to achieve the constitutionally mandated objective that for each elementary school, class size for grades one, two, and three shall not exceed 20 students, with a ratio of one teacher per 20 students. These funds were distributed through the First Grade Class Size Reduction supplement. For the purpose of this provision, class sizes that exceed 20 students meet the goal if, for every 10 students above a base of 20 students there is at least one full-time teacher aide. First priority for the use of these funds shall be the reduction of class size for grade level one, second priority shall be for grade level two, and the third priority shall be the third grade. These funds were available only in the 1995-96 FEFP (FLDOE, 1995).

Remediation Reduction Incentive

The amount of 30 million dollars was appropriated for the Remediation Reduction Incentive in the 1996-97 FEFP. The funds were allocated in two parts. Part 1 allocated twenty million dollars based on each district's share of the state total number of students who pass one or more subtests of the college placement test. Part 2 allocates an additional ten million dollars based on each district's enrollment in math and English

courses (FLDOE, 1996). Similar amounts were distributed in 1997-98 and 1998-99 (FLDOE, 1998). The Remediation Reduction Incentive was discontinued in 1999-2000.

Disparity Compression Adjustment

The 1996 Legislature created a component to reduce the disparity in state and local potential funding per unweighted FTE student through the Disparity Compression Adjustment. Districts below the state average receive additional funding based on the greater of two calculations. In the first calculation, if a district's funding per FTE is less than the calculation of one standard deviation below the mean of funding for all districts, then the district's funding is increased to one standard deviation below the mean. In the second calculation, if a district's funding per FTE is less than the mean of all districts, then the difference below the mean is multiplied by an equal percentage within the resources provided by the appropriation (FLDOE, 1996). This adjustment was included in the 1996-97, 1997-98, 1998-99 and 1999-2000 FEFP.

Dropout Prevention Incentive

The 1997-98 and 1998-99 FEFP included a performance based incentive entitled the Dropout Prevention Incentive. The grades 9-12 educational alternative program was funded at the basic 9-12 program weight and supplemented by an incentive allocation. The statewide amount of the incentive is the difference between grades 9-12 basic weight and the dropout prevention weight multiplied by the grades 9-12 educational alternatives, FTE, and the base student allocation. Each district's share was determined by the performance of students in the educational alternatives program (FLDOE, 1997).

Supplemental Academic Instruction

The Supplemental Academic Instruction component provides funding to be used to help students gain at least a year of knowledge for each year in school. Supplemental academic strategies may include; but are not limited to; modified curriculum, reading instruction, after-school instruction, tutoring, mentoring, class size reduction, extended school year, intensive skills development in summer school, and other methods of improving student achievement. The 1999 legislature originally created Supplemental Academic Instruction as a categorical fund for 1999-2000 (FLDOE, 1999); however for 2000-01 and subsequent years, it is a component of the FEFP (FLDOE, 2000). The adjustment for Supplemental Academic Instruction continues through the current FEFP.

ESE Guaranteed Allocation

Exceptional education services for students whose level of service is less than Support Levels 4 and 5 are funded through the ESE Guaranteed Allocation. The ESE Guranteed Allocation replaces weighted program cost factors that were included in previous FEFPs. The students generate FTE funding using the appropriate Basic Program weight for their grade level. The allocation provides for the additional services needed. The ESE Guaranteed Allocation was first implemented in 2000-01 and continues to the current FEFP (FLDOE, 2008).

Minimum Guarantee Adjustment

The Minimum Guarantee Adjustment guarantees each district a 1% increase in potential funding on an unweighted FTE K-12 student basis. The calculation includes state FEFP programs, major categorical funds, discretionary lottery funds, required local

effort proceeds, discretionary tax equalization funds, and potential discretionary proceeds. The adjustment was included in its current format in the 2001-02 FEFP. It has been included in various formats since the FEFP was introduced (FLDOE, 2001). The Minimum Guarantee Adjustment continued through the current 2007-08 FEFP. It was not included in the 2008-09 FEFP.

Lab School Discretionary Contribution

Developmental Research School (lab schools) and the Florida Virtual School are established as separate school districts for purposes of FEFP funding. In 2003-04, the FEFP allocated funds for the lab school in lieu of discretionary local tax revenue, which is already allocated and used by the district in which the lab school is located. The Florida Virtual School discretionary contribution is calculated by multiplying the maximum allowable nonvoted discretionary millage for operations by the value of 95 percent of the current year's taxable value for school purposes for the state; divide the result by the total full-time equivalent membership of the state; and multiply the result by the full-time equivalent membership of the school (FLDOE, 2003). The Lab School Discretionary Contribution was continued through the 2006-07 FEFP. The 2007-08 and 2008-09 FEFPs allocated funds under a renamed Discretionary Contribution to the lab schools.

Summer Reading Allocation

Twenty-five million dollars of non-recurring lottery funds were allocated by the 2003-04 Florida Education Finance Program to support and assist students who have not yet mastered the necessary skill for promotion or graduation. This Summer Reading

Allocation is to be used by third and twelfth grade students and for students needing supplemental instruction during the 2003-04 school year to reduce the need for summer remedial programs. These funds were in addition to the annual recurring funds appropriated for Supplemental Academic Instruction and were allocated to all school districts based on FTE student enrollment (FLDOE, 2003). An additional $25,000,000 was allocated for Summer Reading in the 2004-05 school year (FLDOE, 2004).

Reading Program Allocation

The 2005-06 FEFP allocated funds in the amount of $89,000,000 for the Reading Program. Each district was allocated $50,000 with the remaining amount distributed based on each district's portion of the total state K-12 base funding. Participation required districts to submit a plan prescribed by the Just Read Florida! Office. The 2006-07, 2007-08, and 2008-09 FEFPs allocated funds using the same parameters.

0.51 (0.498) Mills Discretionary Compression

For the 2005-06 FEFP, the 0.51 Mills Discretionary Compression adjustment was available to districts. If a school board's 0.51 mill discretionary levy provides less than $200 per unweighted FTE, the school district shall receive from the state an amount, when added to the funds generated by the 0.51 mill that equals $200 (FLDOE, 2005). The Discretionary Compression was included in the 2006-07 and 2007-08 FEFP allocations. In 2008-09, the discretionary millage was reduced to 0.498 and the supplement was renamed. Eligibility for the supplement was based on the state average yield of the 0.498 assessment.

Special Teachers are Rewarded (STAR) Plan Allocation

The 2006-07 FEFP allocated funds for the Special Teachers are Rewarded (STAR) Plan Allocation. The allocation of $147,500,000 was allocated for performance pay rewards for instructional personnel based on improved student achievement. Participating school districts must submit STAR plans to the state for approval. Plans must include automatic eligibility for all instructional personnel and rewards of at least five percent of the base pay of the top twenty-five percent of instructional personnel (FLDOE, 2006).

Merit Award Program (MAP) Allocation

The 2007-08 FEFP allocated $147,500,000 to districts for performance pay to instructional and school-based administrative staff (FLDOE, 2007). This allocation was in place of the 2006-07 FEFP's Special Teachers are Rewarded (STAR) Plan Allocation. The allocation was reduced to $32,072,461 in the 2008-09 FEFP (FLDOE, 2008).

DJJ Supplement

A supplement to school districts offering Department of Juvenile Justice education programs was included in the 2007-08 FEFP. This supplement was continued in the 2008-09 FEFP.

Additional Allocations Outside of the Base FEFP Calculation

For a four-year period beginning in 1989-90, the FEFP included a series of supplements. The supplements, four total, were add-ons to the FEFP after the calculation of State FEFP Dollars and any adjustments (FLDOE, 1989). No additional allocations outside of the base FEFP calculation were found after the 1991-92 FEFP (FLDOE, 1992).

Extended Day / Seventh Period

Amounts were appropriated in 1988-89 and again in 1989-90 for an extended day and seventh period. Districts could implement seven periods of 50 minutes or more or six periods of 60 minutes or more for full-time students in grades 9-12 during the 180 day school year and would be eligible for this enhancement. Under either option, the school day must be contiguous, excluding dual enrollment periods (FLDOE, 1988).

Adequacy Supplement

To guarantee an 8 percent weighted FTE increase in funding, the 1989-90 FEFP included an Adequacy Supplement. The increase was based on total state and local FEFP, discretionary local funds, and the major formula based categoricals. This was included in the FEFP in this format in 1989-90 only (FLDOE, 1989).

Caps Adjustment Supplement

The 1989 Legislature provided a Caps Adjustment Supplement to use up to 10 percent of any remaining funds in the FEFP appropriation after all components have been calculated and allocated. Any available funds were to be used to fund weighted FTE over group ceiling. This supplement was included in the FEFP for only one year, 1989-90 (FLDOE, 1989).

Additional State Allocation

Through a supplemental appropriation, the 1991 Legislature added ninety million dollars to the Florida Education Finance Program. This was a prorated amount districts received based on the product of weighted funded FTE students multiplied by the District Cost Differentials (FLDOE, 1991).

The Inclusion of Lottery Dollars

With the passing of an amendment to the state constitution in 1986, the state of Florida began to operate a statewide lottery with proceeds to benefit education in the state. From 1986 through the 1991, lottery dollars were appropriated for the benefit of public school districts. During this time, lottery funds were not specifically identified in the Florida Education Finance Program. The lottery was used to fund categorical programs and special allocations but the source of the funds were not specifically attributed to the lottery. The 1991-92 Florida Education Finance Program included a specific reference to lottery dollars for the first time. Proceeds from the Florida Lottery were used to finance four appropriations: District Discretionary Lottery Funds, Pre-School Projects, High Performance Incentives, and Instructional Technology (FLDOE, 1991).

The FEFP, beginning in 1991-92, distributed the District Discretionary Lottery Funds as an enhancement included after the calculation of the Net State FEFP Allocation. An amount of $495,369,799 was appropriated in 1991-92 from the Educational Enhancement Trust Fund (Lottery) to be expended in accordance with school district adopted policies and procedures that define enhancement and the types of expenditures consistent with that definition (FLDOE, 1991). Districts were required to provide the Department of Education with a copy of the policies and procedures and to submit an annual report showing all actual expenditure of enhancement funds. Special language was included to insure that districts complied with state regulations pertaining to school improvement plans. In 1991-92, school districts were required to allocate a minimum of

$4 per student to the school level for implementation of the school improvement process (FLDOE, 1991).

The 2008-09 appropriation for the District Discretionary Lottery Funds is $217,406,176. This allocation included School Recoginition Funds. Language was also present regarding school improvement plans. The 2008-09 appropriation called for a minimum of $5 per student to the school level for implementation of the school improvement process (FLDOE, 2008).

In the eighteen year period between the first inclusion of lottery dollars, 1991-92, and the 2008-09 Florida Education Finance Program, the distribution of lottery dollars has undergone significant changes. The period included the 1997 Classrooms First Initiative that was funded with an annual appropriation of $180,000,000 from the Educational Enhancement Trust Fund (Lottery) as well as the voter mandated class size reduction which had its own implications for school finance and lottery fund distribution (FLDOE, 1997).

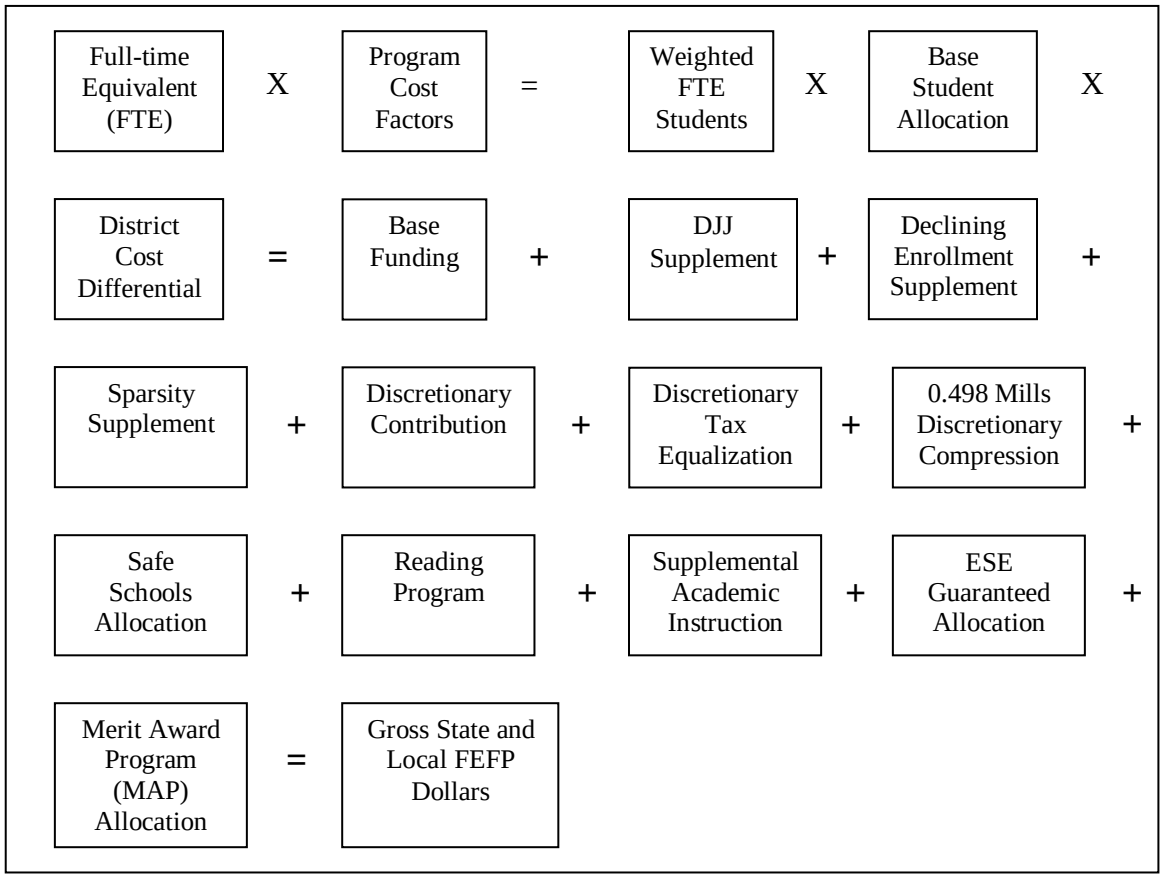
The FEFP Funding Formula in 2008

The Florida Educational Finance Program enacted by the Florida Legislature in 1973 forms the basis for the current version of Florida's system for funding education in the state.

A total of $9,007,286,039 was appropriated for distribution in the Florida Education Finance Program for the 2008-09 fiscal year compared to $1,694,023,329 for the 1981-82 fiscal year (FLDOE, 2008).

A graphical illustration, Figure 4, depicting how the 2008-09 FEFP calculates Gross State and Local FEFP dollars is included below. A discussion of each component follows.

Figure 4: Calculation of FEFP in 2008-09



Full-time Equivalent (FTE)

An FTE for FEFP funding purposes is one student in membership in one or more FEFP programs for a school year or its equivalent. The time equivalent for a school year varies with the school and student. In a standard school, students in grades 4 through 12 must be engaged in 900 hours of instruction per year, kindergarten through 3rd grade

students must me engaged in 720 hours of instruction annually. Students in schools on double session or a school utilizing a special calendar approved by the State Department of Education have their hours reduced to 810 and 630 respectively. Special rules for determining FTE exist for students enrolled with the Florida Virtual School and schools associated with the Department of Juvenile Justice (FLDOE, 2008).

Program Cost Factors

Program Cost Factors serve to assure that each program receives its equitable share of funds in relation to its relative cost per student. Through the annual program cost report, districts have reported the expenditures for each FEFP program. The cost per FTE student of each FEFP program has been used to produce an index of relative costs with the cost per FTE of Basic, Grade 4-8, established as the 1.000 base.

The Program Cost Factors for the 2008-09 fiscal year are listed in Table 6.

Table 6: 2008-09 Program Cost Factors (FLDOE, 2006)

• Basic Program	
○ Kindergarten and Grades 1, 2, and 3	1.066
○ Grades 4, 5, 6, 7, 8, and 9	1.000
○ Grades 10, 11, and 12	1.052
• Exceptional Student Programs	
○ Kindergarten and Grades 1, 2, and 3 w/ ESE Services	1.066
○ Grades 4, 5, 6, and 8 w/ ESE Services	1.000
○ Grades 9, 10, 11, and 12 w/ ESE Services	1.052
○ Support Level 4	3.570
○ Support Level 5	4.970
• English for Speakers of Other Languages	1.119
• Programs for grades 9-12 Vocational Education	1.077

To provide for the planned use of FEFP funds, the Legislature has established the following combination of programs during the 180-day regular school year and summer school.

Group	Program Group Title
1	Basic Education Programs
2	Exceptional Education for Support Levels 4 and 5
	English for Speakers of Other Languages
	Grades 9-12 Vocational Education Programs

The Florida Virtual School and schools associated with the Department of Juvenile Justice are the only schools that are eligible for summer school FTE reporting.

Program Group 2 has an enrollment ceiling (cap) which is established based on each district's estimates (with modifications) of FTE in each FEFP program. District estimates are reviewed and approved by a state enrollment estimating conference.

Additional Weighted FTE

The 2008-09 FEFP authorized five additional FTE supplements. These FTE supplements are included in a districts' weighted FTE and are subject to the other provisions of the FEFP. The four additional FTE supplements are:

- Small District ESE Supplement
- Florida Virtual School
- Small, Isolated High School Supplement
- Bonus FTE Programs

Base Student Allocation

The based student allocation is determined annually by the legislature. For the 2008-09 fiscal year, the base student allocation is $3,971.74 (FLDOE, 2008). The base student allocation was $1,238.99 in the 1981-82 FEFP (FLDOE, 1981).

District Cost Differential

Just as the FEFP recognizes the varying cost of educating students in different educational programs, it also recognized the varying cost educating students in different economies across the state. To that end, the FEFP continues to include a District Cost Differential (DCD). The DCD is based upon an average of the previous three years of the Florida Price Level Index as determined by the Department of Administration. The three year average is multiplied by 0.800 and 0.200 is added to the product to determine the DCD. This additional calculation is intended to limit the DCD adjustment to just the portion of a districts' operations that constitute salaries (80%). The District Cost Differentials for the 2008-09 fiscal year are presented in Table 7, for comparative purposes the DCD for each district in 1981-82 is shown in parenthesis (FLDOE, 2008):

Adjustments

The 2008-09 Florida Education Finance Program included eleven adjustments, guarantees, supplements, and incentives. They are (FLDOE, 2008):

Department of Juvenile Justice (DJJ)
Declining Enrollment Supplement
Sparsity Supplement
Discretionary Contribution
Discretionary Tax Equalization
0.498 Mills Discretionary Compression
Safe Schools Allocation
Reading Allocation
Supplemental Academic Instruction
ESE Guaranteed Allocation
Merit Award Program

Table 7: 2008-09 District Cost Differentials

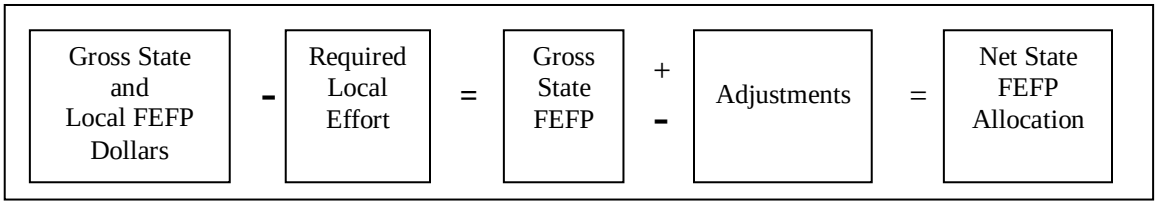
Alachua 0.9813 (0.9817)	Hamilton..... 0.9318 (0.9655)	Okeechobee..... 0.9701 (0.9783)
Baker..... 0.9793 (0.9590)	Hardee..... 0.9672 (0.9674)	Orange 1.0090 (0.9827)
Bay..... 0.9424 (0.9572)	Hendry..... 1.0012 (0.9770)	Osceola 0.9903 (0.9727)
Bradford..... 0.9747 (0.9562)	Hernando..... 0.9784 (0.9681)	Palm Beach 1.0364 (1.0203)
Brevard 0.9843 (0.9885)	Highlands 0.9578 (0.9687)	Pasco..... 0.9939 (0.9684)
Broward 1.0279 (1.0213)	Hillsborough..... 1.0158 (0.9894)	Pinellas 1.0053 (0.9974)
Calhoun..... 0.9172 (0.9566)	Holmes 0.9043 (0.9540)	Polk 0.9804 (0.9750)
Charlotte..... 0.9689 (0.9842)	Indian River..... 0.9834 (0.9929)	Putnam..... 0.9654 (0.9511)
Citrus 0.9538 (0.9694)	Jackson..... 0.9144 (0.9636)	St. Johns..... 0.9873 (0.9786)
Clay 0.9957 (0.9815)	Jefferson..... 0.9413 (0.9708)	St. Lucie..... 0.9879 (0.9862)
Collier..... 1.0530 (1.0168)	Lafayette..... 0.9270 (0.9678)	Santa Rosa 0.9349 (0.9538)
Columbia..... 0.9505 (0.9634)	Lake 0.9810 (0.9745)	Sarasota..... 1.0007 (1.0041)
Dade..... 1.0145 (1.0442)	Lee 1.0132 (1.0048)	Seminole..... 0.9986 (0.9872)
De Soto 0.9779 (0.9703)	Leon 0.9635 (0.9669)	Sumter 0.9637 (0.9679)
Dixie 0.9385 (0.9642)	Levy 0.9543 (0.9608)	Suwannee..... 0.9313 (0.9608)
Duval 1.0146 (0.9805)	Liberty..... 0.9236 (0.9752)	Taylor 0.9191 (0.9594)
Escambia..... 0.9376 (0.9640)	Madison..... 0.9162 (0.9543)	Union..... 0.9661 (0.9656)
Flagler..... 0.9551 (0.9873)	Manatee..... 0.9971 (0.9890)	Volusia..... 0.9584 (0.9911)
Franklin..... 0.9105 (0.9818)	Marion..... 0.9569 (0.9750)	Wakulla..... 0.9438 (0.9842)
Gadsden 0.9434 (0.9603)	Martin..... 0.9930 (1.0157)	Walton 0.9307 (0.9670)
Gilchrist 0.9555 (0.9716)	Monroe..... 1.0149 (1.0721)	Washington 0.9134 (0.9576)
Glades..... 0.9874 (0.9909)	Nassau..... 0.9925 (0.9641)	
Gulf..... 0.9152 (0.9618)	Okaloosa..... 0.9542 (0.9758)	

Each of the adjustments, guarantees, supplements, and incentives included in the 2008-09 FEFP was defined and discussed in the previous section dedicated to their inclusion and exclusion over the years.

State & Local FEFP Dollars

The state and local FEFP dollars is the total amount allocated for the current operations of each school district. It is subject to a reduction for local effort and various adjustments as illustrated in Figure 5.

Figure 5: Calculation of Net State FEFP Allocation in 2008



Required Local Effort

The district required local effort is subtracted from the basic amount for current operation. The required local effort is set by the legislature. For the 2008-09 fiscal year, the legislature set the required local effort at $8,267,476,267 (FLDOE, 2008). The Commissioner of Education, based on the amount set by the legislature, then sets the state-wide property millage levy necessary. For the 2008-09 fiscal year, the average millage rate was 5.136 mills (FLDOE, 2008).

The average millage rate is subject to adjustment if any district's required local effort exceeds 90% of the districts total FEFP entitlement. In 2008-09, there were twelve districts which benefited an adjustment of their required local effort based on this provision (FLDOE, 2008).

State FEFP Dollars

The state portion of the FEFP or state FEFP dollars is the result of subtracting the required local effort from the state and local FEFP dollars.

Adjustments

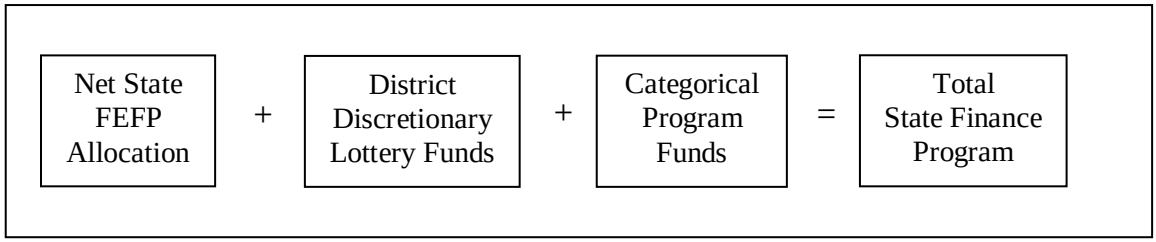
A provision is also added to authorize the Department of Education to make prior-year adjustments in the allocation of funds to a district for arithmetical errors, assessment

roll changes, full-time equivalent student membership errors, or allocation errors revealed in an audit report.

Net State FEFP Allocation

By removing the adjustments from the state FEFP dollars, one can arrive at the net state FEFP allocation as demonstrated in Figure 6.

Figure 6: Calculation of Total State Finance Program in 2008-09



District Discretionary Lottery Funds

An amount of $217,406,176 was appropriated from the Educational Enhancement Trust Fund (Lottery) for School Recognition Funds and District Discretionary Lottery Funds to be expended according to school district policies and procedures that define enhancement and the types of expenditures consistent with that definition. District Discretionary Lottery entitlements are calculated by prorating each district's FEFP base funding entitlement to the amount of the lottery appropriation. Local school boards must allocate at least $5 per unweighted FTE student to be used at the discretion of the School Advisory Committee, or in the absence of such a committee, at the discretion of the staff and parents of the school (FLDOE, 2008).

Categorical Program Funds

Categorical program funds are added to the FEFP allocation which is distributed to districts. The 2008-09 FEFP included four such programs with allocations totaling $3,576,466,185. They are listed below (FLDOE, 2008):

- Class Size Reduction Allocation 2,809,079,054
- Instructional Materials Formula Funds 259,551,440
- Student Transportation 471,078,862
- Florida Teachers Lead 36,756,829

Special Allocations

The 2008-09 FEFP did not contain any special allocations.

Total State Allocation

The total state allocation is the result of adding the categorical program funds and the district discretionary lottery funds to the net state FEFP allocation. The total state allocation represents the total state financial contribution to the operation of local school districts.

Legal Challenges

Since the *Serrano v. Priest* decision in 1971, the vast majority of states have faced challenges to their school finance systems. In 1973 the United States Supreme Court ruled five to four in *San Antonio School District* v. *Rodriguez* that the Texas school finance system did not violate the fourteenth amendment of the federal constitution guaranteeing equal protection. The Court held that education was not a fundamental right guaranteed by the federal constitution and that the Texas system satisfied the legitimate state purpose of local autonomy. The *Rodriguez* case did not stop efforts by plaintiffs at

the state level who were able to cite education clauses in state constitutions (Berne, Moser, & Stiefel, 1999). Despite differences in the legal strategies employed in these cases, most have centered on the inter-district equity of funding within states (Rubenstein, Doering, & Gess, 2000). Because of the high degree of inter-district equity built into its school finance formula, the state of Florida has been spared much of the judicial and legislative turbulence that has marked public school financing in many states (Herrington & Weider, 2001).

Florida's system of funding public education has withstood attacks based on the equity of the system. Although some equity issues continue to be raised, current challenges focus on whether Florida is spending enough on education to enable the system to provide a high quality education to all of the students (Herrington & Weider, 2001).

Challenges to Florida's system of financing public education can be classified into two distinct categories: equity challenges and adequacy challenges. A discussion of the legal history of Florida's financing of public education would be incomplete without also including an overview of the 1998 amendment to the state constitution.

Equity Challenges

Equity challenges have centered on whether some students or districts receive more funds for their education than other students or districts in the state (Herrington & Weider, 2001). The first challenge to Florida FEFP was in 1979. In 1979, the school board of Escambia County, a property-poor district, challenged the discretionary millage

provision of the FEFP. In *Gindl v. The Department of Education*, the board argued that the provision allowing districts to levy discretionary millage resulted in funding disparities between districts with significant property wealth and those considered property poor. The argument was based on the equal protection clause of the state constitution. The Florida Supreme Court ruled in favor of the state. The ruling stated that some variance in funding was acceptable as long as it was not "substantial" (Herrington & Weider, 2001).

The FEFP was again challenged under equity arguments in 1993. *Department of Education v. Glasser*, brought by the Sarasota School Board, challenging the discretionary millage provision from the perspective of a property rich district. The argument was based on an article of the Florida Constitution that authorized a maximum of 10 mills for the support of schools. The Florida Supreme Court again ruled in favor of the state. The ruling stated that the article cited only set a maximum, and that the state was in its rights to limit the levy (Herrington & Weider, 2001).

In both equity cases discussed, the courts refused to tightly constrain the state under the constitution's education clause. Florida's education clause calls for a "uniform" system of education.

Adequacy Challenges

Adequacy challenges focus on whether the amount of money available for public education is sufficient to meet the academic standards set forth from the state (Thompson & Crampton, 2002). Two lawsuits have challenged the FEFP, but neither was successful, leaving the system largely unchanged almost three decades after its adoption. Following

other state courts, the Florida Supreme Court asserted in its decisions that the vagueness of state constitutional requirements and the importance of legislative discretion prevented justices from intervening (Harris, 2005).

Funding advocates lost a third case before the Florida Supreme Court in 1996, *Coalition for Adequacy and Fairness in School Funding, Inc. v. Chiles*. The coalition suit was filed before the Florida Constitution was amended by voters in 1998. An overview of that amendment is included in the subsequent section. The second suit, *Faith L Honore v. Florida State Board of Education*, was filed after the constitution was amended.

In 1995, the *Coalition for Adequacy and Fairness in School Funding, Inc. v. Chiles* challenged Florida's system of funding education on the basis of adequacy. The Coalition for Adequacy and Fairness filing challenged the amount of funding available for public education. This argument was based on the state's education clause. In denying the claim, the Florida Supreme court stated that the education clause did not provide sufficient guidance to them on what an adequate education might be (Herrington & Weider, 2001). This led to the constitution's amendment.

In 1999, after the adoption of the substantially stronger education clause in the Florida Constitution, a new adequacy case was filed. *Faith L Honore v. Florida State Board of Education* was filed after the adoption of the amendment but before it legally took effect. It was rejected under similar arguments as *Coalition for Adequacy and Fairness in School Funding, Inc. v. Chiles.* In its ruling, however, the Florida Supreme court refused to close the door to future adequacy claims (Herrington & Weider, 2001).

Constitutional Amendment

In 1998 the citizens of Florida considerably strengthened the education article in the state's constitution. It has resulted in what many consider to be the strongest education language to be found in any state constitution (Herrington & Weider, 2001). Article IX – Education Section of the Florida Constitution reads (italicized language was added by the 1998 amendment):

> 1. Public education – *The education of children is a fundamental value of the people of the State of Florida. It is, therefore, a paramount duty of the state to make adequate provision for the education of all children residing within its borders.* Adequate provision shall be made by law for a uniform, *efficient, safe, secure, and high quality* system of free public schools *that allows students to obtain a high quality education* and for the establishment, maintenance, and operation of institutions of higher learning and other public education programs that the needs of the people may require.

Conclusion

Florida's system for funding public education has been subject to changes each year in the 27-year period from 1981-82 through 2008-09. Yet, with all the change that has taken place, the fundamental principles that the Florida Education Finance Program was based upon has not changed. Those principles include a variable for educational setting, the program cost factor, and a variable for economic and geographical considerations, the district cost differential, and have been consistent in their purpose.

In 1981-82, the Legislature appropriated $1,694,023,329 for public education in the State of Florida (FLDOE, 1981). By 2006-07, the appropriation had more than quintupled to $9,007,286,039 (FLDOE, 2008). In that same period, the source of funding for school districts has slowly shifted from the state to local counties. In 1981-82, state

funding accounted for 56.4% of district allocations and local funds accounted for 32.3% (FLDOE, 1981). By 2008, the state was only contributing 40.63% of funds compared to 50.47% locally (FLDOE, 2008).

During this same period, the FEFP has withstood legal challenges on the basis of both equity and adequacy. The 1998 constitutional amendment has opened the door to future litigation using adequacy arguments. Its language is specific and could call into question the amount of money allocated to public education in the State of Florida. There is nothing in the constitutional amendment that suggests that the equity, or means of distribution of funding, may be in some legal peril.

CHAPTER 3

METHODS AND PREVIOUS FINDINGS

The methods and procedures in the statistical analysis and the historical review of the Florida Education Finance Program is the focus of this chapter. Included is a discussion of the statistical tools employed, as well as the findings from the previous study in 1982. Much of the language and definitions presented in this chapter come directly from Dr. Shiver's work (1982). This is by design. This section also details the current statistical tools available to evaluate the equitability of a state's school finance distribution mechanisms. Ultimately, Dr. Shiver's statistical method is replicated on data through the 2008-09 school year and those findings are presented along side an analysis using the current statistical tools discussed in this chapter. The chapter concludes with a brief discussion of similar linear studies found in the literature. These studies come from six different states all with the common goal of determining the equity of each state's distribution of available funding for education.

This chapter is divided into four distinct subsections. Those subsections are entitled Method for Conducting the Historical Review, Measures of Distributional Equity, Relationships Between Revenue Measures and Selected Independent Variables, and Equity Studies in the Literature. A discussion of the findings from 1982 as well the statistical tools employed is included in each section. Application of the statistical tools to the period from 1982-2009 is the basis of this study.

Method for Conducting the Historical Review

The first phase of this study seeks to conduct a historical review of the changes in the Florida Education Finance Program. The historical review was conducted to document the changes to the State of Florida's funding system for education. This review is for the fiscal years from 1982-83 through 2008-09. To complete the review, copies of the Florida Department of Education's annual statistical report, Funding for Florida School Districts, was obtained for the 27-year period beginning in 1982-83 and ending with the 2008-09 publication. The statistical reports were used to document the Florida Education Finance Program funding formula in 1982-83, changes to the formula during the period from 1982-83 through 2008-09, and the structure of the funding formula in 2008-09.

The historical review has been completed and is included as Chapter 2 of this study. The historical review forms one of the compelling arguments for enacting the statistical components of this proposal.

Measures of Distributional Equality

The second phase of this study aims to investigate the effect of the FEFP on the degree of distributional equity achieved by the state's school finance plan. The State of Florida's Florida Education Finance Program is analyzed at three different levels of revenue aggregation: total state revenue per pupil, total local revenue per pupil, and total state and local revenue per pupil. At each of these levels, the variables of interest are subjected to three separate, distinct cost adjustments. The end result is a total of twelve revenue figures to which our measures of variability are applied. This is a major

departure from the Shiver study. The Shiver study did not allow for different cost-of-living adjustments for the 67 school districts. Ultimately, this is a major source of criticism of the original study.

Adjustment of Revenue Measures

The proposed study takes a major departure from the original study when it comes to the adjustment of revenue measures. The original Shiver study does not use an adjustment to any of its revenue measures; in fact, it calls into question the Florida Education Finance Program's cost adjustment component, the District Cost Differential. This study calls for the use of three separate, distinct cost adjustments of the revenue measures.

Inclusion of cost adjustments indicates that a portion of the apparent revenue advantage may simply compensate for the higher costs these districts face and may not provide substantially more educational "buying power" (Rubenstein, Doering, & Gess, 2000). The consideration of the cost variations in educational services is a fundamental part of analyzing the equity of the system (Cohen-Vogel, & Cohen-Vogel, 2001). Common sense suggests that some school districts must pay more to hire good teachers than other school districts (Taylor, Alexander, Gronberg, Jansen, & Keller, 2002). Due to local economic factors, costs are higher in some districts than others largely because more resources are required to educate some students compared to others and because some districts will have to pay more money than other districts to attract high-quality teachers (Reschovsky & Imazeki, 2001).

Most states, including Florida, have cities where the cost of living differs widely from the state average (Kramer, 2002). The basic premise underlying the cost of living approach is that areas with a high cost of living will have to pay higher salaries to attract school employees, thus increasing the cost of education. The cost of living becomes a proxy for the cost of education that cannot be directly influenced by school policy (Taylor et al., 2002).

The three cost adjustments this study implements are the District Cost Differential, the Geographic Cost of Education Index, and the Comparable Wage Index.

The District Cost Differential

The District Cost Differential (DCD) is the Florida Education Finance Program's cost adjustment component. The DCD has been fundamental to the FEFP since its enactment. This study proposes to use the DCD as an adjustment to the revenue measures. Each of the three revenue measures – total local revenue per pupil, total state revenue per pupil, and total state and local revenue per pupil – for each district is divided by the DCD. Since the DCD is used in the formula to determine funding to the districts, dividing available funding by the DCD will greatly reduce its impact. The DCD in effect cancels itself out in the calculation.

The Geographic Cost of Education Index

The Geographic Cost of Education Index (GCEI) was developed by Jay Chambers in 1998 with the assistance of the U.S. Department of Education, Office of Educational Research and Development. The GCEI was developed to focus directly on school inputs and attempts to adjust for qualitative differences in those inputs employed

across geographical locations. The index controls for variations in a wide range of personnel and job characteristics that affect the supply of, and demand for, school personnel. It reflects differences across geographic locations in factors that underlie cost of living differences and differences in the characteristics of regions that affect their desirability as places to live and work (Chambers, 1998).

The Geographic Cost of Education Index was calculated for every school district in the country for the 1987-88, 1990-91, and 1993-94 school years. The correlation between each pair of GCEI's across the 3-year intervals is .98; the correlation between GCEI's across the full 6-year interval is .96. This suggests that the patterns of geographic variations in costs do not change substantially over time and the GCEI estimated for any given year provides a reasonable estimate of the GCEI for adjacent and future years (Chambers, 1998). Dr. Chambers's research shows that the GCEI does not need to be updated every year.

For the purposes of this study, Chambers GCEI from 1987-88 was used to adjust the 1988-89 revenue measures. The GCEI calculated for the 1990-91 school year was used to adjust the 1990-91 and 1992-93 revenue measures. Finally, the GCEI calculated for the 1993-94 school year – the last year it is available - was used to adjust the 1994-95, 1996-97, 1998-99, 2000-01, 2002-03, 2004-05, 2006-07, and 2008-09 revenue measures.

The Comparable Wage Index

In May of 2006, Lori Taylor in conjunction with the National Center for Educational Statistics released the Comparable Wage Index (CWI). The basic premise of the CWI is that all types of workers – including teachers – demand higher wages in areas

with a higher cost of living or lack of amenities. The CWI reflects the systematic, regional variations in the salaries of college graduates who are not educators. Provided that these noneducators are similar to educators in terms of age, educational background, and tastes for local amenities, a CWI can be used to measure the uncontrollable component of variations in the wages paid to educators (Taylor, 2006).

The CWI offers a complete picture of labor costs because it reflects not only differences in the price of goods and services, but also any influence on wages due to differences in important community characteristics such as climate, crime rates, or cultural amenities (Taylor, 2006).

Evidence suggests that demographic profiles are remarkably stable over time, so any bias in the growth rates induced by demographic shifts should be modest. Among metropolitan areas, there is a 0.968 correlation between 2002 and 2004. This allows for the use of a prior year's CWI in future years.

The Comparable Wage Index (CWI) was first calculated in 1997 and is available from 1997 through 2003. For the purposes of this study, the CWI for 1998 was used to adjust the 1998-99 revenue measures; the 2000 CWI was used to adjust the 2000-01 revenue measures, and the 2002 CWI was used to adjust the 2002-03, 2004-05, 2006-07, and 2008-09 revenue measures.

Selected Years for Study

To facilitate assessment of changes in the distribution of the selected per pupil revenue measures across the state's school districts, six school years were selected by the original study for analysis over an 11-year time span, 1970-71 and 1972-73, prior to the

FEFP's enactment, and every other subsequent year, 1974-75, 1976-77, 1978-79, and 1980-81. Using the same selection method, 14 years have been selected for analysis by this study -- 1982-83, 1984-85, 1986-87, 1988-89, 1990-91, 1992-93, 1994-95, 1996-97, 1998-99, 2000-01, 2002-03, 2004-05, 2006-07, and 2008-09. The years cover a 27-year time span from the end of the original study in 1982 through 2009.

Equity Measures

Seven measures of central tendency and variation were selected by the previous study and are utilized in this study. Three additional measures of dispersion or variability that are prevalent in the current literature were employed, bringing to ten the number of measures employed by this study. Nine of the equity measures are discussed here. Discussion and analysis using the Gini coefficient is divided into a separate subsections.

Percentile Ranks. A percentile rank is a value on a transformed scale which corresponds to the percentile point. For example, if $2500 per pupil is an amount at or below which 75 percent of the school districts fall, the 75 is the corresponding percentile rank. The districts were ranked according to the per pupil revenue amount from highest to lowest. Values are listed for the 100^{th} (highest), 95^{th}, 75^{th}, 50^{th} (median), 25^{th}, 5^{th}, and 1^{st} (lowest) percentile rank. A commonly used measure of central tendency, the median is the point of a scale of distribution such that half the observations fall above it and half below it.

Range. The simplest measure of variation is the range that is the difference between the lowest and highest measurements in a distribution. Although the range is not very stable because it is based on only two measurements or values and does not provide

any information about the variability of those per pupil amounts lying between the largest and smallest revenue measurements, it facilitates the comparison of changes in a particular aspect of distributional equality which may lead to the discovery of less obvious disparities lying elsewhere.

Restricted Range. A measure less sensitive to extreme values than the range, the restricted range is the difference between two selected values in a distribution, usually in terms of percentiles. For the purpose of this study, the restricted range is the difference between the 5^{th} and 95^{th} percentile of per pupil revenue.

Federal Range Ratio. The federal range ratio is the restricted range divided by the per-pupil revenue measure at the 5^{th} percentile. This measure is prevalent in the current literature. It was not in practice at the time of the original Shiver study. Data will only be made available for the fourteen selected years of the current analysis.

Mean. The mean is the sum of a set of measurements divided by the number of measurements in the set. Unlike the median, the mean is based on all the values in a distribution and the quantity of the measurements. Its measurement over time facilitates assessment of the growth in the average per pupil revenue amount received by school districts.

Standard Deviation. A better index of dispersion or variability than either of the range measures, the standard deviation is equal to the square root of the variance that is the mean of the squared deviation scores. The standard deviation is by far the most commonly used measure of variability and is based upon all the values in a distribution.

Coefficient of Variation. The coefficient of variation is the standard deviation divided by the mean of distribution and measures equality relative to the mean. The lower the coefficient of variation, the more equal the distribution.

McLoone Index. The McLoone index is the sum of the per-pupil revenue measure for students at or below the median divided by the sum of per-pupil revenue measure if all the students below the median received the median amount. This measure is prevalent in the current literature. This index quantifies the relationship between students below the mean in per-pupil revenues and the mean. It also shows how far these students fall below what equal per-pupil funding would generate. It was not in practice at the time of the original Shiver study. Data is only available for the fourteen years of the current analysis.

Verstegen Index. The Verstegen index is the sum of per-pupil revenue measure for students at or above the median divided by the sum of per-pupil revenue measure if all the students above the median received the median amount. This index quantifies the relationship between students above the mean in per-pupil revenues and the mean and shows how far these students rise above what equal per-pupil funding would generate. This measure is prevalent in the current literature. It was not in practice at the time of the original Shiver study. Data is only available for the fourteen years of the current analysis.

Data for the pre-FEFP years 1970-71 and 1972-73 was obtained by Dr. Shiver from *The Annual Report of the Commissioner of Education*. Data for the 1974-75, 1976-77, 1978-79, and 1980-81 school years were obtained from *Profiles of Florida School*

Districts. Data for the 1982-83, 1984-85, 1986-87, 1988-89, 1990-91, 1992-93, 1994-95, 1996-97, 1998-99, 2000-01, 2002-03, 2004-05, 2006-07, and 2008-09 years are extracted from the First Calculation from the year of interest made available from the Commissioner of Education. The First Calculation was selected as the data source for the current study so that analysis takes place using the same figures the legislature uses in its annual deliberations.

Total State Revenue Measures

Tables 8 and 9 show the framework for evaluating the distribution of total state revenue. Tables 8 and 9 are populated with data from the original study. Data from the original study did not use any means of cost adjustment and is listed as "unadjusted."

Findings from the Original Study

Table 8 shows that total state revenue per pupil has increased steadily across the percentile ranks except for the first and last two-year intervals at the 1st percentile and the period between 1976-77 and 1978-79 at the 25th percentile. From 1970-71 to 1980-81 the median increased 170 percent, the largest increase of any percentile rank for the same period. During the same period, the 100th percentile rank, representing the district which received the most state revenue per pupil each of the six years, increased 145 percent as compared to the 1st percentile rank, representing the district which received the least state revenue per pupil, which increased only 43 percent.

These findings from the original study show a growing disparity between the so called rich and poor districts. It is important to note that only unadjusted figures are available for this period. Is the funding between the rich and poor growing or is the cost

of doing business in these districts changing? The inclusion of cost adjusted revenues will provide data to more accurately judge this disparity.

Table 8: Percentile Distribution of Total State Revenue per Pupil, 1970-1980

Year	Revenue Type	100th	95th	75th	50th	25th	5th	1st
1970-71	Unadjusted	922.09	768.58	618.33	533.19	480.79	427.82	382.30
1972-73	Unadjusted	984.44	839.75	687.35	593.42	537.89	445.30	363.98
1974-75	Unadjusted	1397.91	1093.60	911.18	815.57	702.45	536.84	366.84
1976-77	Unadjusted	1577.74	1282.76	1058.85	922.20	829.12	557.84	409.34
1978-79	Unadjusted	1896.99	1716.93	1204.10	1022.78	819.79	604.88	548.47
1980-81	Unadjusted	2262.73	1727.10	1540.98	1442.46	1273.75	1032.69	544.55

In Table 9, the range of the distribution again increased steadily with the greatest percentage coming between 1972-73 and 1974-75, the years immediately prior and subsequent to the establishment of the FEFP. From 1970-71 to 1980-81 the range more than tripled in size while the restricted range only doubled. The substantial decrease in the size of the restricted range between 1978-79 and 1980-81 is reflected by the coefficient of variation and standard deviation recorded for 1980-81.

The mean total state revenue per pupil increased 151 percent between 1970-71 and 1980-81. For the same period, the standard deviation grew by almost 111 percent with a 19 percent decrease in the size between 1978-79 and 1980-81. Overall, disparities in the distribution of total state revenue appear to have increased for each year except 1980-81 when the coefficient of variation was the lowest of any year studied. With 1980-81 being the last year of the previous study, it is important that the variation was the lowest of any year studied. Was this a sign of things to come, or, simply an abnormality that dissipated in subsequent years? Only continued study can address this issue.

Table 9: Measures of the Variation in the Distribution of Total State Revenues per Pupil, 1970-1980

Year	Revenue Type	Range	Restricted Range	Mean	Standard Deviation	Coefficient of Variation
1970-71	Unadjusted	539.79	340.56	560.14	117.58	.210
1972-73	Unadjusted	620.46	394.45	621.47	128.66	.207
1974-75	Unadjusted	1031.06	556.76	813.95	176.65	.217
1976-77	Unadjusted	1168.40	724.92	931.22	215.39	.231
1978-79	Unadjusted	1348.52	1112.05	1054.66	293.66	.278
1980-81	Unadjusted	1718.17	694.41	1407.66	247.68	.176

Total Local Revenues

Tables 10 and 11 show the framework for evaluating the distribution of total local revenue. Tables 10 and 11 are populated with data from the original study. Data from the original study did not use any means of cost adjustment and is listed as "unadjusted." Beginning with the first year of the proposed study, 1982-83, the tables are formatted to allow for both "unadjusted" and "DCD Adjusted" total local revenue per pupil. The tables expand in 1988-89 and again in 1996-97 to reflect the inclusion of the "GCEI Adjusted" and "CWI Adjusted" respectively as these indices became available.

Findings from the Original Study

Table 10 presents the percentile distribution of total local revenue per pupil that combines the local discretionary effort with the required local effort per pupil. The percentile ranks show a steady increase during the 11-year period of the original study except for a nominal decrease at the 5th percentile rank between 1970-71 and 1972-73 and a 13 percent decline at the 1st percentile rank between 1974-75 and 1976-77. From 1970-71 to 1980-81 the median increased 175 percent.

Table 10: Percentile Distributions of Total Local Revenue per Pupil, 1970-1980

Year	Revenue Type	100th	95th	75th	50th	25th	5th	1st
1970-71	Unadjusted	679.91	486.48	316.92	221.00	150.54	107.02	80.84
1972-73	Unadjusted	272.24	530.76	347.68	246.16	167.89	106.37	99.16
1974-75	Unadjusted	1129.81	756.74	539.00	391.69	276.83	176.98	161.62
1976-77	Unadjusted	1246.43	1041.33	650.35	446.28	311.77	213.39	142.66
1978-79	Unadjusted	1390.76	1251.91	864.70	569.09	374.82	228.18	203.81
1980-81	Unadjusted	1971.77	1339.94	907.34	606.68	393.93	243.66	217.64

During the same period, the largest increase in total local revenue per pupil across all percentile ranks was between 1972-73, the year before the FEFP was enacted, and 1974-75, the year immediately after. The measures of variation presented in Table 11 along with the mean summarized the changes in the distribution of total local revenue per pupil over the 11-year period of study. Continued analysis will provide an additional 25-year period of current data.

Both the range and the restricted range nearly doubled in size with the largest percentile change in the range coming between the years immediately preceding and following the year the FEFP was implemented. The mean grew by 172 percent and, like the standard deviation, experienced the largest percentage increase during the same years as the range and restricted range. The relatively large increase in per pupil local revenues

Table 11: Measures of the Variation in the Distribution of Total Local Revenues per Pupil, 1970-1980

Year	Revenue Type	Range	Restricted Range	Standard Mean	Coefficient of Deviation	Variation
1970-71	Unadjusted	599.07	379.46	251.12	126.26	.503
1972-73	Unadjusted	628.08	424.39	278.63	138.85	.498
1974-75	Unadjusted	968.19	579.78	425.16	197.01	.463
1976-77	Unadjusted	1103.77	827.94	502.24	254.12	.506
1978-79	Unadjusted	1186.95	1023.73	635.00	308.38	.486
1980-81	Unadjusted	1754.13	1096.28	683.46	369.68	.541

between 1972-73 and 1974-75 may be attributable to a variation in the required local effort set by the legislature for the same period.

Although the coefficient of variation fluctuated, it was approximately 8.4 percent higher in 1980-81 than in the year before the FEFP. This observation coupled with the steady increase in the standard deviation between 1970-71 and 1980-81 reflected the growing disparity in the distribution of total local revenue per pupil. This disparity may or may not have continued in subsequent years. The trend may have stabilized or continued. The analysis of additional data, data that includes cost adjustments, and a wider time period will allow for conclusions to be drawn that are current and relevant to contemporary practice.

Total State and Local Revenue Measures

Tables 12 and 13 show the framework for evaluating the distribution of total state and local revenue. Tables 12 and 13 are populated with data from the original study. Data from the original study did not use any means of cost adjustment and is listed as "unadjusted."

Findings from the Original Study

Table 12 presents the percentile ranks for the distribution of total state and local revenue per pupil across the selected years of the previous study. With the exception of the first two-year interval at the 100^{th} percentile, total state and local revenue per pupil

Table 12: Percentile Distributions of Total State and Local Revenues per Pupil, 1970-1980

Year	Revenue Type	100th	95th	75th	50th	25th	5th	1st
1970-71	Unadjusted	1164.83	1003.20	862.71	793.95	734.54	663.94	610.77
1972-73	Unadjusted	1129.87	1114.64	964.13	887.40	829.56	758.57	673.46
1974-75	Unadjusted	1647.37	1463.89	1293.76	1236.22	1153.54	1101.13	986.71
1976-77	Unadjusted	1951.39	1770.89	1562.84	1393.38	1290.21	1158.28	1063.23
1978-79	Unadjusted	2210.67	2086.37	1782.46	1667.44	1549.98	1459.30	1346.13
1980-81	Unadjusted	2745.60	2587.57	2184.75	2061.07	1912.76	1793.31	1756.22

increased steadily across the percentile ranks since 1970-71. From 1970-71 to 1980-81 total state and local revenue per pupil at the 95th percentile increased 158 percent while the 5th percentile increased only a slightly higher 170 percent. The median fluctuated in the degree of percentage change in total state and local revenue per pupil with a minimum increase of 11.7 percent between 1970-71 and 1972-73 and a maximum of 39.3 percent between 1972-73 and 1974-75, the years immediately before and after the establishment of the FEFP.

The first percentile, representing the district which received the least total state and local revenue per pupil, showed the greatest increase from 1970-71 to 1980-81, i.e., 187 percent. The 100th percentile, representing the district that received the most total state and local revenue per pupil, increased the least of the percentile ranks, i.e., 136 percent. From 1970-71 to 1980-81 the median increased 160 percent.

While there appears to have been an equalization effect across the 95th and 5th percentile ranks between 1970-71 and 1980-81, the ranks represent roughly only 10 percent of the total number of districts, and a comparison of districts' wealth and their total state and local revenue receipts per pupil above and below the upper quartile (half the number of districts) indicates movement away from fiscal neutrality, a disequalizing

effect. A judgment cannot and should not take place on the equity of the distribution of total state and local revenue based on unadjusted revenue. The current study will provide more complete data over a longer period and therefore will provide a better foundation from which to draw conclusions.

Table 13 presents the range, restricted range, mean, standard deviation, and coefficient of variation for the distribution of total state and local revenue for the selected years of study. Total state and local revenues per pupil increased by about 185 percent between 1970-71 and 1980-81.

In 1972-73 and 1978-79 the range decreased in relation to its size two years earlier. For the 11-year period of study, the range grew by about 79 percent while the restricted range increased steadily by about 135 percent, the largest increase coming between 1974-75 and 1976-77. For the same period, the mean increased almost 158 percent.

Table 13: Measures of the Variation in the Distribution of Total State and Local Revenues per Pupil, 1970-1980

Year	Revenue Type	Range	Restricted Range	Mean	Standard Deviation	Coefficient of Variation
1970-71	Unadjusted	554.06	339.26	881.26	110.38	.136
1972-73	Unadjusted	456.41	356.07	900.10	103.01	.114
1974-75	Unadjusted	660.66	362.76	1239.10	117.24	.095
1976-77	Unadjusted	888.16	612.61	1433.46	193.28	.135
1978-79	Unadjusted	864.54	627.54	1689.66	187.65	.111
1980-81	Unadjusted	989.38	794.26	2091.12	233.40	.112

The standard deviation has doubled between 1970-71 and 1980-81 with decreases corresponding to reductions in the size of the range for 1972-73 and 1978-79. The smallest increase in the variability of the distribution of total state and local revenue per pupil between any of the selected years was between the year immediately prior to the FEFP's establishment, 1972-73, and the year immediately following, 1974-75.

Fluctuations in the coefficient of variation prohibit estimations of distributional equalizing or disequalizing effects; although it is worth noting that the coefficient of variation for the year immediately preceding the FEFP and the coefficient for the most recent year are virtually the same.

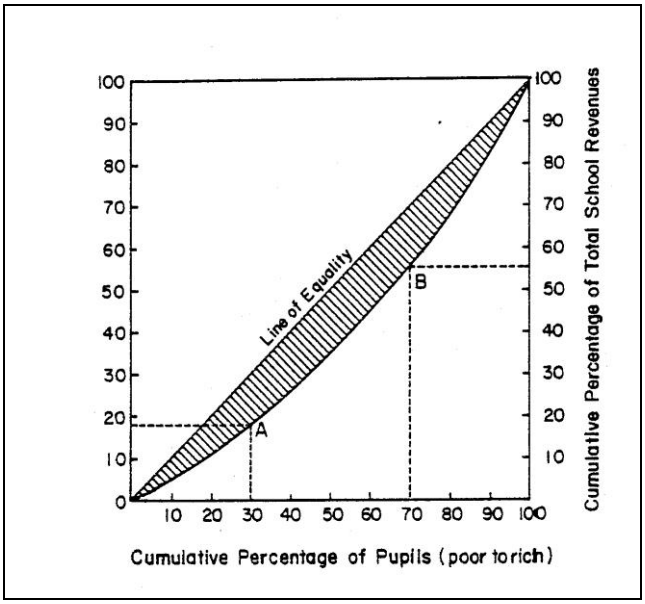
Assessing Distributional Patterns of Per Pupil Revenues Using Lorenz Curves and Gini Coefficients

The purpose of this sub-section is to examine the overall pattern of the distribution of revenues per pupil among Florida school districts using an analysis separate from the measures presented in the previous sub-section to assess changes in the degree of inequality associated with school revenue distribution between 1970-71 and 2008-09. Data from the initial study is presented here and includes the period from 1970-71 through 1980-81. The current study presents data from 1982-83 through 2008-09. The most widely used measure of equality, the Gini coefficient, which is based on the Lorenz curve, has often been used by economist and school finance researchers to study various distributional patterns. In this section, the equalizing or disequalizing effect of the three selected per pupil revenue measures – total state and local revenue, total state revenue, and total local revenue – is analyzed using the Lorenz curve and the Gini

coefficient to assess the role each plays in the degree of fiscal neutrality achieved by the state's school finance plan.

Figure 7 illustrates the hypothetical Lorenz curve and is constructed as follows: The X axis depicts the cumulative percentage increase of the state's pupil population ordered for poor to rich based on the assessed valuation per pupil in each district. As each district's pupil population is accounted for, the membership figure represents a percentage of the total state population. The Y-axis is the cumulative percentage of total school revenues accruing to the population on the X-axis. The 45-degree "line of equality" which bisects the graph, represents a distribution where total school revenues per pupil are the same for the entire population if we assume equal unit on each axis. Thus, 25 percent of the pupil population would receive 25 percent of the total school revenues, half of the population would receive half the revenues, etc.

Figure 7: A Sample Lorenz Curve (Shiver, 1982)



The Lorenz curve has the ability to show that at point A the poorest 30 percent of the state's pupils only receive approximately 18 percent of the state's school revenues, while point B shows that the richest 30 percent of the pupils receive 45 percent of the revenues. A Lorenz curve that coincided with the line of equality would indicate perfect fiscal neutrality, since pupils in each district would receive an equal share of the total state school revenues.

The Gini coefficient is derived by dividing the area between the Lorenz curve and the line of equality by the area of the triangle below the line of equality. The resulting quotient characterizes the degree of inequality in a distribution and is shown by the following formula:

$$GC = A / B$$

Where GC is the Gini coefficient, A is the area between the Lorenz curve and the line of equality, and B is the triangular area below the line of equality. For example, if the shaded area between the Lorenz curve and the line of equality equaled 1.5 square inches and the triangular area under the line of equality were six square inches, the Gini coefficient for total school revenues would be:

$$GC = 1.5 / 6 = .250$$

If the Lorenz curve were to lie above the line of equality, the Gini coefficient would carry a negative sign, thus reflecting the disproportionally larger percentage of revenue received by the poorer students. As school revenues are more equally distributed among districts of varying fiscal capacity, the area between the Lorenz curve and the line of

equality becomes smaller. The closer the Gini coefficient approaches zero, the greater the degree of fiscal neutrality achieved by the state's school finance plan.

Tables 14, 15, and 16 show the framework for evaluating the distribution of revenues using Lorenz curves and the resulting Gini coefficients

Findings from the Original Study

Total Local Revenue. Lorenz curves for the distribution of total local revenue across each of the six selected years of the original study were produced and the Gini coefficient calculated for each year by Dr. Shiver. Table 14 shows the Gini coefficients for each of these years. Although there is little difference between the distributions for 1970-71, 1972-73, and 1980-81, it was noted that immediately following establishment of the FEFP, total local revenues were more equally distributed than at any other time during the selected years of the original study. The inequality in the distribution of total local revenues was greater in 1980-81 than in any of the earlier years studied based on the unadjusted revenues.

Table 14: Gini Coefficients of the Distribution of Total Local Revenues per Pupil, 1970-1980

Year	Unadjusted Total Local Revenue
1970-71	0.1996
1972-73	0.1959
1974-75	0.1582
1976-77	0.1863
1978-79	0.1817
1980-81	0.2044

Total State Revenues. The Lorenz curves for total state revenues were also produced and Gini coefficients determined. Table 15 shows the Gini coefficients for total state revenues. Total state revenues were distributed in favor of the poorer districts each year. The equalizing power of total state revenue to the poorest districts, however, actually decreases between 1972-73 and 1980-81. A comparison of the Gini coefficients for total state revenues reveals that in 1980-81, state aid was less effective in offsetting the unequal distribution of total local revenues that in any other year.

The larger the value of the negative total state revenue Gini coefficient, the more effectively it contributes to fiscal neutrality by reducing the Gini coefficient of total state and local revenue inequality.

Table 15: Gini Coefficients of the Distribution of Total State Revenues per Pupil, 1970-1980

Year	Unadjusted Total State Revenue
1970-71	-0.0376
1972-73	-0.0650
1974-75	-0.0498
1976-77	-0.0335
1978-79	-0.0443
1980-81	-0.0259

Gini coefficients derived from two of the four total state revenue Lorenz curves measured after the FEFP's enactment indicate that the 1976-77 and 1980-81 curves actually lay closer to the line of equality than either of the Lorenz curves for 1970-71 and

1972-73. When compared with the Lorenz curves for the other years, the position of the 1972-73 total state revenue Lorenz curve in relation to the line of equality indicates that the pupils residing in the poorest districts received a smaller share of total state revenue in 1974-75, 1976-77, 1978-79, and 1980-81 than they did in 1972-73. Thus, total state revenues were distributed more in favor of high fiscal capacity districts for the years subsequent to the FEFP's establishment than they had been in 1972-73. These conclusions are drawn solely on the basis of unadjusted revenues. The inclusion of cost adjustments as proposed may show the FEFP to be more equitable.

Total State and Local Revenues. Gini coefficients for total state and local revenue are displayed in Table 16. Although the Gini coefficients for the distribution of total state and local revenues varied less than the coefficients for the other revenue distributions and are nearly identical, an examination of Gini coefficients of total state and local revenue reveals that total state and local revenues were distributed more in favor of the richer districts in 1980-81 than in any of the earlier years of study. The most equal distribution of total state and local revenues came in 1974-75, the year immediately following establishment of the FEFP. It is to be noted however that the corresponding Gini coefficients for 1970-71 and 1972-73 suggest a declining trend over time in the degree of total state and local revenue distribution inequality prior to the FEFP.

The design of the FEFP provides for a cost adjustment for districts, the District Cost Differential (DCD). The inclusion of this cost adjustment provides weighted funds based on local economies.

Table 16: Gini Coefficients of the Distribution of Total State and Local Revenues per Pupil, 1970-1980

Year	Unadjusted Total State & Local Revenue
1970-71	-0.0534
1972-73	-0.0366
1974-75	-0.0324
1976-77	-0.0560
1978-79	-0.0506
1980-81	-0.0605

It is to be expected that more state and local revenue would flow to these high cost districts. This is the major flaw in the Shiver study. The Shiver study does not recognize the varying cost of doing business in each of the state's 67 districts. To say the FEFP is inequitable because it provides more funds to the higher cost districts, ignores the basic fact that it cost more money to operate a district in certain local economies. The current study uses multiple cost adjustments. If adjusted revenues show an inequity exists, then the FEFP could be called into question. To question the formula based on unadjusted revenue is misleading.

Relationships Between Revenue Measures and Selected Independent Variables

The third phase of this study focuses on changes in the relationship between per pupil revenues and the selected independent variables before and after the FEFP's enactment in 1973. The Pearson product moment correlation was used by Dr. Shiver to assess the extent to which changes in per pupil revenues are associated with changes in the independent variables identified in Chapter 1 - District Cost Differential factor and

Assessed Valuation. Using each of the six years studied previously -- 1970-71, 1972-73, 1974-75, 1976-77, 1978-79, and 1980-81 -- matrices were constructed which show the correlation between each of the independent variables and the three per pupil revenue measures – total state revenue per pupil, total local revenue per pupil, and total state and local revenue per pupil – used by Dr. Shiver. An additional fourteen years will be analyzed by the current study -- 1982-83, 1984-85, 1986-87, 1988-89, 1990-91, 1992-93, 1994-95, 1996-97, 1998-99, 2000-01, 2002-03, 2004-05, 2006-07, and 2008-09.

To aid in the interpretation of changes in the strength of the indicated relationships, the coefficient of determination is symbolized by r^2.

Selected Independent Variables

The selected independent variables are defined as follows:

Assessed Valuation per Pupil. A traditional measure of fiscal capacity in school finance equity studies, the property tax base is the nonexempt value of property in each district was divided by the district's student membership to obtain the assessed value per pupil. This procedure is employed again in the current study.

District Cost Differential Factor. Cost of living factors for the state's school districts are included in the Florida Education Finance Program (FEFP) formula, but were not a part of the Minimum Foundation Plan (MFP). The factor is intended to compensate districts for significant differences in the cost of living based on an annual study and survey of an identical "market basket" of goods and services priced in each county. Because the District Cost Differential factor is an index, the variable was not measured

per pupil in the correlation matrices. This procedure is employed again in the current study.

Because the product moment coefficient of correlation assumes that the relationship between the two variables is a linear one, scatter plots were constructed by Dr. Shiver and inspected for each correlation in the original study to determine if relationships were possibly curvilinear, the computed Pearson r can underestimate the true strength of the relationship. Therefore, for those scatter plots that appeared to depict pronounced curvilinear relationships, a second-order polynomial regression model was created in order to obtain a more appropriate indicator of the strength of the relationship between the variables. Scatter plots again are constructed and analyzed. Should any of these appear to be curvilinear; the second-order polynomial regression model will be employed.

Total State Revenue Measures

Tables 17 and 18 show the relationship between total state revenue per pupil and the aforementioned independent variables of interest at two-year intervals from 1970-71 through 1980-81. The tables have been expanded to allow for the addition of data at the stated two-year interval for the period from 1982-83 through 2008-09. In addition to the reported Pearson product moment correlation coefficients, symbolized by r, corresponding coefficient of determination (r^2) also were presented. The multiple correlation coefficient, R^2, and its square root, R, are given in parentheses alongside those

Table 17: Product-Moment Correlation Between the District Cost Differential and Total State Revenues per Pupil, 1970-1980

Year	Total State Revenue	
	r	r^2
1970-71	---	
1972-73	---	
1974-75	-.59	.35
1976-77	-.48	.23
1978-79	-.49	.24
1980-81	-.49	.24

Table 18: Product-Moment Correlation Between Assessed Property Value per Pupil and Total State Revenues per Pupil, 1970-1980

Year	Total State Revenue	
	r	r^2
1970-71	-.37	.14
1972-73	-.60	.36
1974-75	-.78	.61
1976-77	-.68	.46
1978-79	-.79	.62
1980-81	-.84	.71

product moment correlations and coefficients of determination that substantially underestimated the strength of relationships due to their curvilinearity. (All multiple correlations coefficient are positive.)

A much stronger inverse relationship appeared to have developed between total state revenue per pupil and assessed valuation per pupil as shown in Table 18. By 1980-81, 71 percent of the variance in one variable was associated with variance in the other

variable, an increase of 57 percentage points over the coefficient of determination of the same variables in 1970-71. The difference between the first and last year correlation coefficients for total state revenue per pupil and assessed valuation per pupil shows a substantially greater degree of negative relationship – a greater equalizing effect under the FEFP. The current study provides data to determine if that inverse relationship continued or reversed in subsequent years.

The moderate negative relationship between state revenue per pupil and the FEFP's district cost differential factor depicted in Table 17 remained relatively stable across the selected years of study. That stability may or may not continue in the current study. But either the development of a future trend or the continued stability would be noteworthy, as well as changes in the relationship as adjusted revenues are implemented.

Total Local Revenue Measures

The matrix presented in Table 19 and 20 show the correlations between total local revenue per pupil and the independent variables of interest for the selected years of the original study. The matrix has been expanded to allow for the addition of data for the selected years of the current study.

Overall, Tables 19 and 20 show the FEFP's impact on the relationship between total local revenue per pupil and the selected independent variables to have been negligible during the period of the original study. Continued study provides data to determine if a relationship emerged or if the impact remained negligible.

Table 19: Product-Moment Correlation Between the District Cost Differential and Total Local Revenues per Pupil, 1970-1980

Year	Total Local Revenue	
	r	r^2
1970-71		---
1972-73		---
1974-75	.63	.40
1976-77	.67	.45
1978-79	.64	.41
1980-81	.66	.44

Table 20: Product-Moment Correlation Between Assessed Property Value per Pupil and Total Local Revenues per Pupil, 1970-1980

Year	Total Local Revenue	
	r	r^2
1970-71	.87	.76
1972-73	.94	.88
1974-75	.96	.92
1976-77	.97	.94
1978-79	.98	.96
1980-81	.96	.92

Total State and Local Revenue Measures

Tables 21 and 22 display correlations between total state and local revenue per pupil and each of the selected independent variables of interest. In Table 22, total state and local revenue per pupil was correlated with assessed valuation per pupil. The moderate positive relationship between the two variables had remained relatively stable over the 11-year period of the original study with virtually identical correlation coefficients reported for 1970-71 and 1980-81.

The static condition of this particular relationship is not characteristic of a school finance plan, which has moved or is moving toward fiscal neutrality. Should the static condition continue through the proposed 27-year period, it would be even more striking and indicate that the system for financing Florida's schools made no movement towards fiscal neutrality in the combined 36-years of study.

It has been argued that the FEFP's cost of living factor in effect primarily measures differences in the standard of living among the districts rather than differences in the cost of the same standard of living – a viewpoint supported by the fact that residents of wealthier districts tend to purchase a greater amount and higher quality of goods and services than do those who live in poorer districts (Johns, Alexander, & Jordan, 1971). Because a higher district cost differential factor is supposed to be a result of higher cost of living in a particular county, the moderate positive relationship reported in Table 21 for 1980-81, which is considerably stronger than the correlation for 1974-75, may be of greater interest if a strong relationship exists between the District Cost Differential factor and a district's fiscal capacity.

Table 21: Product-Moment Correlation Between the District Cost Differential and Total State and Local Revenues Per Pupil, 1970-1980

Year	Total State and Local Revenue			
	r	r^2	(R)	(R^2)
1970-71		---		
1972-73		---		
1974-75	.18	.03		
1976-77	.36	.13		
1978-79	.27	.07		
1980-81	.52	.27		

Table 22: Product-Moment Correlation Between Assessed Property Value per Pupil and Total State and Local Revenues Per Pupil, 1970-1980

Year	Total State and Local Revenue			
	r	r^2	(R)	(R^2)
1970-71	.60	.36	(.66)	(.44)
1972-73	.52	.27		
1974-75	.42	.18		
1976-77	.52	.27		
1978-79	.37	.14		
1980-81	.62	.38		

Table 23 shows the district cost differential factor correlated with assessed valuation per pupil for the selected years of study after the FEFP was enacted. The relatively high, positive relationship between the FEFP's cost of living factor and the wealth measure lends credence to the criticism of the function of the state's cost of living differential.

Table 23: Product-Moment Correlation Between Assessed Property Value per Pupil and Florida's District Cost Differential, 1970-1980

Year	Assessed Value per Pupil
1974-75	.63
1976-77	.66
1978-79	.65
1980-81	.65

Returning to Table 21, the 1980-81 coefficient of determination of .27 means that the FEFP's District Cost Differential explains or is associated with approximately 27 percent of the variation in total state and local revenue per pupil. Given this degree of association between this particular measure of state aid and the district cost differential for 1980-81, Johns' earlier caveat remains pivotal:

> If there are real variations among the counties of the state in the cost of living for the *same standard of living*, the legislature should take those variations into consideration in the Finance Act because approximately 80 percent of the current expenses of schools are required to pay the salaries and wages of school employees. However, the legislature defeats the purpose of providing for substantially equal educational programs and services if it allocated school funds in such a manner as to provide for a higher standard of living in some counties than in others (Johns & Alexander, 1971).

Continued study will determine if the criticisms leveled by Johns and Shiver resulted in modifications to the FEFP or if a need to renew those criticisms exists. The analysis of timely data and its publication would provide the needed determinant for this judgment.

Equity Studies in the Literature

The method described in this chapter, and previously in Chapter 1, draws support from the literature. Studies that seek to determine if a state's system for distributing available funds for education can be found throughout the literature. Equity studies can be found from multiple authors, in multiple journals, and for many different states. In the pages that follow, these studies and their methods are detailed.

The Equity of Public Education Funding in Georgia

Ross Rubenstein, Dwight Doering, and Larry Gess conducted an assessment of the state of Georgia's system for distributing state funding to local districts. Published in the fall of 2000 by the Journal of Education Finance, the study examined the distribution of funding in Georgia from 1988-1996. The study examined the distribution of state and local per pupil revenues. These revenues were adjusted using two independent indexes. Revenues were also adjusted for annual differences using the Consumer Price Index (Rubenstein, Doering, & Gess, 2000).

Equity measures employed by the study include the range, restricted range, coefficient of variation, and the McLoone index. Correlations were calculated between revenues per pupil and factors the authors referred to as "illegitimate" variables such as property wealth.

School Finance Reform in Tennessee

Laura Ann Cohen-Vogel and Daniel Cohen-Vogel conducted an assessment of the equity of Tennessee's system for distributing funding to local districts. Published in the winter of 2001 by the Journal of Education Finance, the study examined the distribution of funding in Tennessee from 1991 to 1998. The study examined operating expenditures in Tennessee's local school districts. Operating expenditures were adjusted using Chamber's Geographic Cost of Education Index (GCEI). Operating expenditures were also adjusted based on annual differences using inflation measures from the U.S. Department of Commerce (Cohen-Vogel & Cohen-Vogel, 2001).

The Tennessee study employed six equity statistics: the range, restricted range, federal range ratio, coefficient of variation, Gini coefficient, and the McLoone index.

Wealthy or Poor: Who Receives and Who Pays in Iowa

Julie Bundt and Suzanne Leland conducted a review of Iowa system for distributing available funding. Published in the spring of 2001 by the Journal of Education Finance, the study looked exclusively at data from 1998. The study did not employ cost adjustments of any kind. The authors discussed cost adjustments but noted that Iowa has a more uniform economy than most other states (Bundt & Leland, 2001).

Four equity statistics were used in the Iowa study: federal range ratio, McLoone index, coefficient of variation, and the Gini coefficient.

Assessing the Equity of Kentucky's SEEK Formula

Lawrence Picus, Allan Odden, and Mark Fermanich conducted a review of Kentucky's system for financing local districts, the Support Education Excellence in

Kentucky or SEEK formula. Published in the spring of 2004 by the Journal of Education Finance, the study examined the financing of Kentucky's schools for a ten year period beginning with the 1990-91 school year and ending with the 1999-2000 school year. The study looked from a revenue perspective at the resources available to school districts in Kentucky. Revenue was adjusted using Chamber's GCEI (Picus, Odden, & Fermanich, 2004).

Seven equity statistics were employed by the Kentucky study: the range, restricted range, federal range ratio, coefficient of variation, Gini coefficient, McLoone index, and Verstegen index. Fiscal neutrality was also judged using correlations between per pupil revenues and the wealth of each district. District wealth was established using the property tax base.

Horizontal and Vertical Equity Analysis of Indiana

Marilyn Hirth and Edward Eiler conducted an assessment of the state of Indiana's system for distributing state funding to local districts. Published in the spring of 2005 by the Journal of Education Finance, the study examined the distribution of funding in Indiana from 1993 through 2001. The study examined the distribution of state and local per pupil revenues under Indiana's reward-for-effort school funding formula. These revenues were adjusted for both the cost of living variations and inflation (Hirth & Eiler, 2005).

The range, restricted range, federal range ratio, Gini coefficient, McLoone index, and coefficient of variation were employed as equity statistics in the Indiana study.

The Equality of Public School District Funding

Michele Moser and Ross Rubenstein authored a national study to determine the equity of public school financing in the United States. Published in January of 2002 by the journal Public Administration Review, the study examined state and local revenues per pupil across each of the fifty states in fiscal years 1992 and 1995. State and local revenues per pupil were adjusted using Chamber's Geographic Cost of Education Index (Moser & Rubenstein, 2002).

The federal range ratio, coefficient of variations, McLoone index, and Gini coefficient were equity measures used in the national study.

CHAPTER 4

FINDINGS

The purpose of this study was to examine the distribution of available funding for Florida's public school districts. Data covering a twenty-seven year period from the 1982-83 school year through the 2008-09 school year was examined. Data was examined for even number years during this period yielding 14 data sets.

Data for the 1982-83, 1984-85, 1986-87, 1988-89, 1990-91, 1992-93, 1994-95, 1996-97, 1998-99, 2000-01, 2002-03, 2004-05, 2006-07, and 2008-09 years were extracted from the First Calculation from the year of interest made available from the Commissioner of Education. The First Calculation was selected as the data source for the study so that analysis takes place using the same figures the legislature uses in its annual deliberations.

Chapter three outlined the research design and methods to be employed in this study. This chapter will begin with a brief review of those methods and continue into a presentation of the results. The results will be presented in two sections. Measures of distributional equity will be discussed in the first results section. The relationship between the selected revenue measures and the independent variables will be the subject of the second. The chapter will conclude with a presentation of a single year's analysis using weighed students based on the program cost factors.

Research Design and Methods

This phase of the study investigates the effect of the FEFP on the degree of distributional equity achieved by the state's school finance plan. The State of Florida's Florida Education Finance Program is analyzed at three different levels of revenue aggregation: total state revenue per pupil, total local revenue per pupil, and total state and local revenue per pupil. At each of these levels, the variables of interest are subjected to three separate, distinct cost adjustments. The end result is a total of twelve revenue figures to which our measures of variability are applied.

Variables for Analysis

Total State Revenue per Pupil. This variable is the sum of all state revenue provided to districts and includes the FEFP appropriations, categorical program funding, special state revenue sources, special state appropriations, and state lottery funds divided by the unweighted FTE student count of the district. The required local effort is prescribed by the state, but raised from local sources (property taxes) and is included in total state revenue per pupil.

District Cost Differential (DCD) Adjusted Total State Revenue per Pupil. This variable is the sum of all state revenue provided to districts and includes the FEFP appropriations, categorical program funding, special revenue sources, special appropriations, and lottery funds divided by the unweighted FTE student count of the district divided by the district's DCD.

Comparable Wage Index (CWI) Adjusted Total State Revenue per Pupil. This variable is the sum of all state revenue provided to districts and includes the FEFP

appropriations, categorical program funding, special revenue sources, special appropriations, and lottery funds divided by the unweighted FTE student count of the district divided by the district's CWI.

Geographic Cost of Education Index (GCEI) Adjusted Total State Revenue per Pupil. This variable is the sum of all state revenue provided to districts and includes the FEFP appropriations, categorical program funding, special revenue sources, special appropriations, and lottery funds divided by the unweighted FTE student count of the district divided by the district's GCEI.

Total Local Revenue per Pupil. This variable is the revenue derived from the required local effort combined with other local revenues provided to the district divided by the unweighted FTE student count.

DCD Adjusted Total Local Revenue per Pupil. This variable is the revenue derived from the required local effort combined with other local revenues provided to the district divided by the unweighted FTE student count divided by the district's DCD.

CWI Adjusted Total Local Revenue per Pupil. This variable is the revenue derived from the required local effort combined with other local revenues provided to the district divided by the unweighted FTE student count divided by the district's CWI.

GCEI Adjusted Total Local Revenue per Pupil. This variable is the revenue derived from the required local effort combined with other local revenues provided to the district divided by the unweighted FTE student count divided by the district's GCEI.

Total State and Local Revenue per Pupil. This variable combines the total state revenue and the total local revenue provided to the district divided by the unweighted FTE student count.

DCD Adjusted Total State and Local Revenue per Pupil. This variable combines the total state revenue and the total local revenue provided to the district divided by the unweighted FTE student count divided by the district's DCD.

CWI Adjusted Total State and Local Revenue per Pupil. This variable combines the total state revenue and the total local revenue provided to the district divided by the unweighted FTE student count divided by the CWI.

GCEI Adjusted Total State and Local Revenue per Pupil. This variable combines the total state revenue and the total local revenue provided to the district divided by the unweighted FTE student count divided by the Geographic Cost of Education Index (GCEI).

Measures of Dispersion of Variability and Variation

Ten measures of dispersions or variability are utilized in the current study.

Percentiles. School districts are ranked according to the variable of interest with values listed for the 100^{th} (highest), 95^{th}, 75^{th}, 50^{th} (median), 25^{th}, 5^{th}, and 1^{st} (lowest) percentiles.

Range. The range is the difference between the values of a variable in the highest and lowest districts in a distribution.

Restricted Range. The restricted range is a measure less sensitive to extreme values than the range. In this study, it is the difference between the values of the selected revenue measure at the 95^{th} and the 5^{th} percentiles.

Federal Range Ratio. The federal range ratio is the restricted range divided by the per-pupil revenue measure at the 5^{th} percentile.

Mean. The mean is the sum of the school districts values of a variable divided by the number of districts.

Standard Deviation. The standard deviation is the square root of the mean of the squared differences between the value of the variable in each district and the mean.

Coefficient of Variation. The coefficient of variation is the standard deviation divided by the mean.

Gini Coefficient. After school districts are ranked in ascending order by the variable of interest, they will be plotted on a graph with the percentage of the total pupil population measured along the horizontal axis and the percentage of revenue received on the vertical axis. A 45-degree diagonal dissects the graph and represents the locus points where the two factors are equal, or a state of total equality. Inequalities are represented by the curve (Lorenz curve) divergent from the diagonal. The Gini coefficient is a statistical summary of distributional equality and is equal to the area between the Lorenz curve and the 45-degree diagonal divided by the area of the triangle below the diagonal. The closer the Gini coefficient approaches zero, the closer the distribution is to total equality.

McLoone Index. The McLoone index is the sum of per-pupil revenue measure for students at or below the median divided by the sum of per-pupil revenue measure if all the students below the median received the median amount.

Verstegen Index. The Verstegen index is the sum of per-pupil revenue measure for students at or above the median divided by the sum of per-pupil revenue measure if all the students above the median received the median amount.

Correlations

Separate analysis using Pearson product-moment correlations will focus on the relationship between each of the selected per pupil revenue measures and the independent variables.

Independent Variables

The selected independent variables are measured in terms of amount or unit per pupil and are as follows:

District Cost Differential Factor. This factor is incorporated into the FEFP formula to adjust the districts' FEFP allocations for the varying cost of providing similar education programs. The District Cost Differential is not based on student variables, but rather economic data relevant to the cost of doing business in a geographic region and is not measured per pupil.

Assessed Valuation. The property tax base is the assessed, nonexempt value of property against which taxes are levied. Assessed property values are a net figure for a district. In order for the assessed valuation to be relevant for a school finance study, the figure was converted to a per pupil figure. Each district's net assessed valuation is

divided by the unweighted FTE of that district. The result is an assessed valuation per pupil.

Measures of Distributional Equity

Total State Revenue Measures

Tables 24 and 25 show the framework for evaluating the distribution of total state revenue. Tables 24 and 25 are populated with data from the current study. Fourteen years worth of data is displayed. Table 24 displays the percentile ranks of total state revenues at the 100th, 95th, 75th, 50th, 25th, 5th and 1st percentiles. Table 25 displays the range, restricted range, mean, standard deviation, and coefficient of variation. Unadjusted total state revenue and District Cost Differential (DCD) adjusted total state revenue is shown for all fourteen years. Beginning in 1988-89, total state revenue is shown adjusted by the Geographic Cost of Education Index (GCEI). The Comparable Wage Index is first shown as an adjustment to total state revenue in 1998-99.

Percentile Ranks

The percentile ranks in Table 24 show increases in the majority of the years by measure over the previous year. In 1992-93, 2002-03, and 2008-09, at least three out of four revenue measures show decreases.

At the highest levels, 100th and 95th percentiles, total state revenues grew in each year from 1982-83 through 1990-91. This was true of all revenue measures during the period. In 1992-93, DCD Adjusted Total State Revenue and GCEI Adjusted Total State Revenue decreased at both the 100th and 95th percentiles. Unadjusted Revenues

Table 24: Percentile Distribution of Total State Revenues per Pupil, 1982-2008

Year	Revenue Type	100th	95th	75th	50th	25th	5th	1st
1982-83	Unadjusted	1704.55	1598.35	1474.88	1350.54	1137.90	724.28	541.98
	DCD Adjusted	1788.06	1654.68	1517.53	1403.92	1147.88	707.24	547.86
1984-85	Unadjusted	2053.23	1851.01	1757.57	1586.18	1362.21	695.91	432.51
	DCD Adjusted	2127.47	1954.52	1810.38	1652.17	1398.83	709.61	406.02
1986-87	Unadjusted	2361.13	2182.40	2017.57	1828.10	1510.81	743.63	573.28
	DCD Adjusted	2438.93	2310.39	2118.52	1839.13	1524.13	760.88	540.64
1988-89	Unadjusted	3284.14	3201.91	3002.87	2530.52	2109.93	1412.37	1134.86
	DCD Adjusted	3522.62	3368.52	3137.04	2621.59	2187.81	1377.21	1112.79
	GCEI Adjusted	3950.73	3763.77	3440.65	2683.40	2218.36	1431.62	1154.52
1990-91	Unadjusted	3783.81	3631.65	3378.01	2836.77	2360.18	1394.42	802.33
	DCD Adjusted	4083.38	3948.64	3575.30	3023.11	2387.04	1365.22	768.14
	GCEI Adjusted	4552.79	4248.74	3821.40	3096.60	2404.49	1362.69	781.35
1992-93	Unadjusted	3696.74	3498.54	3191.09	2676.22	2211.39	1151.11	729.56
	DCD Adjusted	3495.08	3354.87	3047.79	2526.99	1988.07	1034.42	655.03
	GCEI Adjusted	4368.38	4171.58	3619.84	2909.39	2203.92	1152.86	710.94
1994-95	Unadjusted	3869.69	3789.55	3395.83	2884.41	2348.17	1343.48	799.79
	DCD Adjusted	3777.88	3724.57	3333.48	2723.87	2192.97	1217.71	713.47
	GCEI Adjusted	4751.99	4612.20	3974.59	3271.23	2488.32	1421.33	810.26
1996-97	Unadjusted	4064.46	3942.65	3545.47	3129.28	2660.84	1485.74	946.48
	DCD Adjusted	4393.06	4227.29	3843.06	3284.97	2691.28	1478.90	915.75
	GCEI Adjusted	4929.94	4736.85	4125.59	3416.41	2743.56	1560.42	959.87
1998-99	Unadjusted	4269.37	4109.12	3720.09	3264.21	2801.16	1124.86	861.18
	DCD Adjusted	4573.02	4411.27	4043.24	3369.98	2832.50	1135.86	825.56
	GCEI Adjusted	5178.48	5019.51	4419.71	3570.66	2880.79	1235.49	862.52
	CWI Adjusted	7063.82	6170.83	5060.95	4109.26	3250.55	1434.76	994.45
2000-01	Unadjusted	4429.78	4361.89	3946.68	3490.54	2991.12	1255.36	877.03
	DCD Adjusted	4746.06	4654.99	4272.42	3587.83	3020.82	1252.23	843.04
	GCEI Adjusted	5436.70	5335.93	4706.82	3813.98	3092.79	1289.19	878.38
	CWI Adjusted	6175.63	5522.86	4581.46	3849.00	3148.79	1324.23	919.08
2002-03	Unadjusted	4627.00	4412.25	4014.56	3484.15	2785.54	952.32	885.04
	DCD Adjusted	4939.16	4771.37	4272.65	3467.36	2870.82	961.11	874.86
	GCEI Adjusted	5799.75	5420.97	4632.39	3685.14	3069.35	1053.85	935.49
	CWI Adjusted	6119.59	5609.70	4480.84	3426.60	2839.93	1058.69	868.66
2004-05	Unadjusted	5628.86	4959.02	4437.61	3744.54	3225.70	1306.58	1249.59
	DCD Adjusted	5915.78	5288.51	4691.90	3850.80	3207.48	1291.33	1257.08
	GCEI Adjusted	7055.54	6061.64	5139.61	4137.21	3321.60	1385.80	1315.85
	CWI Adjusted	6396.44	5807.64	4740.80	3656.46	2888.45	1266.41	1136.09
2006-07	Unadjusted	6291.73	6067.31	5178.07	4519.29	3113.06	1702.21	1608.08
	DCD Adjusted	6647.36	6442.56	5414.03	4590.02	3185.01	1733.79	1681.46
	GCEI Adjusted	7821.57	7325.98	6072.37	4891.16	3366.86	1807.73	1753.50
	CWI Adjusted	7394.77	7001.34	5680.12	4175.37	2904.79	1596.87	1521.90
2008-09	Unadjusted	6223.95	6008.00	4936.66	4210.79	2761.49	1931.65	1852.56
	DCD Adjusted	6785.82	6338.95	5096.59	4216.46	2756.85	1954.84	1926.70
	GCEI Adjusted	7783.26	7326.96	5655.96	4494.14	2936.37	2025.27	1918.51
	CWI Adjusted	7361.34	7041.46	5436.51	3901.15	2514.48	1767.11	1700.52

Table 25: Measures of the Variation in the Distribution of Total State Revenues per Pupil, 1982-2008

Year	Revenue Type	Range	Restricted Range	Mean	Standard Deviation	Coefficient of Variation
1982-83	Unadjusted	1203.27	874.07	1276.25	280.96	.22
	DCD Adjusted	1292.57	947.44	1308.74	303.20	.23
1984-85	Unadjusted	1804.60	1155.10	1475.72	372.34	.25
	DCD Adjusted	1880.16	1244.92	1527.44	401.35	.26
1986-87	Unadjusted	1918.76	1438.77	1697.33	444.02	.26
	DCD Adjusted	2000.55	1549.51	1749.65	474.96	.27
1988-89	Unadjusted	2242.04	1789.54	2470.76	570.65	.23
	DCD Adjusted	2495.31	1991.31	2556.88	634.42	.25
	GCEI Adjusted	2902.86	2332.15	2718.73	752.31	.28
1990-91	Unadjusted	2982.18	2237.23	2746.10	736.46	.27
	DCD Adjusted	3355.49	2583.43	2883.67	835.66	.29
	GCEI Adjusted	3781.98	2886.05	3013.33	946.19	.31
1992-93	Unadjusted	2987.21	2347.44	2562.60	754.79	.29
	DCD Adjusted	2859.18	2320.45	2396.71	743.55	.31
	GCEI Adjusted	3672.91	3018.72	2815.26	954.89	.34
1994-95	Unadjusted	3072.85	2447.07	2778.63	774.19	.28
	DCD Adjusted	3064.47	2506.86	2650.19	790.53	.30
	GCEI Adjusted	3943.02	3190.87	3139.43	1021.33	.33
1996-97	Unadjusted	3137.94	2456.90	2975.30	761.81	.26
	DCD Adjusted	3480.69	2748.39	3119.54	860.25	.28
	GCEI Adjusted	3992.31	3176.42	3353.27	1008.68	.30
1998-99	Unadjusted	3418.18	2984.26	3088.70	872.52	.28
	DCD Adjusted	3767.21	3275.41	3228.55	962.79	.30
	GCEI Adjusted	4317.08	3784.03	3480.13	1125.53	.32
	CWI Adjusted	6099.95	4736.07	4076.90	1391.04	.34
2000-01	Unadjusted	3565.62	3106.53	3283.86	915.97	.28
	DCD Adjusted	3929.22	3402.76	3439.77	1012.74	.29
	GCEI Adjusted	4562.18	4046.76	3697.71	1180.74	.32
	CWI Adjusted	5276.59	4198.63	3759.11	1202.17	.32
2002-03	Unadjusted	3798.97	3459.93	3239.22	1020.52	.32
	DCD Adjusted	4080.65	3810.26	3391.72	1114.27	.33
	GCEI Adjusted	4874.38	4367.12	3650.77	1298.05	.36
	CWI Adjusted	5260.27	4551.00	3554.86	1355.34	.38
2004-05	Unadjusted	4405.67	3652.45	3587.76	1145.70	.32
	DCD Adjusted	4682.63	3997.18	3731.77	1233.99	.33
	GCEI Adjusted	5742.72	4675.84	4042.82	1458.35	.36
	CWI Adjusted	5270.70	4541.23	3686.59	1421.60	.39
2006-07	Unadjusted	4749.46	4365.09	4135.29	1435.76	.35
	DCD Adjusted	5010.65	4708.77	4265.92	1523.10	.36
	GCEI Adjusted	6087.07	5518.25	4681.25	1822.81	.39
	CWI Adjusted	5878.50	5404.47	4257.73	1764.25	.41
2008-09	Unadjusted	4405.03	4076.36	3965.18	1365.17	.35
	DCD Adjusted	4866.14	4384.11	4112.56	1485.67	.36
	GCEI Adjusted	5956.16	5301.68	4471.94	1756.13	.39
	CWI Adjusted	5695.33	5274.36	4081.12	1712.30	.42

decreased in 1992-93 at the 95th percentile only. The period from 1994-95 through 2006-07 showed constant growth with the exception of CWI Adjusted Total State Revenue in 2000-01 at the 95th percentile and 2002-03 at the 100th percentile. Total State Revenue at the 100th percentile decreased in 2008-09 in unadjusted, GCEI adjusted, and CWI adjusted. At the 95th percentile, only unadjusted revenue decreased in 2008-09.

At the intermediate levels; 75th, 50th, and 25th percentiles, revenues grew consistently from 1982-83 through 1990-91. This was true of all revenue measures during the period. In 1992-93, Unadjusted Total State Revenue decreased at the 75th, 50th and 25th percentiles. DCD Adjusted Total State Revenue decreased at only the 75th percentile. GCEI Adjusted Total State Revenue decreased at the 50th and 25th percentiles. The period from 1994-95 to 1998-99 again showed consistent growth in all measures. CWI Adjusted Total State Revenue decreased at the 75th, 50th, and 25th percentile in 2000-01. The other three revenue measures recorded another year of growth. In 2002-03, reduction in revenues took place at the 50th and 25th percentiles for unadjusted revenues, 75th and 50th percentiles for GCEI adjusted revenues, and at 75th, 50th and 25th percentiles for CWI adjusted revenues. There was growth across the board in 2004-05. A decrease in Unadjusted Total State Revenue took place at the 25th percentile in 2006-07. In 2008-09, unadjusted revenues decreased at the 75th, 50th, and 25th percentiles. GCEI adjusted revenues decreased at the 75th and 50th percentiles during 2008-09. CWI adjusted revenues decreased at the 75th 50th, and 25th percentiles for the year.

At the lowest levels, 1st and 5th percentiles, Total State Revenues fluctuated more than the other levels. In 1984-85, when revenues increased consistently for the intermediate and high levels, revenues decreased for Unadjusted Total State Revenue at the 5th and 1st percentile. At the 1st percentile, DCD Adjusted Total State Revenue also decreased in 1984-85. Total state revenues increased across the board in 1986-87 and 1988-89, almost doubling in 1988-89. Revenues decreased for 1990-91 at the 1st and 5th percentiles for Unadjusted Total State Revenue. DCD Adjusted Total State Revenue deceased at the 5th percentile and increased at the 1st. GCEI Adjusted Total State Revenue increased at the 5th percentile and decreased at the 1st for the same year. As with the intermediate and high percentiles, 1992-93 showed decreases in the majority of the revenue measures. Growth was consistent in 1994-95 and 1996-97 when all revenues increased. The period from 1998-99 through 2002-03 showed great variation of revenues at the 5th and 1st percentiles. From 2004-05 to 2008-09, the revenues grew consistently.

Range and Restricted Range

The range and restricted range of total state revenues is displayed in a column format in Table 25. Graphical illustrations of the range and restricted range of state revenues are shown Figures 8 through 13.

Figure 8 shows a multiple line graph of the range and restricted range of Unadjusted Total State Revenue per Pupil. The figure clearly shows the range and restricted range increasing on an annual basis. The range and restricted range peak in 2006-07 before showing a modest decline in 2008-09.

Figure 8: Range and Restricted Range of Unadjusted Total State Revenue per Pupil, 1982-2008

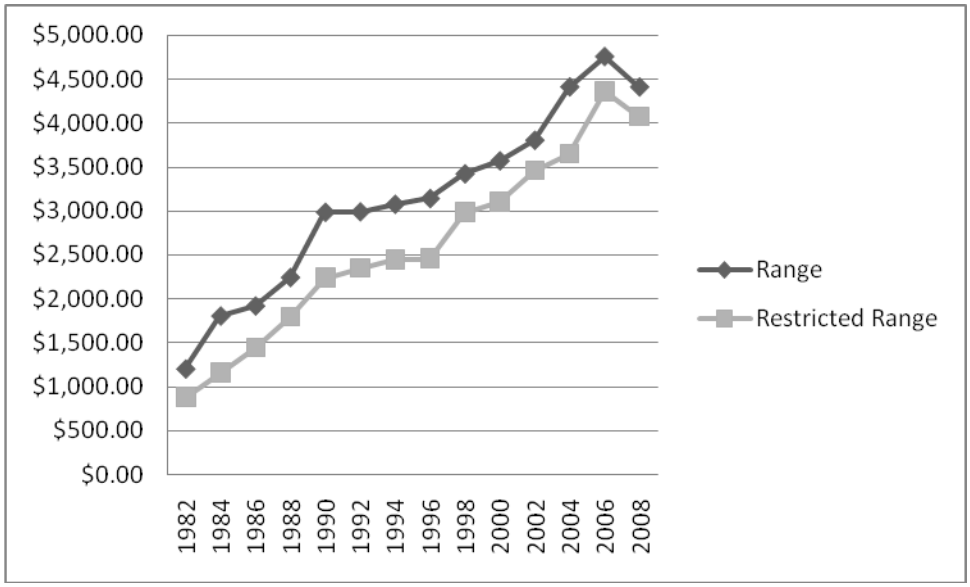


Figure 9 shows a multiple line graph of the range and restricted range of DCD Adjusted Total State Revenue per Pupil. Unlike the range and restricted range unadjusted revenues per pupil depicted in Figure 8, the range and restricted range of DCD Adjusted Total State Revenue per Pupil does not increase consistently. Both the range and restricted range decrease in 1992-93 before resuming a steady climb and peaking in 2006-07. Like the unadjusted range and restricted range, the DCD adjusted range and restricted range decreases in 2008-09.

Figure 9: Range and Restricted Range of DCD Adjusted Total State Revenue per Pupil, 1982-2008

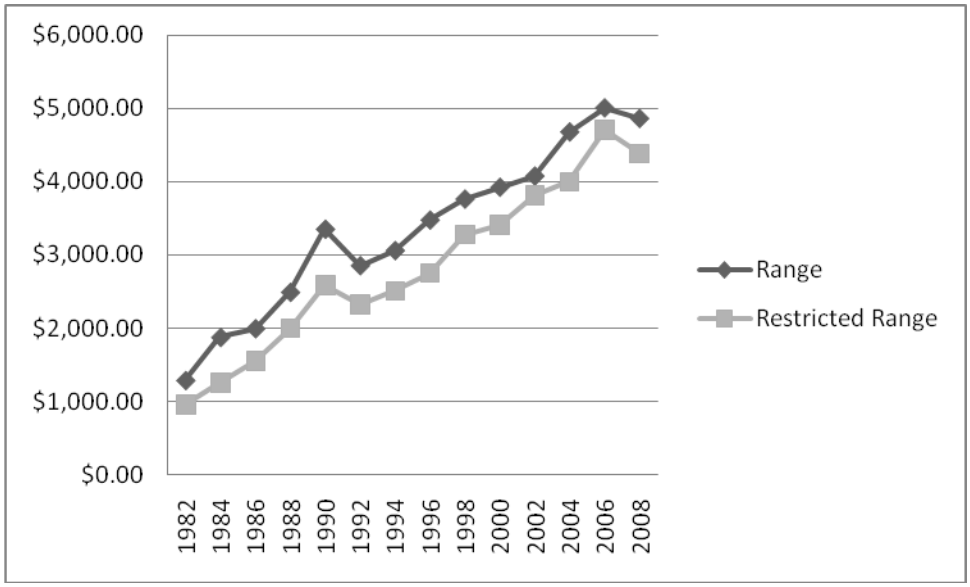


Figure 10 shows a multiple line graph of the range and restricted range of CWI Adjusted Total State Revenue per Pupil. Unlike Figures 8 and 9 that show fourteen data points, Figure 10 has only six. The range of CWI adjusted revenues decreases from 1998-99 to 2000-01. It is flat from 2000-01 to 2004-05, increases in 2006-07, and decreases in 2008-09. The restricted range of CWI Adjusted Total State Revenue per Pupil decreases in 2000-01 and 2008-09. It increases in 2002-03 and 2006-07. From 2002-03 to 2004-05 CWI Adjusted Total State Revenue per Pupil is flat.

Figure 10: Range and Restricted Range of CWI Adjusted Total State Revenue per Pupil, 1998-2008

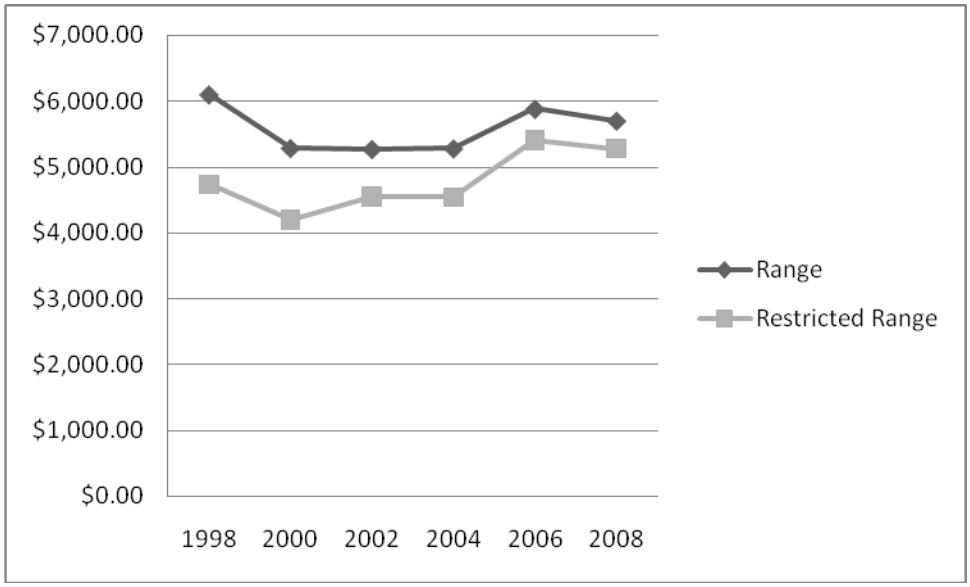


Figure 11 shows a multiple line graph of the range and restricted range of GCEI Adjusted Total State Revenue per Pupil. The restricted range in this graph shows a steady climb similar to the graph of unadjusted revenue. Like the unadjusted revenue line, the line representing the restricted range of GCEI Adjusted Total State Revenue per Pupil increases each year with the exception of the final year of the study, 2008-09. The range of GCEI Adjusted Total State Revenue per Pupil increases in the same manner with the exception of a slight decrease in 1992-93.

Figure 11: Range and Restricted Range of GCEI Adjusted Total State Revenue per Pupil, 1988-2008

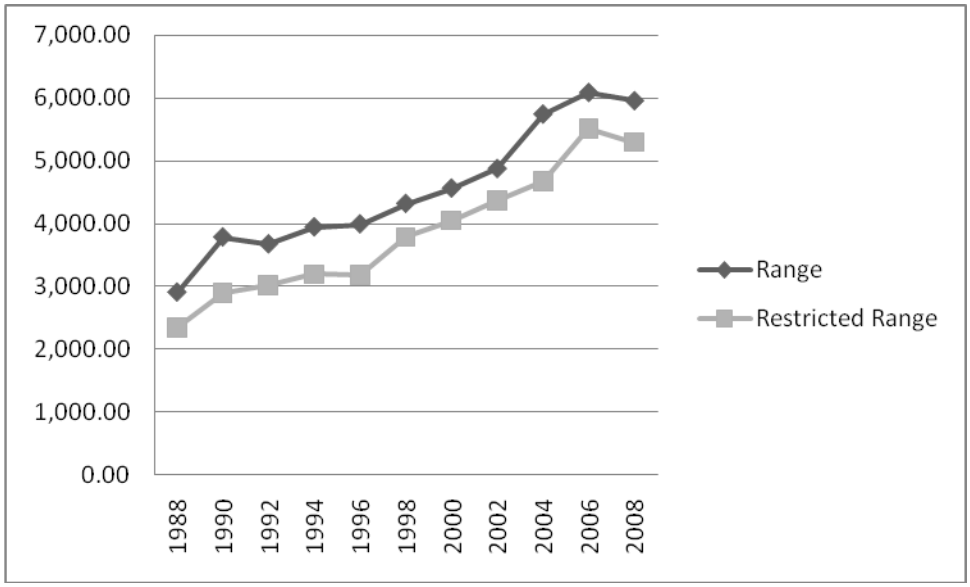


Figure 12 is a compilation of the ranges of each revenue type. This multiple line graph shows the range for unadjusted, DCD Adjusted, GCEI Adjusted, and CWI Adjusted Total State Revenues. With the exception of a slight outlier in 1998-99, this graph shows that the ranges of total state revenues per pupil moved in concert together showing similar trends.

Figure 12: Range of Total State Revenues per Pupil, 1982-2008

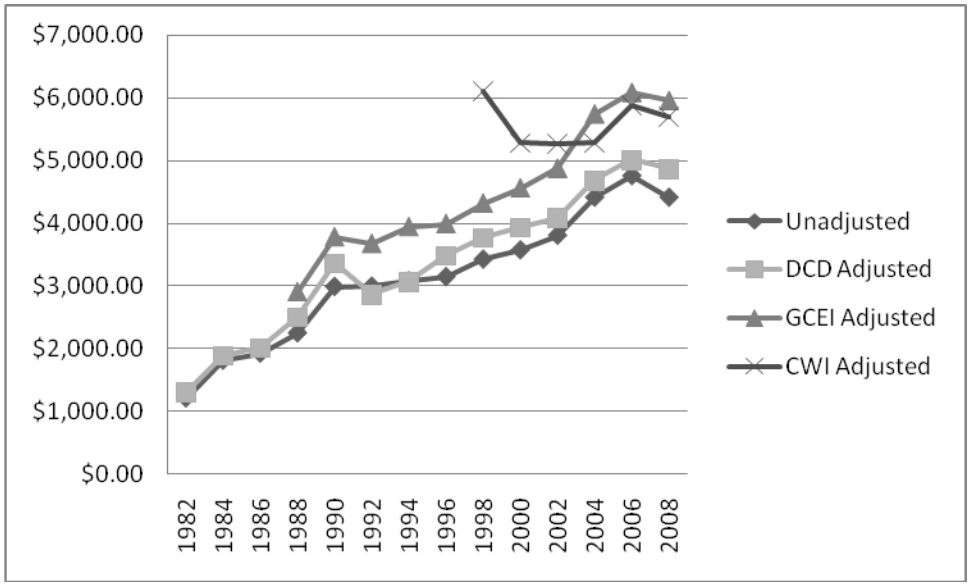
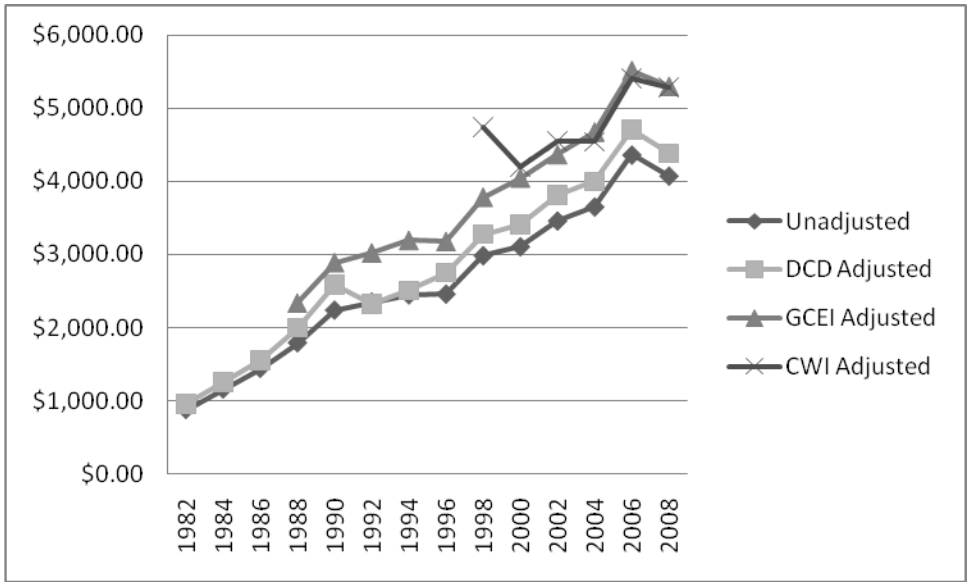


Figure 13 is also a compilation, this time of the restricted range. The same comments hold true for the restricted range as the range. The restricted ranges show similar trends with the exception of and outlier in 1998-99. The restricted range of Total State Revenues per Pupil show a much more dramatic spike in 2006-07 than the ranges do.

Figure 13: Restricted Range of Total State Revenues per Pupil, 1982-2008

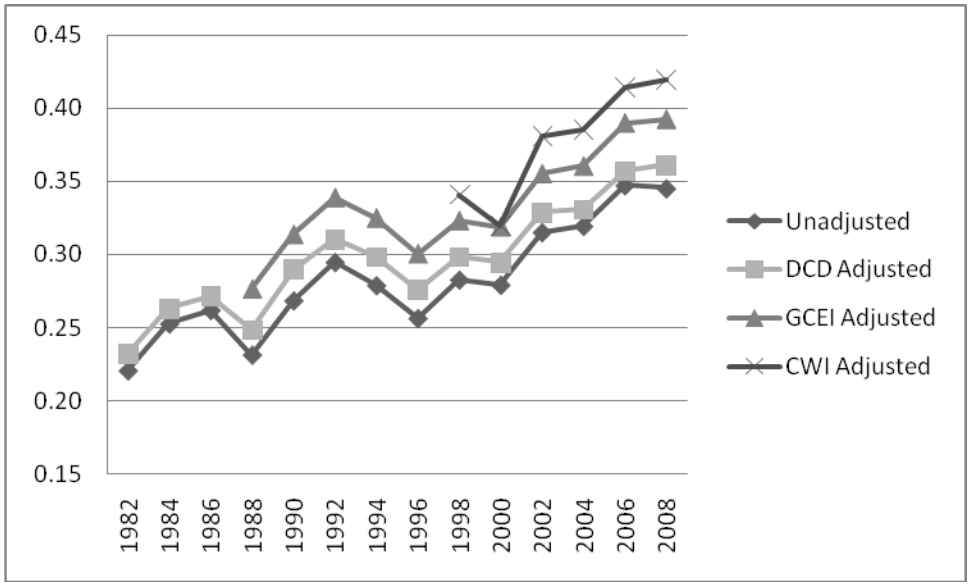


Coefficient of Variation

The coefficient of variation of total state revenues is displayed in a column format in Table 25. Graphical illustrations of the coefficient of variation of state revenues are shown in Figure 14.

The coefficient of variation fluctuates throughout the sample period. Unadjusted Total State Revenue per Pupil has a minimum coefficient of variation of 0.22 and a maximum of 0.35. DCD Adjusted Total State Revenue per Pupil has a minimum coefficient of variation of 0.23 and a maximum of 0.36. GCEI Adjusted Total State Revenue per Pupil has a minimum coefficient of variation of 0.28 and a maximum of 0.39. CWI Adjusted Total State Revenue per Pupil has a minimum coefficient of 0.34 and 0.42. For each total state revenue type, the minimum occurs in its first year of existence and the

Figure 14: Coefficient of Variation of Total State Revenues per Pupil, 1982-2008



maximum the last year of the study. As one examines the multiple line graph in Figure 14, it is interesting to note that the lines never cross.

The distribution of Unadjusted Total State Revenues per Pupil became less equitable as the study progressed. Unadjusted Total State Revenues per Pupil were distributed most equitably in 1984-85 and least equitably in 2006-07.

Federal Range Ratio

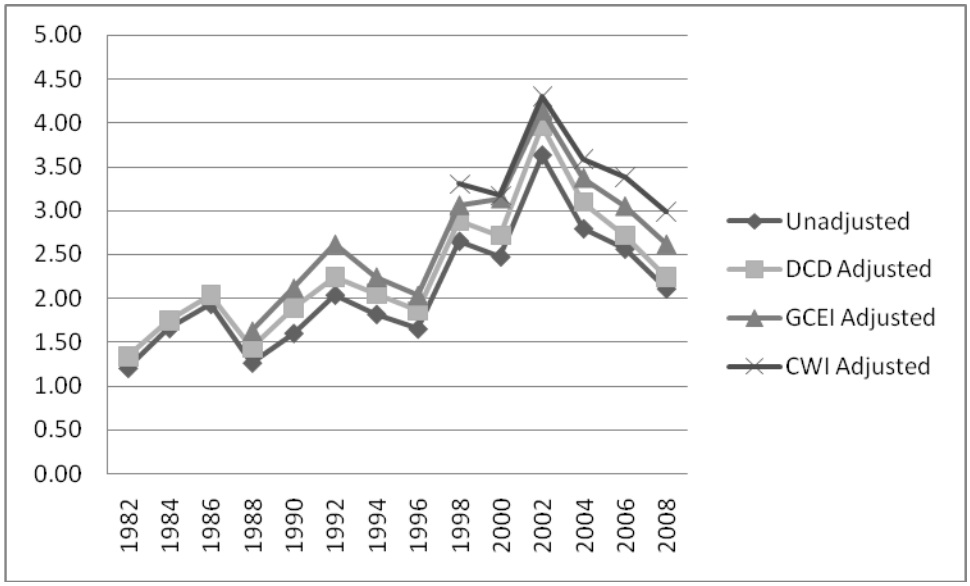
The federal range ratio of total state revenues is displayed in a column format in Table 26. Graphical illustrations of the federal range ratio of state revenues are shown in Figure 15.

The federal range ratio for all total state revenue types begin at slightly over one. They build in unison to a peak in 2002-03. At their peak, the federal range ratio is most

Table 26: Additional Measures of the Variation in the Distribution of Total State Revenue per Pupil, 1982-2008

Year	Revenue Type	Federal Range Ratio	McLoone Index	Verstegen Index
1982-83	Unadjusted	1.21	.79	1.10
	DCD Adjusted	1.34	.77	1.10
1984-85	Unadjusted	1.66	.76	1.10
	DCD Adjusted	1.75	.75	1.10
1986-87	Unadjusted	1.93	.75	1.11
	DCD Adjusted	2.04	.76	1.15
1988-89	Unadjusted	1.27	.80	1.15
	DCD Adjusted	1.45	.79	1.17
	GCEI Adjusted	1.63	.79	1.17
1990-91	Unadjusted	1.60	.77	1.16
	DCD Adjusted	1.89	.74	1.17
	GCEI Adjusted	2.12	.73	1.21
1992-93	Unadjusted	2.04	.75	1.17
	DCD Adjusted	2.24	.72	1.17
	GCEI Adjusted	2.62	.71	1.21
1994-95	Unadjusted	1.82	.76	1.17
	DCD Adjusted	2.06	.75	1.20
	GCEI Adjusted	2.24	.72	1.21
1996-97	Unadjusted	1.65	.77	1.13
	DCD Adjusted	1.86	.75	1.15
	GCEI Adjusted	2.04	.75	1.21
1998-99	Unadjusted	2.65	.75	1.14
	DCD Adjusted	2.88	.74	1.17
	GCEI Adjusted	3.06	.73	1.22
	CWI Adjusted	3.30	.73	1.26
2000-01	Unadjusted	2.47	.75	1.13
	DCD Adjusted	2.72	.75	1.17
	GCEI Adjusted	3.14	.73	1.21
	CWI Adjusted	3.17	.74	1.22
2002-03	Unadjusted	3.63	.71	1.15
	DCD Adjusted	3.96	.74	1.22
	GCEI Adjusted	4.14	.72	1.26
	CWI Adjusted	4.30	.72	1.35
2004-05	Unadjusted	2.80	.73	1.19
	DCD Adjusted	3.10	.73	1.21
	GCEI Adjusted	3.37	.70	1.25
	CWI Adjusted	3.59	.70	1.31
2006-07	Unadjusted	2.56	.66	1.17
	DCD Adjusted	2.72	.66	1.20
	GCEI Adjusted	3.05	.65	1.26
	CWI Adjusted	3.38	.67	1.37
2008-09	Unadjusted	2.11	.67	1.21
	DCD Adjusted	2.24	.68	1.27
	GCEI Adjusted	2.62	.67	1.33
	CWI Adjusted	2.98	.68	1.42

Figure 15: Federal Range Ratio of Total State Revenues per Pupil, 1982-2008



inequitable. The declines subsequent to 2002-03 show them moving to a more equitable position.

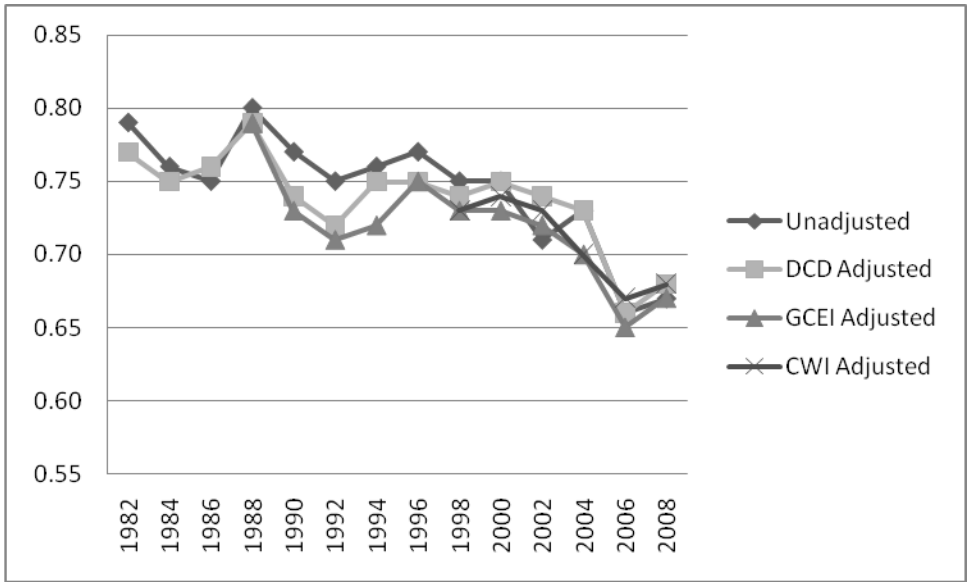
Unadjusted Total State Revenues per Pupil were distributed least equitably in 2002-03 when the measure of distributional equity is the federal range ratio. They were most equitable in the first year of the study in 1982-83.

McLoone Index

The McLoone index of total state revenues is displayed in a column format in Table 26. Graphical illustrations of the McLoone index of state revenues are shown in Figure 16.

The McLoone indexes peak in 1988-89 at 0.80 for Unadjusted Total State Revenue per Pupil and 0.79 for both DCD and GCEI Adjusted Total State Revenue per Pupil. A higher McLoone value indicates a higher level of equity. The McLoone values

Figure 16: McLoone Index of Total State Revenues per Pupil, 1982-2008



Are at their lowest, most inequitable, in 2006-07 at 0.65 for GCEI Adjusted Total State Revenue per Pupil, 0.66 for both Unadjusted and DCD Adjusted Total State Revenue per Pupil, and 0.67 for CWI Adjusted Total State Revenue per Pupil.

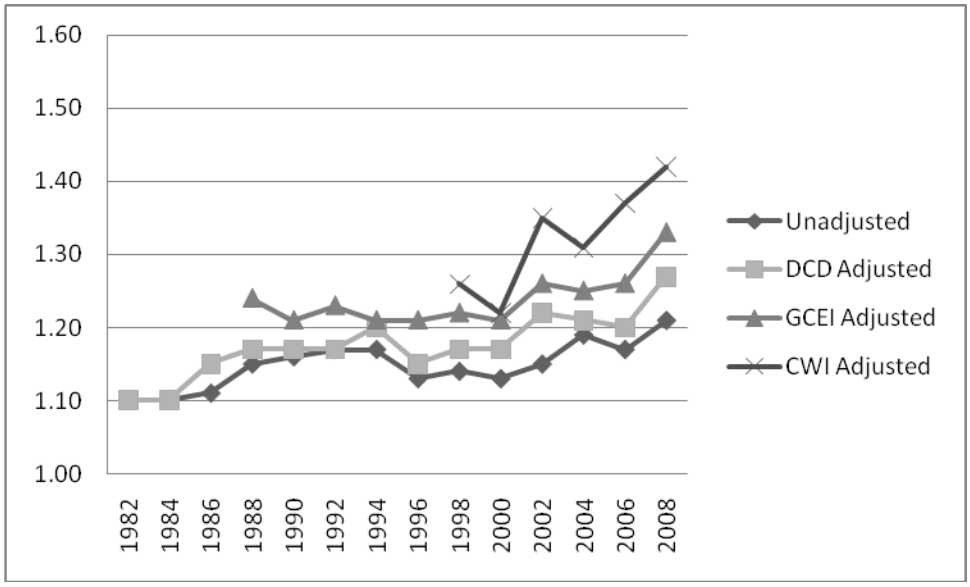
School districts whose Unadjusted Total State Revenue per Pupil fell below the state mean were treated most equitably by the Florida Education Finance Program in 1988-89. These same districts were treated least equitably in 2006-07.

Verstegen Index

The Verstegen index of total state revenues is displayed in a column format in Table 26. Graphical illustrations of the Verstegen index range of state revenues are shown in Figure 17.

The Verstegen index is at its lowest value for each revenue type in 1982-83 and 1984-85, the first two years of the study. A lower Verstegen index represents a greater

Figure 17: Verstegen Index of Total State Revenues per Pupil, 1982-2008



level of equity. As the Verstegen index grows throughout the study period, equity decreases.

School districts whose Unadjusted Total State Revenue per Pupil was above the state mean were treated most equitably by the Florida Education Finance Program in 1982-83. These same districts were treated least equitably in 2008-09.

Total Local Revenue Measures

Tables 27 and 28 show the framework for evaluating the distribution of total local revenues. Tables 27 and 28 are populated with data from the current study. Fourteen years worth of data is displayed. Table 27 displays the percentile ranks of total local revenues at the 100th, 95th, 75th, 50th, 25th, 5th and 1st percentiles. Table 28 displays the range, restricted range, mean, standard deviation, and coefficient of variation. Unadjusted Total Local Revenue and District Cost Differential (DCD) Adjusted Total

Table 27: Percentile Distribution of Total Local Revenues per Pupil, 1982-2008

Year	Revenue Type	100th	95th	75th	50th	25th	5th	1st
1982-83	Unadjusted	1203.03	1065.78	562.45	349.52	219.25	132.74	111.02
	DCD Adjusted	1189.12	1007.82	580.69	360.19	226.18	137.75	116.02
1984-85	Unadjusted	1809.80	1373.62	715.26	459.69	276.19	150.70	134.30
	DCD Adjusted	1800.26	1379.03	729.14	473.58	285.83	159.84	140.52
1986-87	Unadjusted	2198.94	1757.28	948.06	650.11	365.65	195.11	166.81
	DCD Adjusted	2179.11	1784.80	965.56	661.15	383.69	205.73	174.31
1988-89	Unadjusted	2811.55	2283.22	1316.34	833.86	454.84	280.91	209.23
	DCD Adjusted	2631.78	2224.06	1320.96	869.44	476.67	287.37	217.90
	GCEI Adjusted	2908.85	2323.30	1356.49	880.50	525.27	321.91	246.89
1990-91	Unadjusted	3780.38	2780.16	1554.61	1055.00	534.63	329.88	257.88
	DCD Adjusted	3432.65	2694.96	1569.37	1104.36	569.57	355.16	278.90
	GCEI Adjusted	3635.06	2745.98	1557.43	1101.53	619.56	387.46	296.60
1992-93	Unadjusted	3769.39	2883.47	1655.82	1090.02	626.15	375.95	295.32
	DCD Adjusted	3059.32	2588.19	1485.11	1005.19	599.06	352.52	279.21
	GCEI Adjusted	3624.49	2990.47	1728.14	1184.50	724.91	427.15	339.49
1994-95	Unadjusted	3965.77	3143.77	1703.89	1172.77	675.90	423.62	344.86
	DCD Adjusted	3277.41	2848.87	1599.96	1098.00	649.06	416.02	336.85
	GCEI Adjusted	3950.98	3325.29	1894.83	1261.58	797.27	493.64	422.70
1996-97	Unadjusted	4087.73	3290.43	1835.73	1201.06	761.05	476.52	375.45
	DCD Adjusted	3745.74	3241.46	1883.86	1245.09	808.12	503.80	403.51
	GCEI Adjusted	4072.48	3483.41	1938.42	1321.62	908.26	556.13	460.25
1998-99	Unadjusted	4516.42	3686.64	2017.09	1345.93	934.10	608.48	417.14
	DCD Adjusted	4200.93	3760.45	2050.15	1397.79	970.05	641.30	445.59
	GCEI Adjusted	4499.57	4078.71	2174.47	1499.95	1067.30	718.67	511.36
	CWI Adjusted	5024.94	4875.37	2443.13	1695.06	1246.85	746.29	539.69
2000-01	Unadjusted	4824.27	4018.70	2161.28	1522.88	989.63	664.75	470.34
	DCD Adjusted	4468.67	4071.99	2152.49	1554.91	1042.09	708.87	504.50
	GCEI Adjusted	4817.36	4308.16	2242.43	1607.52	1125.64	801.41	566.21
	CWI Adjusted	4908.20	4325.00	2281.50	1610.51	1146.72	738.27	522.51
2002-03	Unadjusted	4982.58	4513.42	2344.38	1684.44	1035.26	672.27	513.30
	DCD Adjusted	4806.80	4594.60	2375.30	1727.28	1103.53	720.67	549.77
	GCEI Adjusted	5660.01	4871.70	2472.69	1767.45	1194.13	839.52	609.07
	CWI Adjusted	5645.59	4449.84	2263.31	1666.86	1288.35	818.64	544.54
2004-05	Unadjusted	5378.93	4773.35	2549.39	1817.54	1182.17	682.47	570.60
	DCD Adjusted	5250.82	4809.49	2573.37	1889.19	1218.06	720.30	601.65
	GCEI Adjusted	6173.24	5201.80	2800.93	2009.59	1307.85	817.71	700.09
	CWI Adjusted	5746.07	4618.27	2496.13	1691.76	1273.11	731.95	563.65
2006-07	Unadjusted	6448.29	5430.15	3543.27	2207.04	1601.34	796.85	603.56
	DCD Adjusted	6642.67	5680.05	3621.19	2236.59	1647.28	819.36	650.64
	GCEI Adjusted	7641.71	6260.07	3884.53	2384.72	1817.37	962.08	739.93
	CWI Adjusted	7112.94	5563.57	3219.85	2108.49	1601.21	848.49	632.41
2008-09	Unadjusted	6408.27	5399.07	4189.70	2831.99	1908.50	1024.14	769.29
	DCD Adjusted	6647.99	5613.99	4208.01	2802.90	1993.80	1082.22	828.49
	GCEI Adjusted	7389.74	6141.95	4382.63	3046.45	2220.37	1236.76	940.90
	CWI Adjusted	6878.40	5601.25	3688.03	2778.79	2055.68	1130.46	871.14

Table 28: Measures of the Variation in the Distribution of Total Local Revenues per Pupil, 1982-2008

Year	Revenue Type	Range	Restricted Range	Mean	Standard Deviation	Coefficient of Variation
1982-83	Unadjusted	1094.69	933.04	434.66	291.81	.67
	DCD Adjusted	1075.47	870.08	439.35	285.86	.65
1984-85	Unadjusted	1676.24	1222.92	576.39	396.30	.69
	DCD Adjusted	1660.70	1219.20	586.64	388.08	.68
1986-87	Unadjusted	2037.56	1562.16	771.42	511.58	.66
	DCD Adjusted	2012.42	1579.07	783.24	501.66	.64
1988-89	Unadjusted	2604.75	2012.31	995.98	646.26	.65
	DCD Adjusted	2417.37	1936.69	1011.50	628.56	.62
	GCEI Adjusted	2666.76	2001.39	1056.89	651.85	.62
1990-91	Unadjusted	3535.63	2450.27	1206.26	810.48	.67
	DCD Adjusted	3172.17	2339.80	1233.80	782.45	.63
	GCEI Adjusted	3345.84	2358.53	1263.81	784.89	.62
1992-93	Unadjusted	3499.76	2507.53	1276.92	829.58	.65
	DCD Adjusted	2804.40	2235.67	1169.18	772.83	.62
	GCEI Adjusted	3305.87	2563.31	2563.31	806.09	.60
1994-95	Unadjusted	3642.16	2720.15	1377.84	867.32	.63
	DCD Adjusted	2962.83	2432.85	1282.40	763.29	.60
	GCEI Adjusted	3556.01	2831.64	1488.02	866.02	.58
1996-97	Unadjusted	3753.54	2813.91	1428.84	862.35	.60
	DCD Adjusted	3389.57	2737.66	1464.76	834.70	.57
	GCEI Adjusted	3664.59	2927.29	1547.92	866.15	.56
1998-99	Unadjusted	4148.43	3080.16	1608.78	972.24	.60
	DCD Adjusted	3810.44	3119.15	1648.98	949.82	.58
	GCEI Adjusted	4050.43	3360.03	1747.30	995.13	.57
	CWI Adjusted	4495.23	4129.07	2051.59	1190.70	.58
2000-01	Unadjusted	4386.72	3353.95	1703.49	1016.05	.60
	DCD Adjusted	3998.89	3363.12	1751.58	998.41	.57
	GCEI Adjusted	4283.33	3506.75	1852.91	1046.20	.56
	CWI Adjusted	4401.69	3586.73	1902.67	1097.50	.58
2002-03	Unadjusted	4514.29	3841.15	1908.13	1128.61	.59
	DCD Adjusted	4301.24	3873.93	1965.12	1120.40	.57
	GCEI Adjusted	5088.45	4032.18	2078.91	1180.06	.57
	CWI Adjusted	5148.16	3631.20	2016.18	1159.69	.58
2004-05	Unadjusted	4891.32	4090.88	2117.12	1263.91	.60
	DCD Adjusted	4732.59	4089.19	2173.18	1263.18	.58
	GCEI Adjusted	5578.10	4384.09	2308.57	1334.02	.58
	CWI Adjusted	5193.35	3886.31	2092.59	1219.68	.58
2006-07	Unadjusted	5928.37	4633.20	2663.58	1567.03	.59
	DCD Adjusted	6105.56	4860.69	2723.46	1586.11	.58
	GCEI Adjusted	7007.14	5298.00	2900.88	1650.00	.57
	CWI Adjusted	6523.59	4714.68	2631.14	1519.78	.58
2008-09	Unadjusted	5645.73	4378.92	3061.04	1479.06	.48
	DCD Adjusted	5848.12	4531.76	3144.15	1491.80	.47
	GCEI Adjusted	6453.21	4905.19	3342.27	1539.80	.46
	CWI Adjusted	6017.58	4470.79	3030.88	1421.22	.47

Local Revenue is shown for all fourteen years. Beginning in 1988-89, total local revenue is shown adjusted by the Geographic Cost of Education Index (GCEI). The Comparable Wage Index (CWI) is first shown as an adjustment to total local revenue in 1998-99.

Percentile Ranks

The percentile ranks in Table 27 show increases in the majority of the years by measure over the previous year. The only year where there was a consistent reduction in revenue was in 2008-09 and that was only at the highest percentiles.

At the highest levels, 100th and 95th percentiles, total local revenues grew in each year from 1982-83 through 1990-91. This was true of all revenue measures during the period. In 1992-93, Unadjusted and GCEI Adjusted Total Local Revenue per Pupil decreased at the 100th percentile, DCD Adjusted Total Local Revenue per Pupil decreases at both the 100th and 95th percentiles. The period from 1994-95 through 2006-07 again showed constant growth with the exception of 2000-01 when CWI Adjusted Total Local Revenue per Pupil decreased at both the 100th and 95th percentiles. In 2008-09, revenues decreased in every area except DCD Adjusted Total Local Revenue per Pupil at the 100th percentile where it was flat.

At the intermediate levels; 75th, 50th, and 25th percentiles, revenues grew consistently throughout the fourteen years of the study. During the time of the study, there was not a single year where more than one revenue type showed decreases. In 1992-93, DCD Adjusted Total Local Revenue per Pupil decreased at the 75th and 50th percentile. DCD Adjusted Total Local Revenue per Pupil decreased again in 2008-09, but only at the 75th percentile. CWI Adjusted Total Local Revenue per Pupil decreased at

the 75th, 50th, and 25th percentiles during 2000-01, the 75th percentile in 2002-03, and the 75th and 25th percentiles in 2004-05.

At the lowest levels, 5th and 1st percentiles, total local revenues were the most consistent. Revenues at the 1st percentile only decreased in 2000-01 when measured by the CWI adjustment. DCD Adjusted Total Local Revenue per Pupil decreased only once at the 5th percentile, in 1992-93. CWI Adjusted Total Local Revenue per Pupil decreased twice during the period at the 5th percentile, 2000-01 and 2004-05. The only decrease to GCEI Adjusted Total State and Local at the 5th percentile occurred in 2004-05.

Range and Restricted Range

The range and restricted range of total local revenues is displayed in a column format in Table 28. Graphical illustrations of the range and restricted range of state revenues are shown in Figures 18 through 23.

Figure 18 shows a multiple line graph of the range and restricted range of Unadjusted Local Revenue per Pupil. The range and restricted range move consistently with each other peaking in 1990-91. After the peak in 1990-91, there is a slight decrease before climbing steadily to a second peak in 2006-07. The range and restricted range decrease for a second time in 2008-09.

Figure 18: Range and Restricted Range of Unadjusted Total Local Revenue per Pupil, 1982-2008

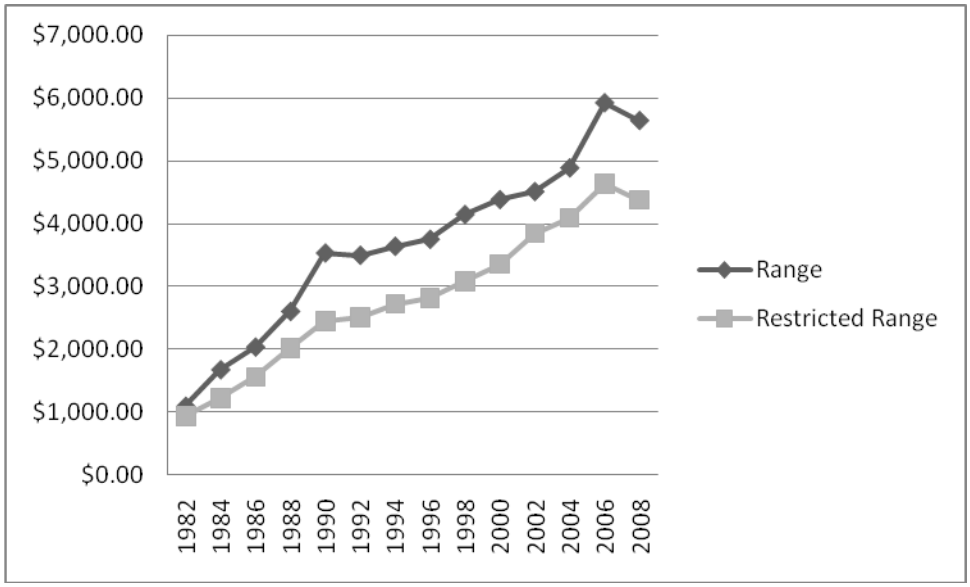


Figure 19 shows a multiple line graph of the range and restricted range of DCD Adjusted Total Local Revenue per Pupil. The range and restricted range of DCD Adjusted Total Local Revenue per Pupil act in an identical manner as the Unadjusted Total Local Revenue per Pupil. The range and restricted range move consistently with each other peaking in 1990-91. After the peak in 1990-91, there is a slight decrease before climbing steadily to a second peak in 2006-07. The range and restricted range decrease for a second time in 2008-09.

Figure 19: Range and Restricted Range of DCD Adjusted Total Local Revenue per Pupil, 1982-2008

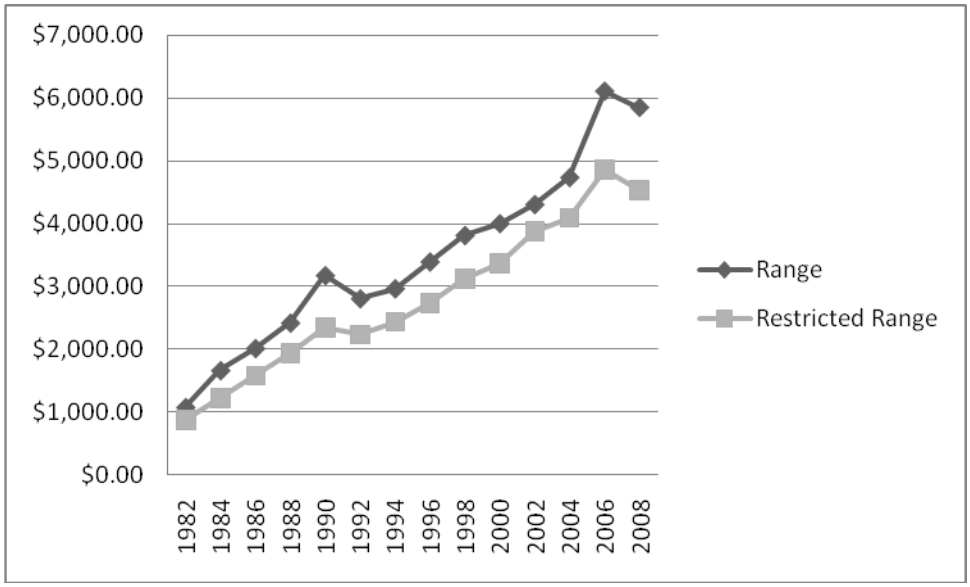


Figure 20 shows a multiple line graph of the range and restricted range of CWI Adjusted Local Revenue per Pupil. Unlike figures 18 and 19 that show fourteen data points, Figure 20 has only six. The range and restricted range of CWI Adjusted Local Revenue per Pupil do not mirror each other in the same manner that the Unadjusted and DCD Adjusted Total Local Revenues per Pupil do. In 1998-99, the range and restricted range are only $366.16 per pupil apart. In 2000-01, both the range and restricted range decrease, but the difference between them increases to $814.96 per pupil. In 2002-04, the range and restricted range begin to increase, but the difference between them again expands. The difference between the range and restricted range in 2002-04 is $1516.96. This separation remains relatively consistent through the end of the study period in 2008-09. The range and restricted range of local revenues increase until their peak in 2006-07.

Figure 20: Range and Restricted Range of CWI Adjusted Total Local Revenue per Pupil, 1998-2008

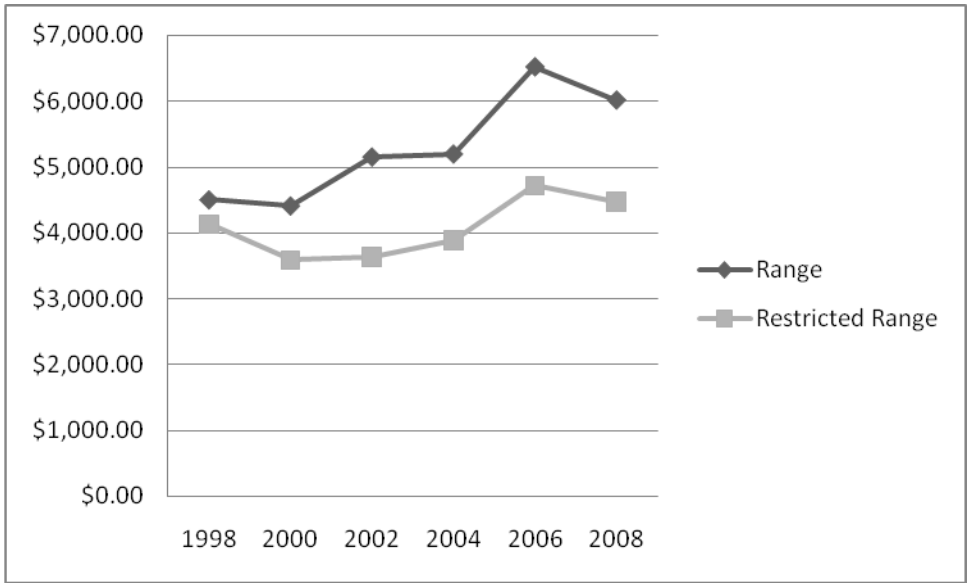


Figure 21 shows a multiple line graph of the range and restricted range of GCEI Adjusted Total Local Revenue per Pupil. The range and restricted range of GCEI Adjusted Total Local Revenue per Pupil returns to the pattern displayed by the Unadjusted and DCD Adjusted Total Local Revenues per Pupil. The range and restricted range move consistently with each other peaking in 1990-91. After the peak in 1990-91, there is a slight decrease before climbing steadily to a second peak in 2006-07. The range and restricted range decrease for a second time in 2008-09.

Figure 21: Range and Restricted Range of GCEI Adjusted Total Local Revenue per Pupil, 1988-2008

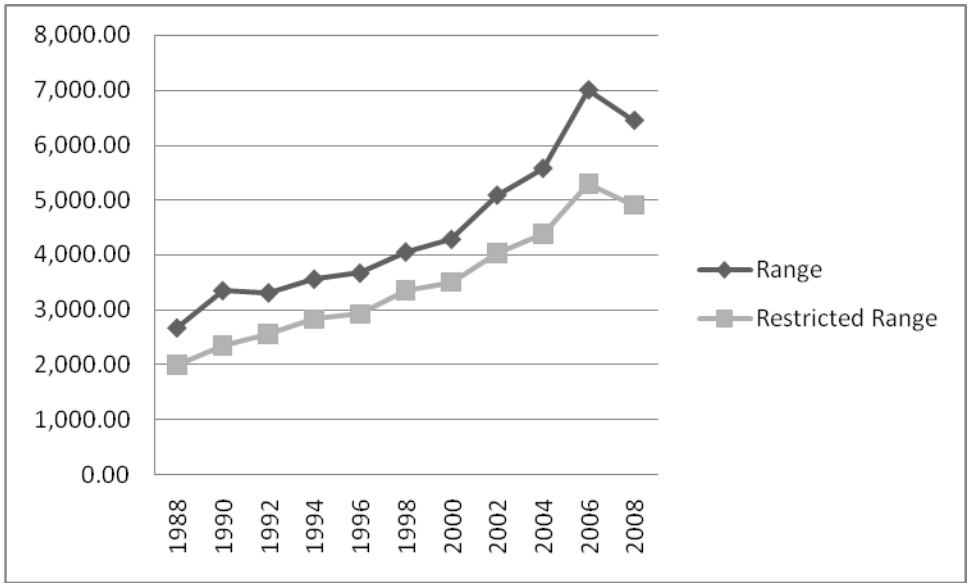


Figure 22 is a compilation of the ranges of each revenue type. This multiple line graph shows the range for unadjusted, DCD Adjusted, GCEI Adjusted, and CWI Adjusted Total Local Revenue. This graph clearly shows the pattern that has been discussed previously. For each revenue type there is a peak in 1990-91 and a second peak in 2006-07.

Figure 22: Range of Total Local Revenues per Pupil, 1982-2008

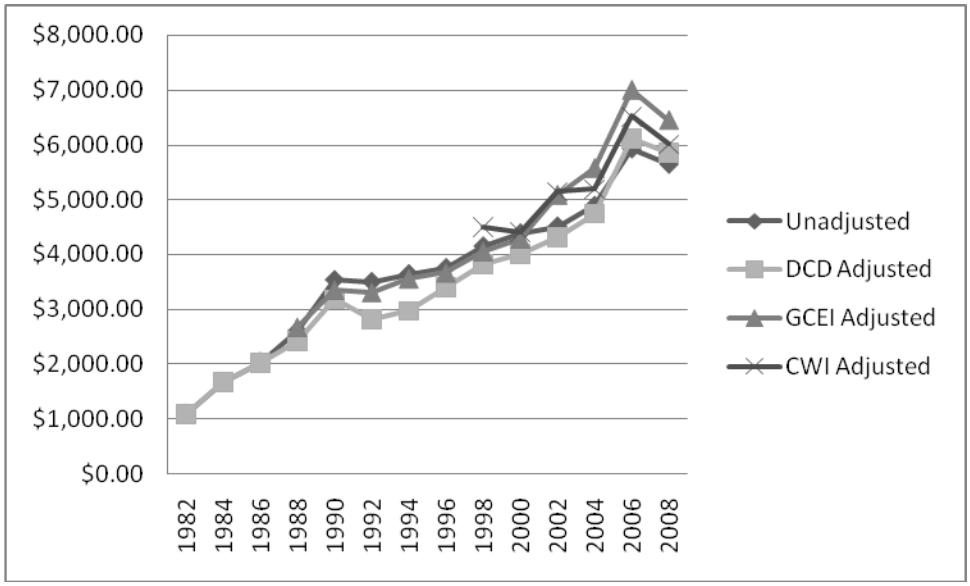
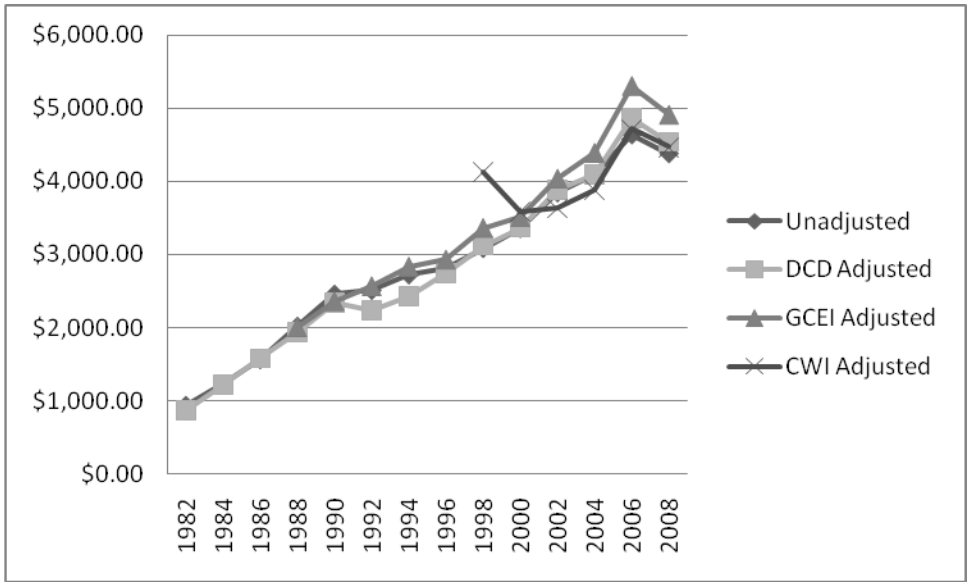


Figure 23 is also a compilation, this time of the restricted range. The same comments hold true for the restricted range as the range. The restricted ranges show similar trends with the exception of an outlier in 1998-99. This outlier was also evident when examining the restricted ranges of total revenues in Figure 13.

Figure 23: Restricted Range of Total Local Revenues per Pupil, 1982-2008



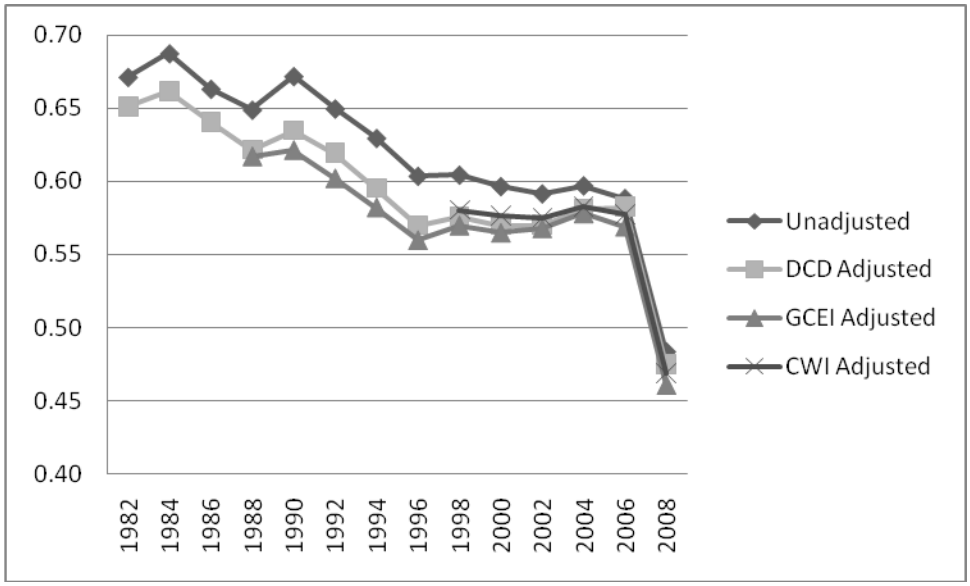
Coefficient of Variation

The coefficient of variation of total local revenues is displayed in a column format in Table 28. A graphical illustration of the coefficient of variation of total local revenues is shown in Table 24.

The coefficient of variation for total local revenues shows a general downward trend throughout the study period. There is a remarkable drop-off in the final year, 2008-09. As the coefficient of variation decreases, the distribution of revenues is considered to be more equitable. In its best year, 2008-09, the coefficients of variation range from 0.46 to 0.48.

The distribution of Unadjusted Total Local Revenues per Pupil became more equitable as the study progressed. Unadjusted Total Local Revenues per Pupil were distributed most equitably in 2008-09 and least equitably in 1984-85.

Figure 24: Coefficient of Variation of Total Local Revenues per Pupil, 1982-2008



Federal Range Ratio

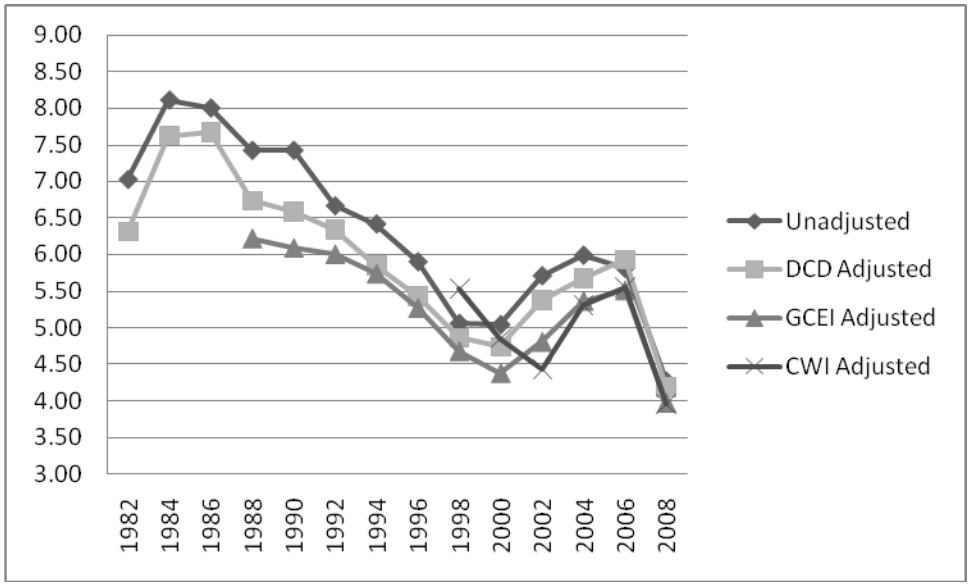
The federal range ratio of total local revenues is displayed in a column format in Table 29. A graphical illustration of the federal range ratio of local revenues is shown in Figure 25.

Like the coefficient of variation, decreases in the federal range ratio is interpreted to demonstrate movement to a more equitable position. For each revenue type, the federal range ratio is at its lowest point in the last years of the study. The federal range ration of Unadjusted Total Local Revenue per Pupil begins at 7.03 in 1982-83 before peaking at 8.12 in 1984-85. The values decrease each year through1998-99 before rising to a second peak in 2004-05. The values fall dramatically for the final year of the study to 4.27. That pattern of values for the unadjusted revenues is repeated for the DCD Adjusted, CWI Adjusted, and GCEI Adjusted revenues per pupil.

Table 29: Additional Measures of the Variation in the Distribution of Total Local Revenues per Pupil, 1982-2008

Year	Revenue Type	Federal Range Ratio	McLoone Index	Verstegen Index
1982-83	Unadjusted	7.03	.64	1.84
	DCD Adjusted	6.32	.64	1.80
1984-85	Unadjusted	8.12	.64	1.86
	DCD Adjusted	7.63	.65	1.82
1986-87	Unadjusted	8.01	.61	1.76
	DCD Adjusted	7.68	.62	1.75
1988-89	Unadjusted	7.43	.61	1.77
	DCD Adjusted	6.74	.61	1.71
	GCEI Adjusted	6.22	.65	1.75
1990-91	Unadjusted	7.43	.58	1.70
	DCD Adjusted	6.59	.59	1.64
	GCEI Adjusted	6.09	.62	1.67
1992-93	Unadjusted	6.67	.61	1.73
	DCD Adjusted	6.34	.62	1.70
	GCEI Adjusted	6.00	.63	1.63
1994-95	Unadjusted	6.42	.63	1.72
	DCD Adjusted	5.85	.65	1.68
	GCEI Adjusted	5.74	.67	1.68
1996-97	Unadjusted	5.91	.67	1.70
	DCD Adjusted	5.43	.69	1.66
	GCEI Adjusted	5.26	.70	1.64
1998-99	Unadjusted	5.06	.68	1.71
	DCD Adjusted	4.86	.69	1.66
	GCEI Adjusted	4.68	.70	1.63
	CWI Adjusted	5.53	.72	1.62
2000-01	Unadjusted	5.08	.65	1.59
	DCD Adjusted	4.74	.67	1.58
	GCEI Adjusted	4.38	.70	1.60
	CWI Adjusted	4.86	.71	1.65
2002-03	Unadjusted	5.71	.65	1.61
	DCD Adjusted	5.38	.67	1.60
	GCEI Adjusted	4.80	.71	1.64
	CWI Adjusted	4.44	.73	1.68
2004-05	Unadjusted	5.99	.66	1.66
	DCD Adjusted	5.68	.67	1.63
	GCEI Adjusted	5.36	.68	1.61
	CWI Adjusted	5.31	.73	1.74
2006-07	Unadjusted	5.81	.66	1.75
	DCD Adjusted	5.93	.67	1.75
	GCEI Adjusted	5.51	.69	1.73
	CWI Adjusted	5.55	.71	1.78
2008-09	Unadjusted	4.27	.66	1.50
	DCD Adjusted	4.19	.69	1.55
	GCEI Adjusted	3.97	.70	1.50
	CWI Adjusted	3.95	.70	1.48

Figure 25: Federal Range Ratio of Total Local Revenues per Pupil, 1982-2008



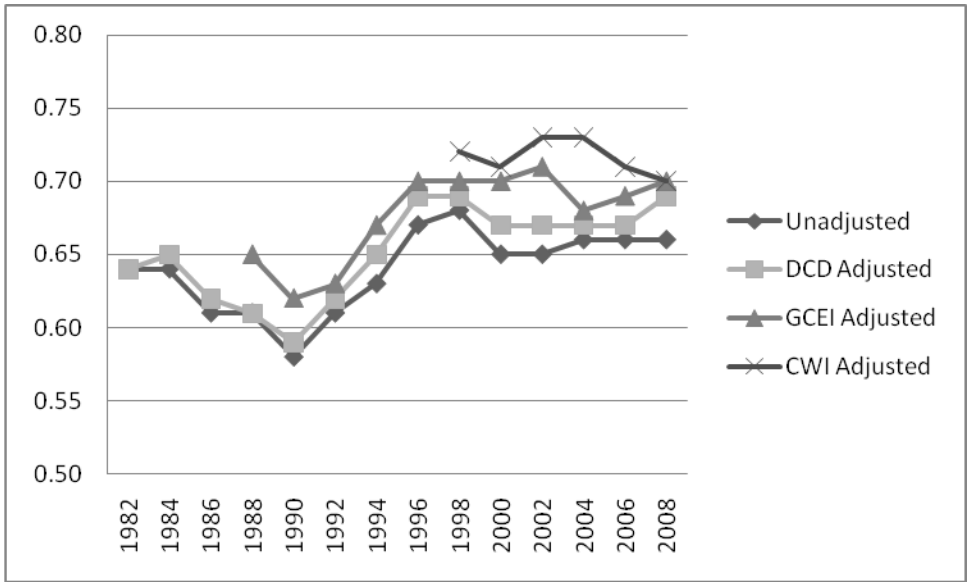
Unadjusted Total Local Revenues per Pupil were distributed most equitably in 2008-09 when the measure of distributional equity is the federal range ratio. They were distributed least equitably in 1984-85.

McLoone Index

The McLoone index of total local revenues is displayed in a column format in Table 29. A graphical illustration of the McLoone index of local revenues is shown in Figure 26.

As shown in Figure 26, the McLoone indexes decrease for the first five sample years. A decrease in the McLoone index shows a reduction in equity. The McLoone indexes begin five year climb in 1992-93. From 1998-99 through the end of the study period in 2008-09 the McLoone index values fluctuated in a tight range between 0.65 and 0.70 with the exception of the CWI adjusted values.

Figure 26: McLoone Index of Total Local Revenues per Pupil, 1982-2008



School districts whose Unadjusted Total Local Revenue per Pupil fell below the state mean were treated most equitably by the Florida Education Finance Program in 1998-99 These same districts were treated least equitably in 1990-91.

Verstegen Index

The Verstegen Index of total local revenues is displayed in a column format in Table 29. A graphical illustration of the Verstegen Indexes of local revenues is shown in Figure 27.

After peaking in 2006-07, the Verstegen Index is at its lowest value for the entire study period for each revenue type in 2008-09. As the Verstegen decreases, equity increases. The Verstegen Index shows that local revenues were most equitably distributed in the final year.

Figure 27: Verstegen Index of Total Local Revenues per Pupil, 1982-2008

School districts whose Unadjusted Total Local Revenue per Pupil was above the state mean were treated most equitably by the Florida Education Finance Program in 2008-09. These same districts were treated least equitably in 1982-83.

Total State and Local Revenue Measures

Tables 30 and 31 show the framework for evaluating the distribution of total state and local revenue. Tables 30 and 31 are populated with data from the current study. Fourteen years worth of data is displayed. Table 30 displays the percentile ranks of total state revenues at the 100th, 95th, 75th, 50th, 25th, 5th and 1st percentiles. Table 31 displays the range, restricted range, mean, standard deviation, and coefficient of variation. Unadjusted total state and local revenue and District Cost Differential (DCD) Adjusted Total State and Local Revenue is shown for all fourteen years. Beginning in 1988-89, total state and local revenue is shown adjusted by the Geographic Cost of Education

Table 30: Percentile Distribution of Total State and Local Revenue per Pupil, 1982-2008

Year	Revenue Type	100th	95th	75th	50th	25th	5th	1st
1982-83	Unadjusted	1907.88	1853.29	1734.82	1695.85	1664.79	1633.15	1619.56
	DCD Adjusted	1944.05	1852.52	1765.66	1735.51	1714.38	1690.19	1677.45
1984-85	Unadjusted	2244.22	2184.47	2093.19	2051.16	1997.40	1945.40	1928.62
	DCD Adjusted	2267.03	2220.47	2144.57	2104.32	2076.03	2043.46	2023.83
1986-87	Unadjusted	2809.45	2666.13	2524.13	2466.00	2401.80	2312.83	2262.09
	DCD Adjusted	2712.16	2633.38	2581.15	2529.36	2497.05	2423.16	2389.04
1988-89	Unadjusted	4055.59	3727.80	3546.61	3443.77	3343.29	3245.13	3199.52
	DCD Adjusted	3940.64	3856.11	3704.17	3545.03	3448.04	3314.16	3304.51
	GCEI Adjusted	4525.02	4258.22	4026.36	3752.17	3535.82	3373.43	3209.70
1990-91	Unadjusted	4582.00	4246.89	4036.59	3918.90	3855.15	3694.40	3658.98
	DCD Adjusted	4582.80	4426.03	4271.69	4102.19	3968.67	3768.25	3711.59
	GCEI Adjusted	5135.89	4837.70	4568.38	4221.18	4025.79	3787.47	3597.64
1992-93	Unadjusted	4603.12	4113.73	3940.63	3803.00	3726.67	3611.50	3559.64
	DCD Adjusted	3912.77	3841.51	3685.99	3535.95	3447.72	3325.22	3271.82
	GCEI Adjusted	4832.09	4705.64	4376.02	4117.17	3898.65	3639.94	3537.85
1994-95	Unadjusted	4842.77	4461.26	4277.62	4118.03	4008.82	3891.34	3820.52
	DCD Adjusted	4339.30	4278.01	4020.86	3942.21	3819.32	3622.06	3586.21
	GCEI Adjusted	5465.15	5309.87	4841.41	4589.15	4376.21	4003.69	3908.56
1996-97	Unadjusted	5088.98	4668.02	4504.40	4365.72	4274.39	4186.85	4186.85
	DCD Adjusted	5084.25	4852.12	4668.58	4590.35	4489.32	4308.53	4243.90
	GCEI Adjusted	5705.59	5483.19	5136.55	4856.36	4639.72	4363.09	4156.59
1998-99	Unadjusted	5382.74	4948.82	4804.50	4658.31	4574.98	4463.35	4461.01
	DCD Adjusted	5260.35	5119.24	4990.54	4899.18	4747.65	4609.36	4569.84
	GCEI Adjusted	5956.81	5875.34	5516.47	5245.83	4944.44	4611.14	4404.77
	CWI Adjusted	8125.52	7582.95	6663.27	5988.81	5562.67	5066.11	4982.31
2000-01	Unadjusted	5707.93	5244.90	5041.36	4956.05	4871.43	4772.49	4744.18
	DCD Adjusted	5485.90	5430.99	5326.22	5193.62	5064.44	4972.16	4836.43
	GCEI Adjusted	6338.29	6196.49	5841.90	5468.05	5311.15	4930.66	4648.24
	CWI Adjusted	7097.45	6871.71	5928.79	5731.53	5277.00	4903.72	4834.68
2002-03	Unadjusted	5926.81	5543.21	5253.54	5099.50	4938.92	4924.40	4868.90
	DCD Adjusted	5804.96	5656.06	5493.09	5305.72	5224.69	5119.19	5024.96
	GCEI Adjusted	6729.93	6429.63	6109.94	5654.59	5463.46	5072.02	4742.30
	CWI Adjusted	7426.65	7013.73	6137.61	5368.69	4936.92	4566.81	4501.70
2004-05	Unadjusted	6696.67	6268.48	5784.55	5648.61	5533.57	5416.49	5351.34
	DCD Adjusted	6560.40	6262.81	6045.92	5867.42	5749.88	5624.74	5582.79
	GCEI Adjusted	7824.36	7129.32	6739.07	6227.55	6028.11	5624.90	5168.09
	CWI Adjusted	7528.00	7235.02	6354.92	5602.96	5121.19	4742.45	4697.42
2006-07	Unadjusted	8189.28	7466.20	6870.75	6716.44	6603.66	6487.26	6397.65
	DCD Adjusted	8279.38	7557.21	7161.08	6878.40	6763.66	6630.44	6587.08
	GCEI Adjusted	9524.58	8639.16	8068.06	7413.25	7165.22	6671.38	6148.33
	CWI Adjusted	9004.87	8799.67	7507.78	6660.08	6047.85	5700.88	5629.45
2008-09	Unadjusted	8381.22	7613.96	7092.61	6934.10	6824.89	6703.07	6548.36
	DCD Adjusted	8645.70	7901.24	7430.34	7147.60	6994.37	6874.06	6813.09
	GCEI Adjusted	9610.35	8919.64	8317.48	7692.19	7389.40	6883.94	6467.58
	CWI Adjusted	9459.99	9027.24	7830.49	7884.38	6257.86	5903.39	5815.95

Table 31: Measures of the Variation in the Distribution of Total State and Local Revenues per Pupil, 1982-2008

Year	Revenue Type	Range	Restricted Range	Mean	Standard Deviation	Coefficient of Variation
1982-83	Unadjusted	293.33	220.14	1710.91	66.51	.04
	DCD Adjusted	276.82	162.33	1748.10	54.99	.03
1984-85	Unadjusted	324.18	239.34	2052.11	75.61	.04
	DCD Adjusted	250.82	177.00	2114.07	53.92	.03
1986-87	Unadjusted	561.21	353.30	2468.75	108.34	.04
	DCD Adjusted	336.28	210.22	2532.90	67.43	.03
1988-89	Unadjusted	901.72	482.68	3466.74	168.66	.05
	DCD Adjusted	640.55	541.95	3568.38	163.97	.05
	GCEI Adjusted	1315.38	884.78	3775.62	310.40	.08
1990-91	Unadjusted	929.12	552.49	3952.36	170.09	.04
	DCD Adjusted	872.79	657.78	4116.86	200.41	.05
	GCEI Adjusted	1546.93	1050.23	4277.14	350.77	.08
1992-93	Unadjusted	1082.99	502.23	3839.52	179.26	.05
	DCD Adjusted	644.20	516.29	3565.89	164.78	.05
	GCEI Adjusted	1318.51	1065.70	4154.96	347.53	.08
1994-95	Unadjusted	1048.80	569.92	4156.46	196.23	.05
	DCD Adjusted	775.60	655.95	3932.59	180.95	.05
	GCEI Adjusted	1617.66	1306.18	4627.44	388.54	.08
1996-97	Unadjusted	902.13	481.16	4404.14	175.41	.04
	DCD Adjusted	853.58	543.60	4584.30	167.19	.04
	GCEI Adjusted	1605.25	1120.10	4901.19	364.77	.07
1998-99	Unadjusted	921.74	485.46	4697.48	176.08	.04
	DCD Adjusted	719.56	509.87	4877.53	156.70	.03
	GCEI Adjusted	1563.08	1264.20	5227.42	378.35	.07
	CWI Adjusted	3162.78	2516.84	6128.48	766.02	.12
2000-01	Unadjusted	970.06	472.41	4987.35	172.23	.03
	DCD Adjusted	681.43	458.83	5191.35	156.17	.03
	GCEI Adjusted	1832.06	1265.83	5550.62	402.34	.07
	CWI Adjusted	2274.21	1967.99	5661.78	542.89	.10
2002-03	Unadjusted	1077.15	618.82	5147.34	203.66	.04
	DCD Adjusted	822.16	536.87	5356.84	179.00	.03
	GCEI Adjusted	2135.43	1357.60	5729.67	443.59	.03
	CWI Adjusted	2929.98	2446.93	5571.04	760.70	.14
2004-05	Unadjusted	1362.27	851.99	5704.88	257.61	.05
	DCD Adjusted	1016.50	638.07	5904.95	221.68	.04
	GCEI Adjusted	2806.75	1504.43	6351.39	526.30	.08
	CWI Adjusted	2838.10	2492.58	5779.17	776.31	.13
2006-07	Unadjusted	1872.00	978.94	6798.87	324.53	.05
	DCD Adjusted	1692.35	926.77	6989.37	337.79	.05
	GCEI Adjusted	3673.67	1967.78	7572.13	670.94	.09
	CWI Adjusted	3424.41	3098.79	6888.87	943.50	.14
2008-09	Unadjusted	1898.87	910.89	7017.22	310.24	.04
	DCD Adjusted	1833.61	1027.18	7256.72	369.91	.05
	GCEI Adjusted	3407.64	2035.70	7814.22	664.79	.09
	CWI Adjusted	3712.95	3123.85	7112.00	982.09	.14

Index (GCEI). The Comparable Wage Index (CWI) is first shown as an adjustment to total state and local revenue in 1998-99.

Percentile Ranks

The percentile ranks in Table 30 show increases in the great majority of the years by measure over the previous years. In 1992-93, there was a consistent decrease in all revenue measures. In 2000-01 and again in 2002-03, revenues showed a decrease in most percentiles when adjusted using the CWI.

At the highest levels, 100th and 95th percentiles, total state and local revenues grew in each year from 1982-83 through 1990-91. In 1992-93, revenue for each revenue type decreased at both percentile levels. The only exception was Unadjusted Total State and Local Revenue at the 100th percentile, which was flat. From 1994-95 through the end of the study in 2008-09, all revenues grew consistently except for CWI Adjusted Total State and Local Revenue which decreased in at both the 100th and 95th percentiles in 2000-01.

At the intermediate levels; 75th, 50th, and 25th percentiles; total state and local revenue grew in each year from 1982-83 through 1990-91 without exception. In 1992-93, revenue for each revenue type decreased at all three percentile levels. From 1994-95 through the end of the study in 2008-09, all revenues grew consistently except for CWI Adjusted Total State and Local Revenue which decreased at all three percentile levels in 2000-01 and at the 50th and 25th percentiles in 2002-03.

At the lowest levels, 5th and 1st percentiles, total state and local revenue grew in each year from 1982-83 through 1990-91 without exception. In 1992-93, revenue for

each revenue type decreased at both percentile levels. From 1994-95 through the end of the study in 2008-09, all revenues grew consistently except for CWI Adjusted Total State and Local Revenue which decreased at the 5th and 1st percentile levels in 2000-01 and 2002-03.

Range and Restricted Range

The range and restricted range of total state and local revenues is displayed in a column format in Table 31. Graphical illustrations of the range and restricted range of total state and local revenues are shown in Figures 28 through 33.

Figure 28 shows a multiple line graph of the range and restricted range of Unadjusted Total State and Local Revenue per pupil. The range and restricted range in Figure 28 are of a similar shape. They increase and decrease at approximately the same times. What is remarkable is that although the shape of each line is reflective of the other, they become increasing separated over the length of the study. In 1982-83 the difference between the range and restricted range is $73.19 by the end of the study in 2008-09 the difference is $987.98.

Figure 28: Range and Restricted Range of Unadjusted Total State and Local Revenue per Pupil, 1982-2008

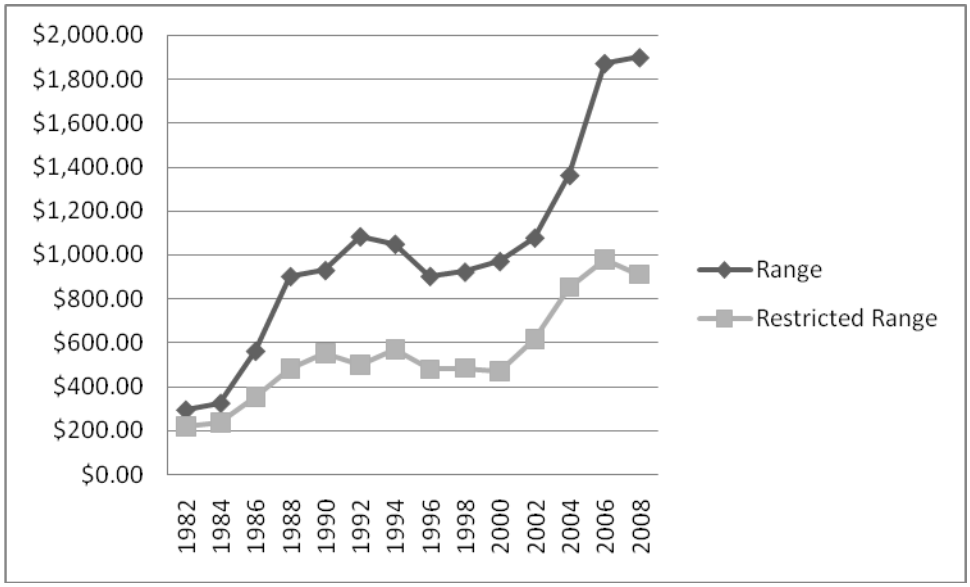


Figure 29 shows a multiple line graph of the range and restricted range of DCD Adjusted Total State and Local Revenue per Pupil. The range and restricted range in Figure 29 are also of a similar shape increasing and decreasing at approximately the same times. As with the unadjusted revenues, they become increasing separated over the length of the study.

Figure 29: Range and Restricted Range of DCD Adjusted Total State and Local Revenue per Pupil, 1982-2008

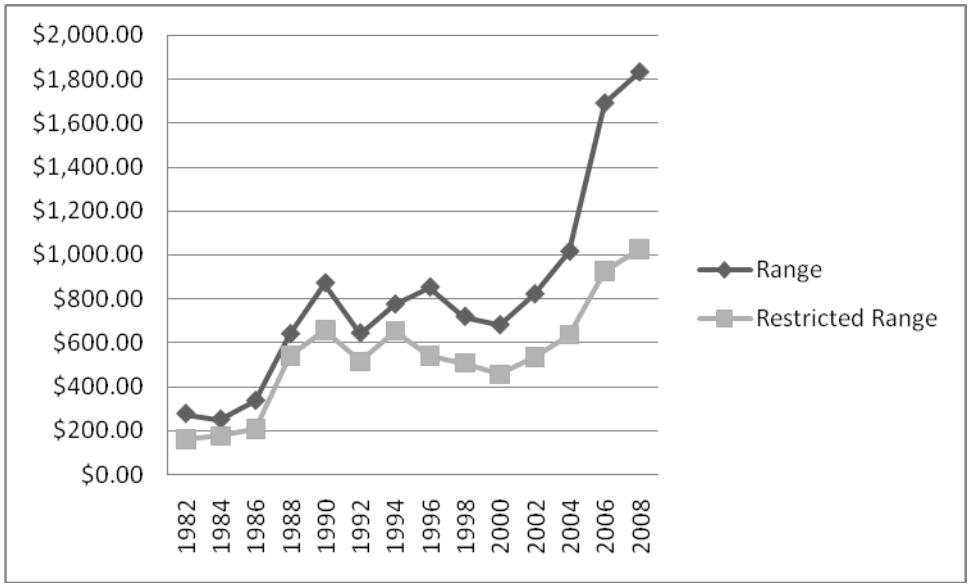


Figure 30 shows a multiple line graph of the range and restricted range of the CWI Adjusted Total State and Local Revenue per Pupil. Unlike Figures 28 and 29 that show fourteen data points, Figure 30 has only six. The range and restricted range of CWI Adjusted Total State and Local Revenue per Pupil do mirror each other, but they do not separate the way the other revenue measures did. The range and restricted range are at their lowest levels in 2000-01 before climbing to their highest levels in 2008-09, the final year of the study.

Figure 30: Range and Restricted Range of CWI Adjusted Total State and Local Revenue per Pupil, 1998-2008

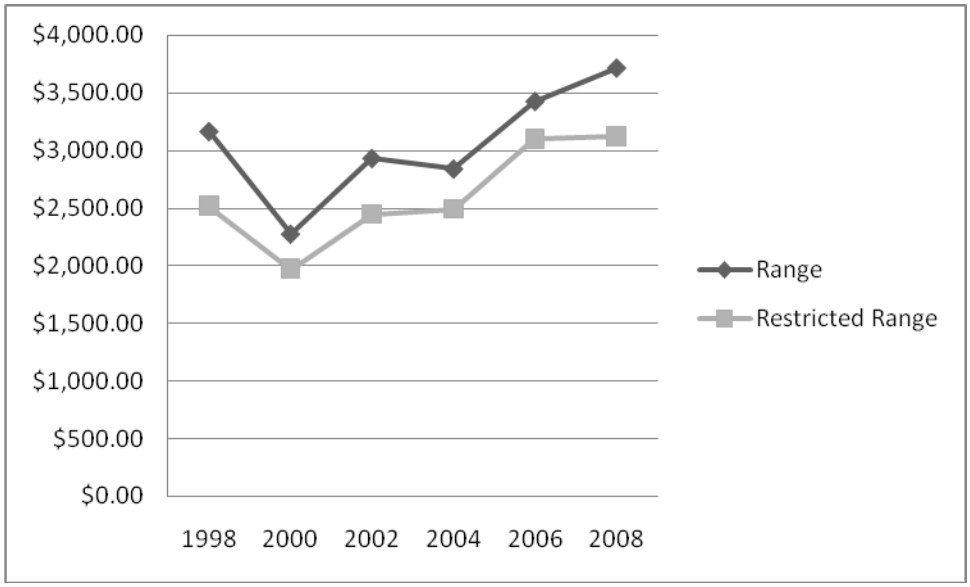


Figure 31 shows a multiple line graph of the range and restricted range of GCEI Adjusted Total State and Local Revenue per Pupil. The range and restricted range in Figure 31 return to the pattern discussed for Figures 28 and 29. The lines mirror each other and gain increasing separation during the length of the study.

Figure 31: Range and Restricted Range of GCEI Adjusted Total State and Local Revenue per Pupil, 1988-2008

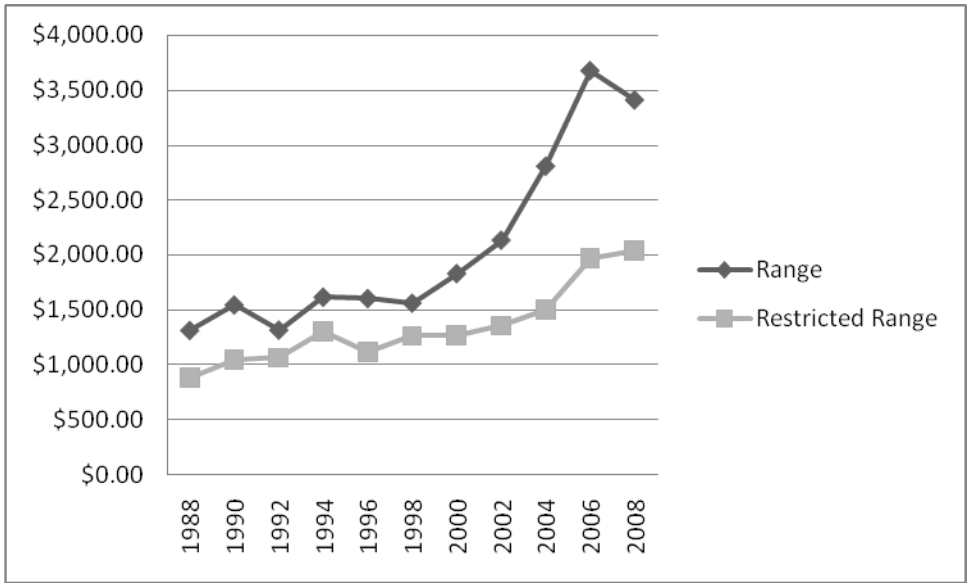


Figure 32 is a compilation of the ranges of each revenue type. The lines representing the unadjusted and DCD adjusted ranges can best be described as intertwined. This demonstrates that the measures are very closely related. The GCEI Adjusted Total State and Local Revenue per Pupil is similar but consistently lies above the unadjusted and DCD adjusted lines. The CWI Adjusted Total State and Local Revenue per Pupil once again demonstrates and outlier in 1998. The figures in subsequent years begin to mirror those of the other measures.

Figure 33 is a compilation of the restricted ranges of each revenue type. The restricted ranges behave in a similar manner to the ranges discuss in Figure 32.

Figure 32: Range of Total State and Local Revenues per Pupil, 1982-2008

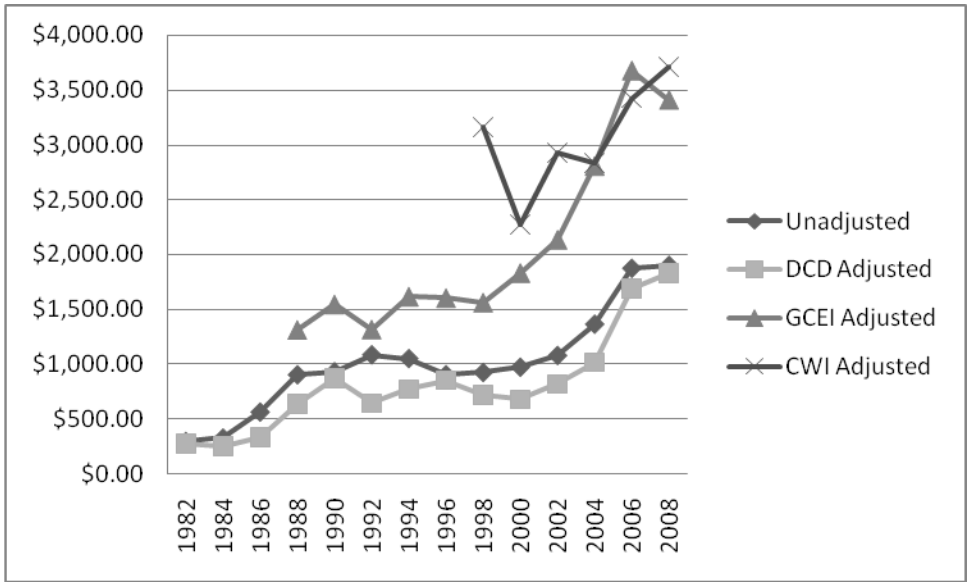
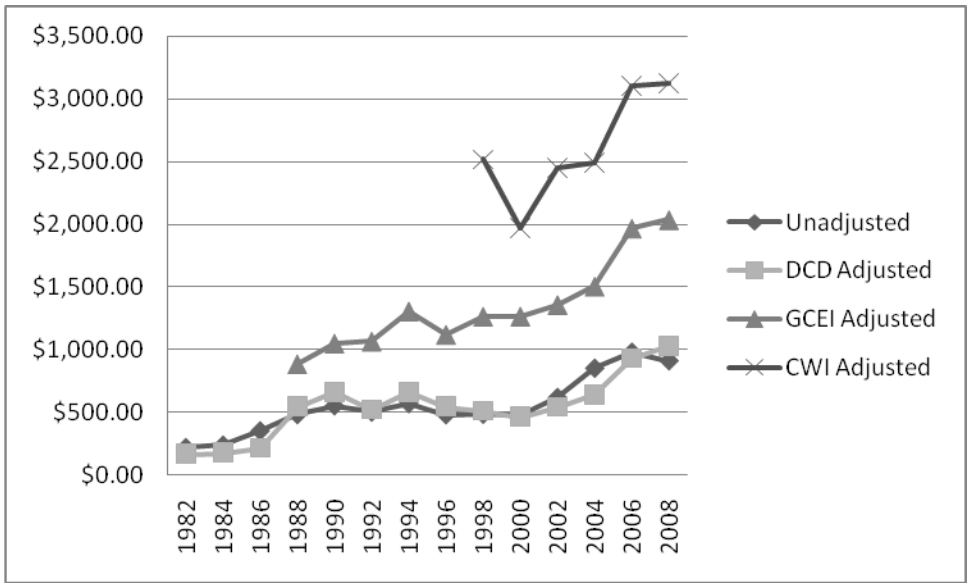


Figure 33: Restricted Range of Total State and Local Revenues per Pupil, 1982-2008

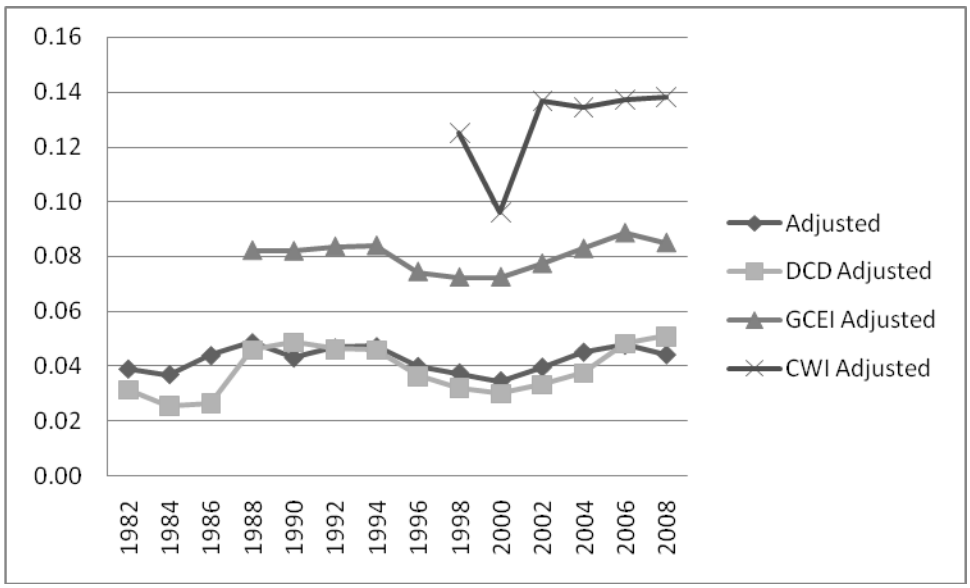


Coefficient of Variation

The coefficient of variation of total state and local revenues is displayed in a column format in Table 31. A graphical illustration of the coefficient of variation of total state and local revenues is shown as Figure 34.

As Figure 34 demonstrates, the coefficients of variation for total state and local revenues fluctuate over time, but in a very tight range. The coefficient of variation is interpreted to show equity as it decreased. A set of data is defined as equitable if it has a coefficient of variation below 0.10. In our study, all of the data points for Unadjusted, DCD Adjusted, and GCEI Adjusted Total State and Local Revenues fall below 0.10. The values for CWI Adjusted Total State and Local Revenue per pupil vary in the first two years before settling into a stable pattern for the final four years at a value slightly below 0.14. The distribution of Unadjusted Total State and Local Revenue per Pupil is never

Figure 34: Coefficient of Variation of Total State and Local Revenues per Pupil, 1982-2008



greater than 0.05 at any point during this study demonstrating an equitable distribution of available resources.

Federal Range Ratio

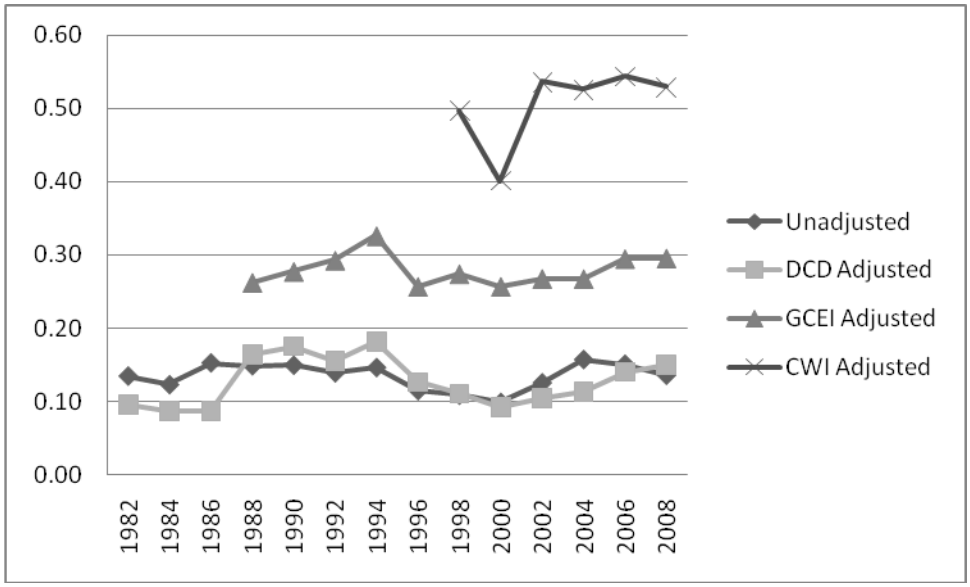
The federal range ratio of total state and local revenue is displayed in a column format in Table 32. A graphical illustration of the federal range ratio of total state and local revenue per pupil is shown as Figure 35.

Figure 35 shows the federal range ratio for total state and local revenues to fluctuate over time in a very tight range. The federal range ratio has a minimum value of zero. As values move away from zero, they show disparity in the set of data. The closer a value is to zero, the more equitable the distribution. For this study, unadjusted revenues and DCD adjusted fluctuate in a very tight range between 0.09 and 0.18. These exceptionally low values are indicative of an equitable distribution of Unadjusted and DCD Adjusted Total State and Local Revenue per Pupil. The values for GCEI Adjusted Total State and Local Revenues per Pupil fluctuate tightly around 0.30. The values for CWI Adjusted Total State and Local Revenue per Pupil vary in the first two years before settling into a stable pattern for the final four years at a value slightly above 0.50. The federal range ratio for Unadjusted Total State and Local Revenue per Pupil is never greater than 0.16 demonstrating an equitable distribution of available resources.

Table 32: Additional Measures of the Variation in the Distribution of Total State and Local Revenues per Pupil, 1982-2008

Year	Revenue Type	Federal Range Ratio	McLoone Index	Verstegen Index
1982-83	Unadjusted	.13	.98	1.04
	DCD Adjusted	.10	.99	1.03
1984-85	Unadjusted	.12	.97	1.03
	DCD Adjusted	.09	.99	1.02
1986-87	Unadjusted	.15	.97	1.03
	DCD Adjusted	.09	.98	1.02
1988-89	Unadjusted	.15	.97	1.04
	DCD Adjusted	.16	.97	1.04
	GCEI Adjusted	.26	.94	1.07
1990-91	Unadjusted	.15	.98	1.04
	DCD Adjusted	.17	.96	1.04
	GCEI Adjusted	.28	.94	1.08
1992-93	Unadjusted	.14	.98	1.04
	DCD Adjusted	.16	.97	1.05
	GCEI Adjusted	.29	.94	1.08
1994-95	Unadjusted	.15	.97	1.05
	DCD Adjusted	.18	.96	1.03
	GCEI Adjusted	.33	.94	1.08
1996-97	Unadjusted	.11	.98	1.04
	DCD Adjusted	.13	.97	1.03
	GCEI Adjusted	.26	.95	1.07
1998-99	Unadjusted	.11	.98	1.04
	DCD Adjusted	.11	.97	1.02
	GCEI Adjusted	.27	.94	1.05
	CWI Adjusted	.50	.92	1.13
2000-01	Unadjusted	.10	.98	1.03
	DCD Adjusted	.09	.97	1.02
	GCEI Adjusted	.26	.96	1.07
	CWI Adjusted	.40	.91	1.06
2002-03	Unadjusted	.13	.98	1.04
	DCD Adjusted	.10	.98	1.04
	GCEI Adjusted	.27	.95	1.07
	CWI Adjusted	.54	.92	1.15
2004-05	Unadjusted	.16	.98	1.04
	DCD Adjusted	.11	.98	1.03
	GCEI Adjusted	.27	.96	1.08
	CWI Adjusted	.53	.92	1.15
2006-07	Unadjusted	.15	.98	1.04
	DCD Adjusted	.14	.98	1.05
	GCEI Adjusted	.29	.95	1.09
	CWI Adjusted	.54	.91	1.15
2008-09	Unadjusted	.14	.98	1.04
	DCD Adjusted	.15	.98	1.05
	GCEI Adjusted	.30	.95	1.08
	CWI Adjusted	.53	.91	1.15

Figure 35: Federal Range Ratio of Total State and Local Revenues per Pupil, 1982-2008

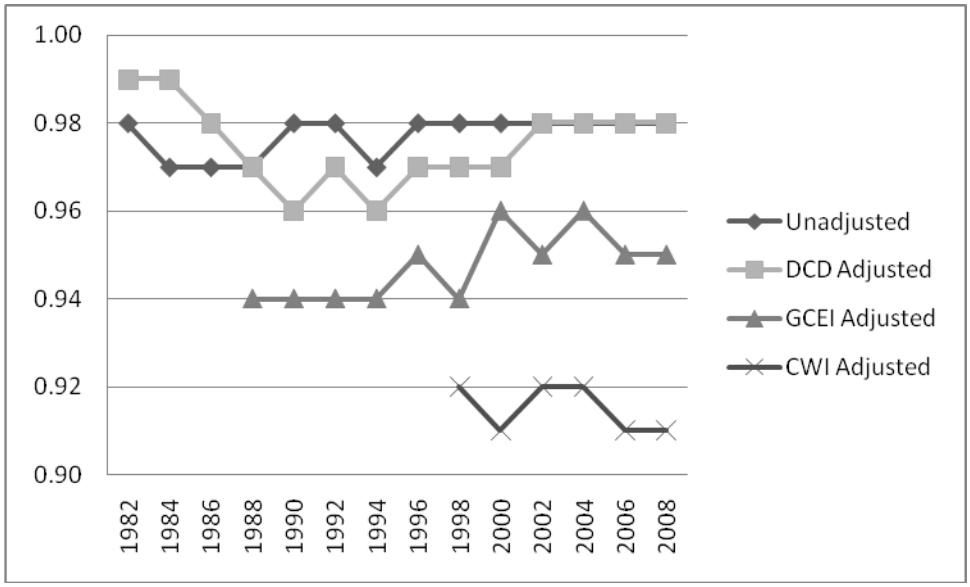


McLoone Index

The McLoone index of total state and local revenue per pupil is displayed in a column format in Table 32. A graphical illustration of the McLoone index of total state and local revenue is shown as Figure 36.

Figure 36 shows the McLoone index of Unadjusted and DCD Adjusted Total State and Local Revenue per Pupil to fluctuate over the first ten years of the study before leveling off at a value of 0.98 for the last four years. The Unadjusted Total State and Local Revenue shows a McLoone index value of 0.98 for ten of the fourteen years of study. The McLoone index has a maximum value of 1.0. The value of the McLoone index approaches its most equitable position as it approaches 1.0. A value of 0.98 shows an equitable distribution of revenues. The GCEI Adjusted Total State and Local Revenues per Pupil fluctuates between 0.94 and 0.96 for the entire fourteen years of

Figure 36: McLoone Index of Total State and Local Revenues per Pupil, 1982-2008



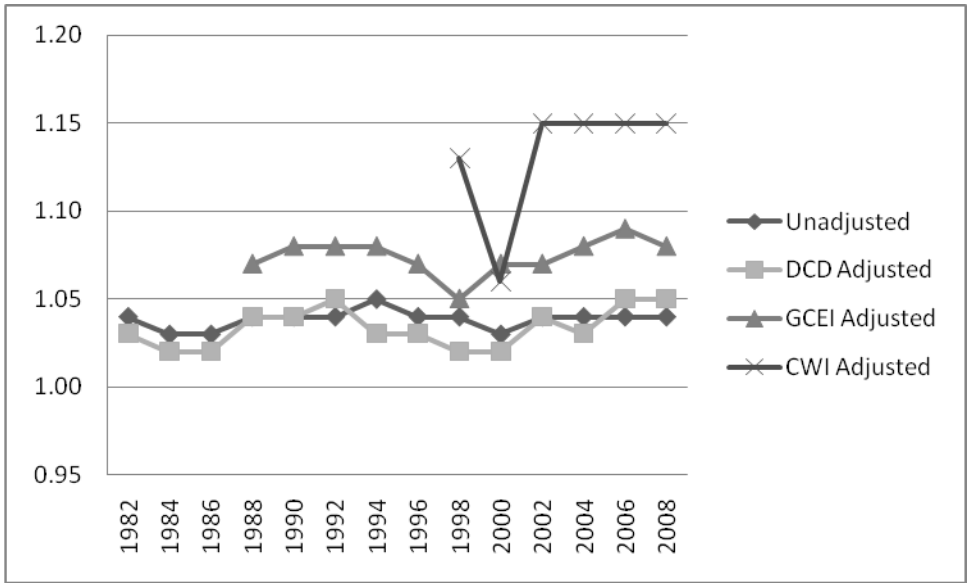
the study. The CWI Adjusted Total State and Local Revenues per Pupil fluctuate between 0.92 and 0.93 for the length of the study. The McLoone index for districts with Unadjusted Total State and Local Revenue per Pupil below the mean is between 0.97 and 0.98 throughout the entire length of this study.

Verstegen Index

The Verstegen index of Total State and Local Revenue per Pupil is displayed in a column format in Table 32. A graphical illustration of the Verstegen index of Total State and Local Revenues per Pupil is shown as Figure 37.

Figure 37 shows the Verstegen index of Unadjusted and DCD Adjusted Total State and Local Revenue per Pupil to fluctuate between 1.02 and 1.05 for the length of the fourteen year study. The Verstegen index has a minimum value of 1.0. The value of the Verstegen index approaches is most equitable position as it approaches 1.0. Values of

Figure 37: Verstegen Index of Total State and Local Revenues per Pupil, 1982-2008



1.02 to 1.05 show an equitable distribution of revenues. The GCEI Adjusted Total State and Local Revenues per Pupil fluctuate between 1.05 and 1.09 for the entire fourteen years of the study. The CWI Adjusted Total State and Local Revenue per Pupil begins in 1998-99 at 1.13 then drops to 1.06 in 2000-01. For the final four years of the study, the value of the Verstegen Index of CWI Adjusted Total State and Local Revenues per Pupil is 1.15. The Verstegen index for districts with Unadjusted Total State and Local Revenue per Pupil above the mean is never greater than 1.05 at any point during this study.

Assessing Distributional Patterns of Per Pupil Revenues Using Gini Coefficients

Tables 33, 34, and 35 show the framework for evaluation the distribution of revenues using Gini coefficients. Gini coefficients range from one to zero, with a coefficient of zero representing total equality. Each table is populated with data from the

current study. Fourteen years worth of data is displayed. Unadjusted and District Cost Differential (DCD) adjusted revenue is shown for all fourteen years. Beginning in 1988-89, revenue is shown adjusted by the Geographic Cost of Education Index (GCEI). The Comparable Wage Index (CWI) is first shown as an adjustment to total state and local revenue in 1998-99.

Total State Revenue

The Gini Coefficients of the distribution of Total State Revenue per Pupil is displayed in a column format in Table 33. A graphical illustration of the distribution of total state revenue per pupil is shown in Figure 38.

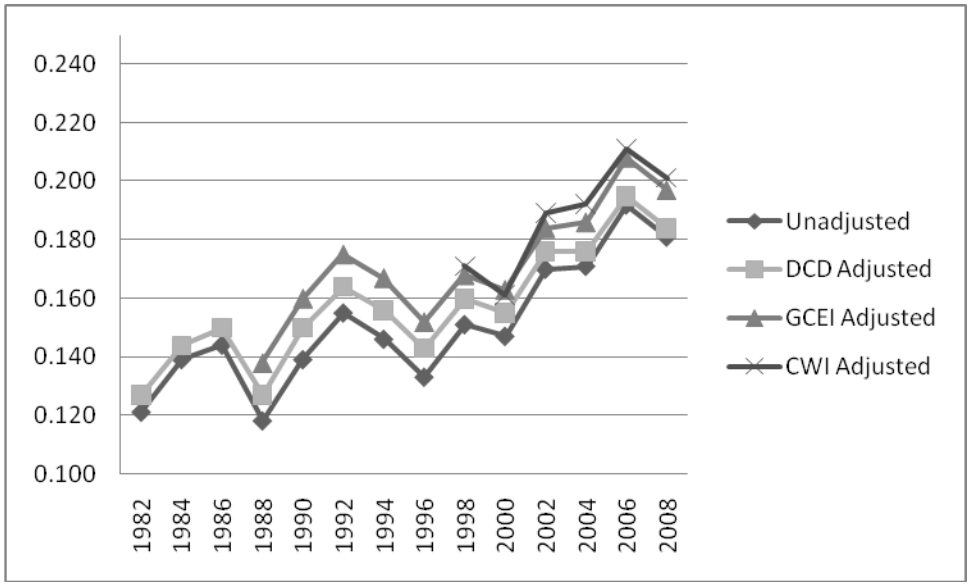
Table 33: Gini Coefficients of the Distribution of Total State Revenues per Pupil, 1982-2008

Year	Unadjusted Total Local Revenue	DCD Adjusted Total Local Revenue	GCEI Adjusted Total Local Revenue	CWI Adjusted Total Local Revenue
1982-83	.122	.127	---	---
1984-85	.139	.144	---	---
1986-87	.144	.150	---	---
1988-89	.118	.127	.138	---
1990-91	.139	.150	.160	---
1992-93	.155	.164	.175	---
1994-95	.146	.156	.167	---
1996-97	.133	.143	.152	---
1998-99	.151	.160	.168	.171
2000-01	.147	.155	.163	.161
2002-03	.170	.176	.184	.189
2004-05	.171	.176	.186	.192
2006-07	.192	.195	.208	.211
2008-09	.181	.184	.197	.201

Figure 38 shows that the distribution of Total State Revenues per Pupil has gradually become less equitable. It is remarkable that all of the Gini coefficients follow the same pattern throughout the term of the study. They rise in 1984-85 and 1986-97 followed by a decrease in 1988-89. They rise for another two years in 1990-91 and 1992-93 followed by a two year decrease in 1994-95 and 1996-97. A rise in 1998-99 is immediately followed by a decrease in 2000-01. From 2002-03 they rise steadily to their overall peak in 2006-07. The final year of study, 2008-09, shows a decrease over the preceding year.

The Gini coefficient of Unadjusted Total State Revenues per Pupil increases throughout the term of this study. They were at their lowest levels in 1988-89 and highest in 2006-07. Increasing Gini coefficient values indicate decreasing distributional equity.

Figure 38: Gini Coefficients of Total State Revenues per Pupil, 1982-2008



Total Local Revenue

The Gini Coefficients of the distribution of total local revenue per pupil is displayed in a column format in Table 34. A graphical illustration of the distribution of total local revenue per pupil is shown in Figure 39.

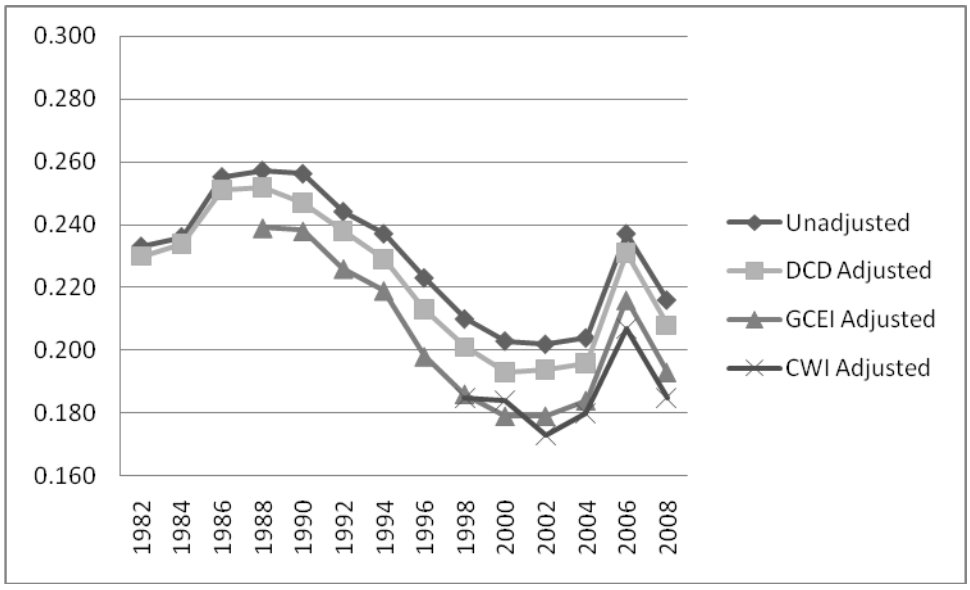
Table 34: Gini Coefficients of the Distribution of Total Local Revenues per Pupil, 1982-2008

Year	Unadjusted Total State Revenue	DCD Adjusted Total State Revenue	GCEI Adjusted Total State Revenue	CWI Adjusted Total State Revenue
1982-83	.233	.230	---	---
1984-85	.236	.234	---	---
1986-87	.255	.251	---	---
1988-89	.257	.252	.239	---
1990-91	.256	.247	.238	---
1992-93	.244	.237	.226	---
1994-95	.237	.229	.219	---
1996-97	.223	.213	.198	---
1998-99	.210	.201	.186	.185
2000-01	.203	.193	.179	.184
2002-03	.202	.194	.179	.173
2004-05	.204	.196	.184	.180
2006-07	.237	.231	.216	.207
2008-09	.216	.208	.193	.185

Figure 39 shows that the Gini coefficients for Total Local Revenue per Pupil rise for the first two years of the study. The distribution of local revenues becomes more equitable each year from 1988-89 as the Gini coefficients decline annually for the next eight years. The final three years of study are marked by sharp increases and decreases in the Gini coefficients.

The Gini coefficient of Unadjusted Total Local Revenues per Pupil decreases throughout the term of this study. They were at their lowest levels in 2002-03 and highest in 1988-89. Decreasing Gini coefficient values indicate increasing distributional equity.

Figure 39: Gini Coefficients of Total Local Revenues per Pupil, 1982-2008



Total State and Local Revenue

The Gini coefficients of the distribution of Total State and Local revenue per Pupil is displayed in a column format in Table 35. A graphical illustration of the distribution of total state and local revenue per pupil is shown in Figure 40.

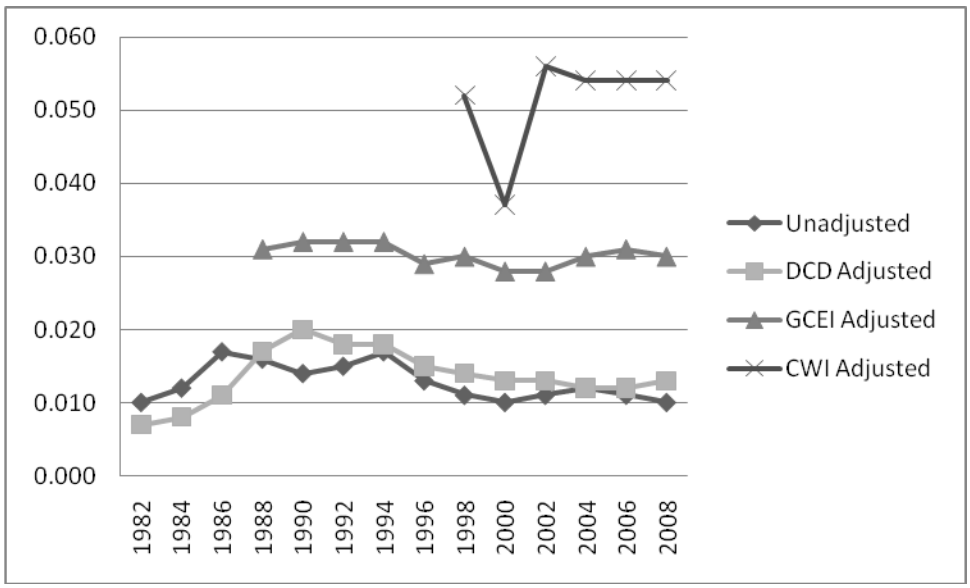
Table 35: Gini Coefficients of the Distribution of Total State and Local Revenues per Pupil, 1982-2008

Year	Unadjusted Total State & Local Revenue	DCD Adjusted Total State & Local Revenue	GCEI Adjusted Total State & Local Revenue	CWI Adjusted Total State & Local Revenue
1982-83	.010	.007	---	---
1984-85	.012	.008	---	---
1986-87	.017	.011	---	---
1988-89	.016	.017	.031	---
1990-91	.014	.020	.032	---
1992-93	.015	.018	.032	---
1994-95	.017	.018	.032	---
1996-97	.013	.015	.029	---
1998-99	.011	.014	.030	.052
2000-01	.010	.013	.028	.037
2002-03	.011	.013	.028	.056
2004-05	.012	.012	.030	.054
2006-07	.011	.012	.031	.054
2008-09	.010	.013	.030	.054

Unlike Figures 38 and 39, Figure 40 shows consistency among the Gini coefficients for three of the four revenue measures. Unadjusted Total State and Local Revenue per Pupil shows a consistently low gini coefficient, varying only slightly during the study between 0.010 and 0.017. The GCEI Adjusted Total State and Local Revenue per Pupil vary in an even smaller range of 0.030 to 0.032. DCD Adjusted Total State and Local Revenue per Pupil vary in a slightly larger range of 0.007 to 0.020. The CWI Adjusted Total State and Local Revenue per Pupil has the largest range of values due to a large drop in the second year of its existence.

The Gini coefficients for the distribution of Unadjusted Total State and Local Revenue per Pupil never exceeds 0.020 at any point during this study. The minimum value of the Gini coefficient is zero. The lower the Gini coefficient, the more equitable the distribution of available resources.

Figure 40: Gini Coefficients of Total State and Local Revenues per Pupil, 1982-2008



Comparison of Revenues Types

Figure 41 examines the Gini coefficients of each of the unadjusted measures, Unadjusted Total State Revenue per Pupil, Unadjusted Total Local Revenue per Pupil, and Unadjusted Total State and Local Revenue per Pupil. Figure 38 showed state revenues becoming less equitable over time. Figure 39 showed local revenues becoming more equitable over time. Figure 40 showed the relative consistency of the distributional equity of total state and local revenue. Figure 41 provides a different look at the revenues by combining these revenue types in one multiple line graph.

Figure 41: Gini Coefficients of Unadjusted Revenues per Pupil, 1982-2008

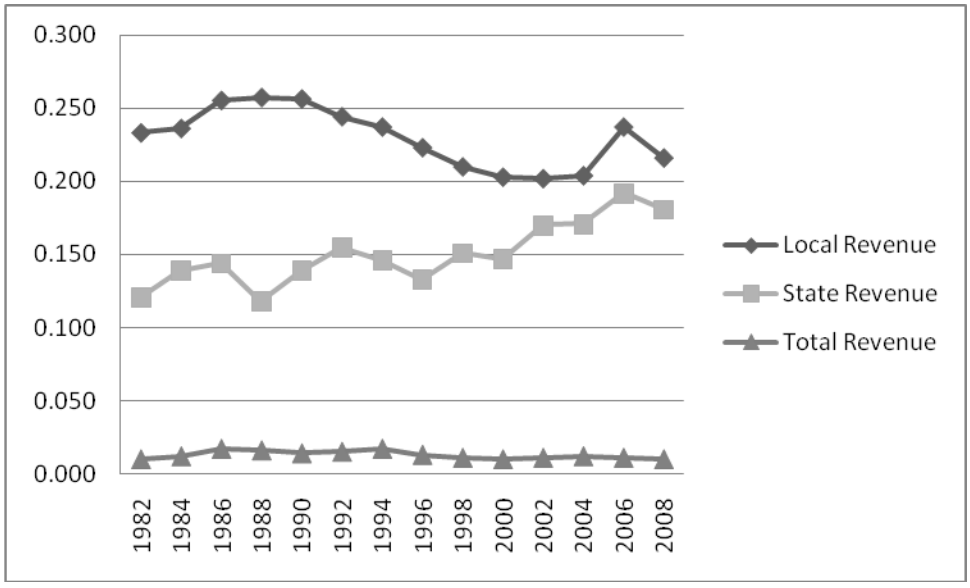
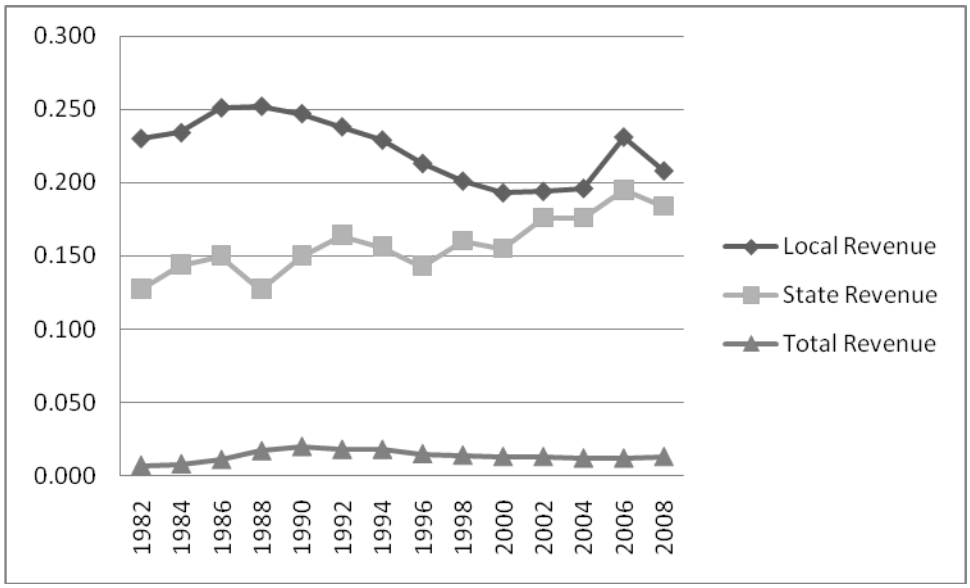


Figure 42 takes the same look at the Gini coefficients of each of the DCD adjusted measures as Figure 41 did with unadjusted revenues. DCD Adjusted Total State Revenue per pupil, DCD Adjusted Total Local Revenue per Pupil, and DCD Adjusted Total State and Local Revenue per Pupil is the subject of Figure 42.

Figure 42: Gini Coefficients of DCD Adjusted Revenues per Pupil, 1982-2008



Relationship Between Revenue Measures and Selected Independent Variables

District Cost Differential and the Revenue Measures

Tables 36, 37, and 38 show the framework for evaluation the relationship between a district's District Cost Differential (DCD) and the selected revenue measures. Each table is populated with data from the current study. Fourteen years worth of data is displayed. Unadjusted and District Cost Differential (DCD) Adjusted Revenue is shown for all fourteen years. Beginning in 1988-89, revenue is shown adjusted by the

Geographic Cost of Education Index (GCEI). The Comparable Wage Index (CWI) is first shown as an adjustment to total state and local revenue in 1998-99.

Total State Revenue

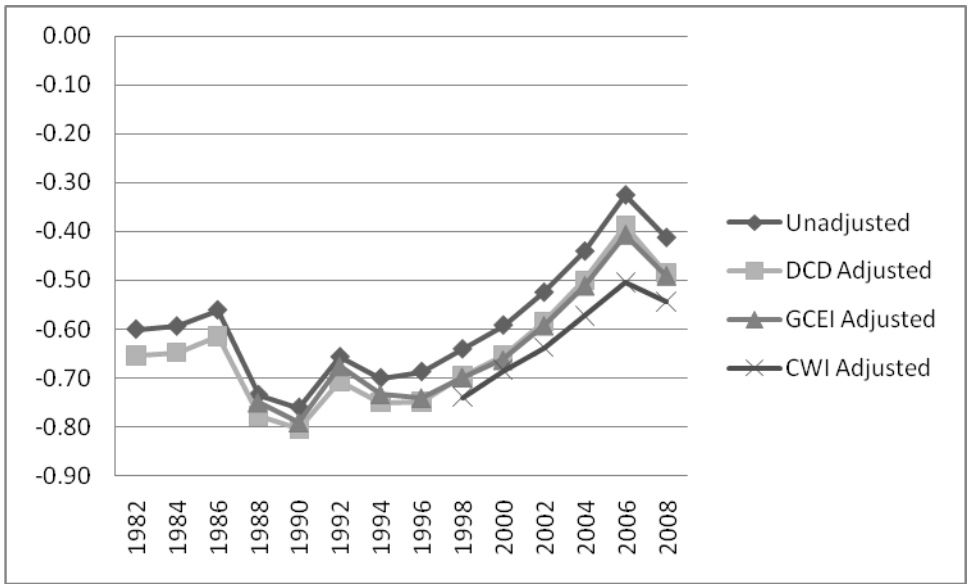
The relationship between the DCD and total state revenues is presented in a column format in Table 36. In addition to the correlation itself (r) the percentage of values explained by the correlation is presented as (r^2). A graphical illustration of these relationships is shown as Figure 43.

Table 36: Product-Moment Correlation Between the District Cost Differential and Total State Revenues per Pupil, 1982-2008

Year	Unadjusted Total State Revenue		DCD Adjusted Total State Revenue		GCEI Adjusted Total State Revenue		CWI Adjusted Total State Revenue	
	r	r^2	r	r^2	r	r^2	r	r^2
1982-83	-.60	.36	-.66	.43	---		---	
1984-85	-.59	.35	-.65	.42	---		---	
1986-87	-.56	.32	-.62	.38	---		---	
1988-89	-.73	.54	-.78	.61	-.75	.61	---	
1990-91	-.76	.58	-.81	.65	-.79	-.63	---	
1992-93	-.66	.43	-.71	.50	-.68	.46	---	
1994-95	-.70	.49	-.75	.56	-.73	.54	---	
1996-97	-.69	.47	-.75	.56	-.74	.55	---	
1998-99	-.64	.41	-.70	.49	-.70	.49	-.74	.55
2000-01	-.59	.35	-.66	.43	-.66	.44	-.68	.47
2002-03	-.53	.28	-.59	.34	-.59	.35	-.64	.41
2004-05	-.44	.19	-.50	.25	-.51	.26	-.57	.33
2006-07	-.33	.11	-.39	.15	-.41	.17	-.50	.25
2008-09	-.41	.17	-.49	.24	-.49	.24	-.54	.30

Figure 43 shows the correlation between the DCD and total state revenues to be consistently negative. This shows an inverse relationship between the two variables. The relationship shows its strongest magnitude in 1990-91 at -0.76, -0.81, and -0.79 for the Unadjusted, DCD Adjusted, and GCEI Adjusted State Revenue measures respectively. The magnitude is its weakest in 2006-07 at -0.33, -0.39, -0.41, and -0.50 for the Unadjusted, DCD Adjusted, GCEI Adjusted, and CWI Adjusted state revenue measures respectively. It is remarkable that each of the four revenue measures react in unison from year to year. If one correlation rises, they all rise: if one decreases, they all decrease. There is a strong inverse relationship between state revenue and the DCD. This relationship weakens over the course of this study but remains strong.

Figure 43: Product-Moment Correlation Between District Cost Differentials and Total State Revenues per Pupil, 1982-2008



Total Local Revenue

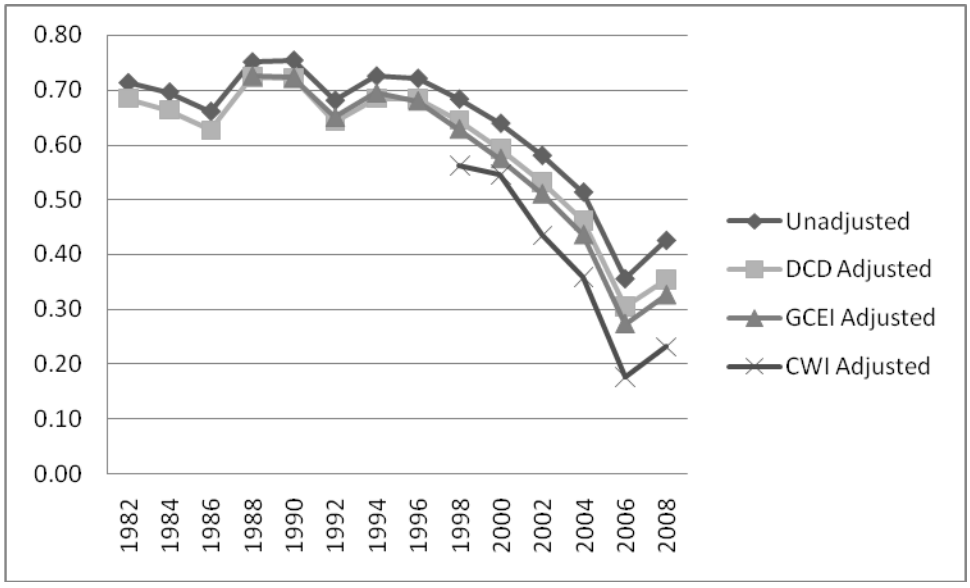
The relationship between the DCD and total local revenues is presented in a column format in Table 37. In addition to the correlation itself (r) the percentage of values explained by the correlation is presented as (r^2). A graphical illustration of these relationships is shown as Figure 44.

Table 37: Product-Moment Correlation Between the District Cost Differentials and Total Local Revenues per Pupil, 1982-2008

Year	Total Local Revenue		DCD Adjusted Total Local Revenue		GCEI Adjusted Total Local Revenue		CWI Adjusted Total Local Revenue	
	r	r^2	r	r^2	r	r^2	r	r^2
1982-83	.71	.51	.69	.47	---		---	
1984-85	.70	.49	.66	.44	---		---	
1986-87	.66	.44	.63	.39	---		---	
1988-89	.75	.57	.72	.52	.73	.53	---	
1990-91	.75	.57	.72	.52	.72	.52	---	
1992-93	.68	.46	.64	.41	.65	.42	---	
1994-95	.73	.53	.68	.47	.69	.48	---	
1996-97	.72	.52	.68	.47	.68	.46	---	
1998-99	.68	.47	.65	.42	.63	.40	.56	.32
2000-01	.64	.41	.59	.35	.57	.33	.55	.30
2002-03	.58	.34	.53	.28	.51	.26	.44	.19
2004-05	.51	.26	.46	.21	.44	.19	.36	.13
2006-07	.36	.13	.30	.09	.27	.07	.18	.03
2008-09	.43	.18	.35	.13	.33	.11	.23	.05

Figure 44 shows the correlation between the DCD and total local revenues to be consistently positive. For the first eight years of the study (1982-83 through 1996-97), the correlations vary around 0.70. In the five years that follow (1998-99 through 2006-07) the relationship between the DCD and total local revenues weakens as the correlation decreases each year. In 2008-09, the final year of the study, the correlation shows a slight increase for all revenue measures. There is a strong positive relationship between local revenue and the DCD. This relationship weakens over the course of this study but remains strong.

Figure 44: Product-Moment Correlation Between District Cost Differentials and Total Local Revenues per Pupil, 1982-2008



Total State and Local Revenue

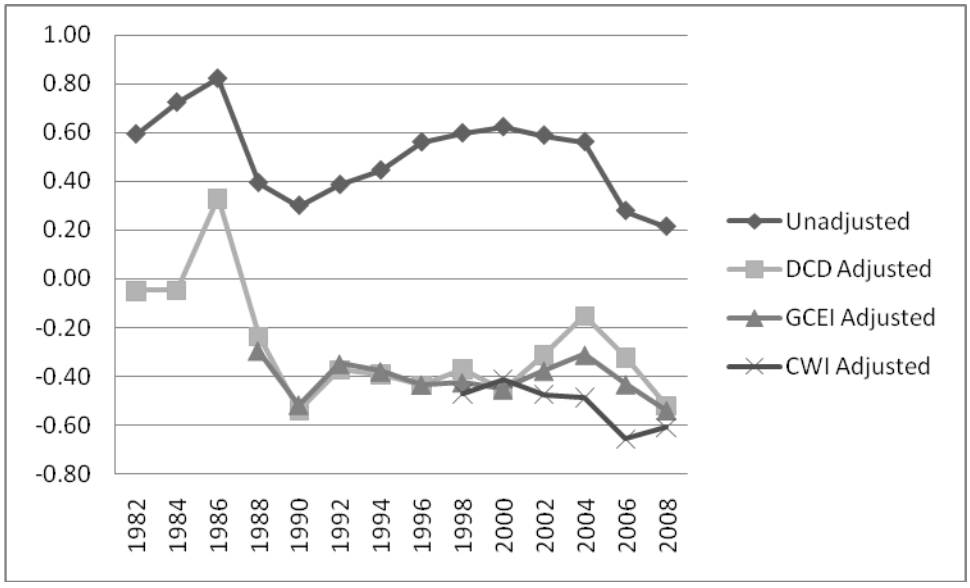
The relationship between the DCD and total state and local revenues is presented in a column format in Table 38. In addition to the correlation itself (r) the percentage of values explained by the correlation is presented as (r^2). A graphical illustration of these relationships is shown as Figure 45.

Table 38: Product-Moment Correlation Between the District Cost Differentials and Total State and Local Revenues Per Pupil, 1982-2008

Year	Total State and Local Revenue		DCD Adjusted Total State and Local Revenue		GCEI Adjusted Total State and Local Revenue		CWI Adjusted Total State and Local Revenue	
	r	r^2	r	r^2	r	r^2	r	r^2
1982-83	.59	.35	-.05	.00		---		---
1984-85	.72	.53	-.05	.00		---		---
1986-87	.82	.68	.33	.11		---		---
1988-89	.39	.16	-.24	.06	-.29	.09		---
1990-91	.30	.09	-.54	.29	-.52	.27		---
1992-93	.39	.15	-.37	.14	-.35	.12		---
1994-95	.45	.20	-.39	.15	-.38	.14		---
1996-97	.56	.32	-.44	.19	-.43	.19		---
1998-99	.60	.36	-.37	.14	-.43	.18	-.47	.22
2000-01	.62	.39	-.46	.21	-.45	.21	-.41	.17
2002-03	.59	.35	-.31	.10	-.38	.10	-.47	.22
2004-05	.56	.32	-.15	.02	-.31	.10	-.49	.24
2006-07	.28	.08	-.32	.10	-.43	.19	-.66	.43
2008-09	.21	.05	-.52	.27	-.54	.29	-.61	.37

Figure 45 shows the correlation between the DCD and Unadjusted Total State and Local Revenue to be consistently positive. The relationship between the DCD and all three adjusted total state and local revenues is consistently negative. The lesson here is that total state and local revenues have a relationship to the DCD. When we control for the cost of doing business in respective districts using either the DCD, GCEI, or CWI the magnitude of this relationship decreases considerably. There is a mild positive relationship between state revenue and the DCD. This relationship weakens over the course of this study and reaches its lowest value in 2008-09.

Figure 45: Product-Moment Correlation Between District Cost Differentials and Total State and Local Revenues, 1982-2008



Comparison of Revenue Types

Figures 46 and 47 present the correlation of the DCD to revenues from a different perspective. Figure 46 shows the relationship between the DCD and Unadjusted Total State Revenue per Pupil, Unadjusted Total Local Revenue per Pupil, and Unadjusted Total State and Local Revenue per Pupil. Figure 47 shows the relationship between the DCD and DCD Adjusted Total State Revenue per Pupil, DCD Adjusted Total Local Revenue per Pupil, and DCD Adjusted Total State and Local Revenue per Pupil.

Figure 46: Product-Moment Correlation Between District Cost Differential and Unadjusted Revenues per Pupil, 1982-2008

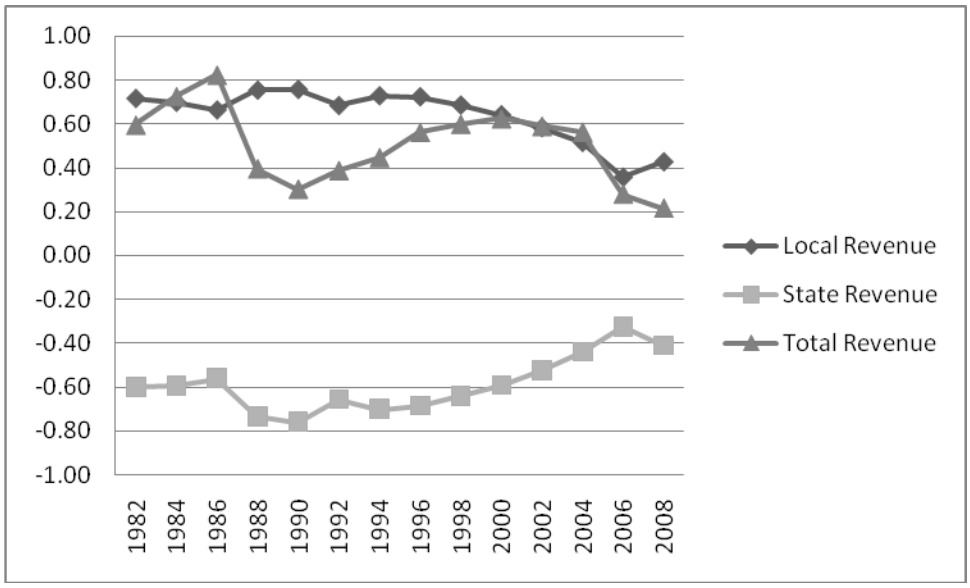
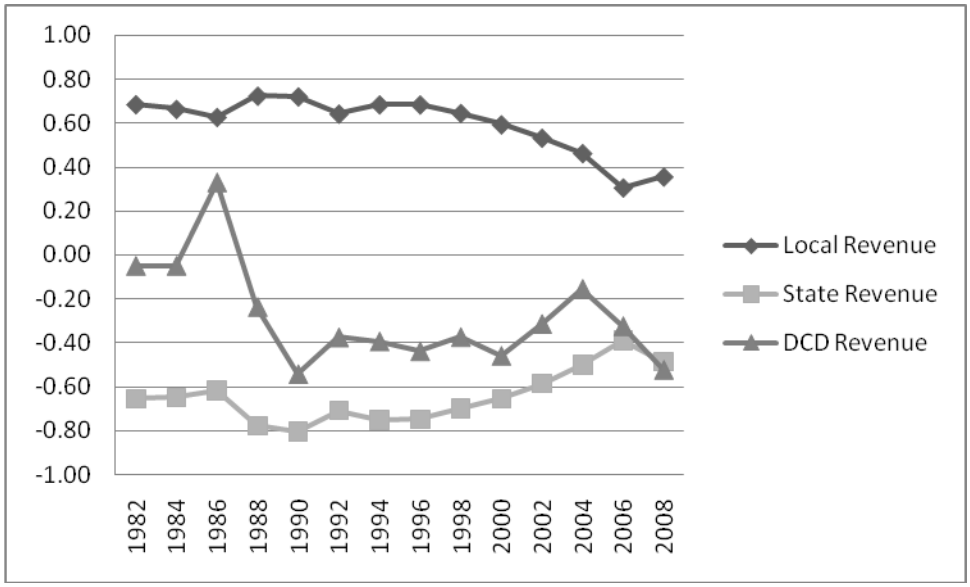


Figure 47: Product-Moment Correlation Between District Cost Differentials and DCD Adjusted Revenues per Pupil, 1982-2008



Assessed Property Value per Pupil and the Revenue Measures

Tables 39, 40, and 41 show the framework for evaluating the relationship between a district's assessed property value per student and the selected revenue measures. Each table is populated with data from the current study. Fourteen years worth of data is displayed. Unadjusted and District Cost Differential (DCD) Adjusted Revenue is shown for all fourteen years. Beginning in 1988-89, revenue is show adjusted by the Geographic Cost of Education Index (GCEI). The Comparable Wage Index (CWI) is first shown as an adjustment to total state and local revenue in 1998-99.

Total State Revenue

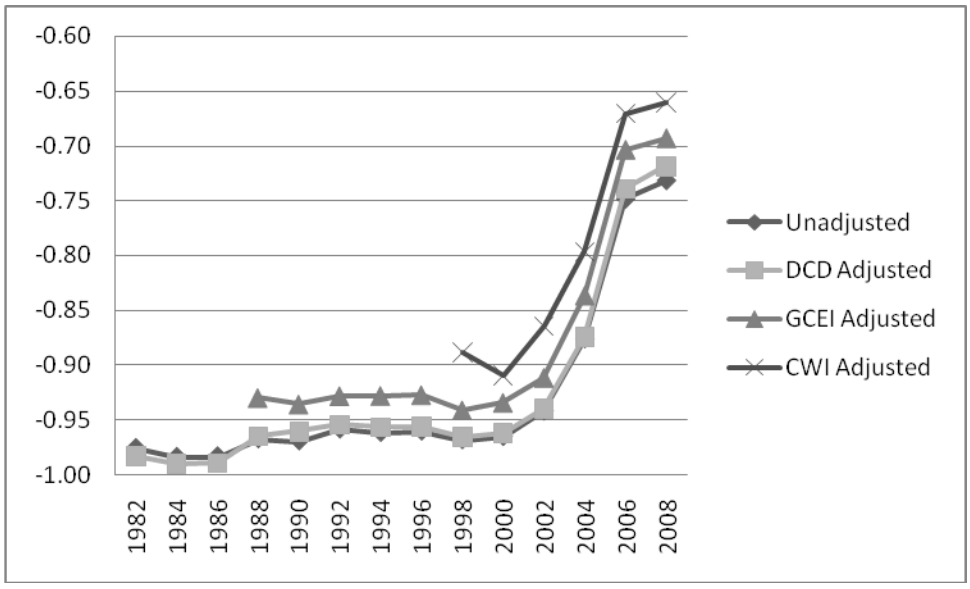
The relationship between assessed property value per student and total state revenues is presented in a column format in Table 39. In addition to the correlation itself (r) the percentage of values explained by the correlation is presented as (r^2). A graphical illustration of these relationships is shown as Figure 48.

Table 39: Product-Moment Correlation Between Assessed Property Value per Pupil and Total State Revenue per Pupil, 1982-2008

Year	Total State Revenue		DCD Adjusted Total State Revenue		GCEI Adjusted Total State Revenue		CWI Adjusted Total State Revenue	
	r	r^2	r	r^2	r	r^2	r	r^2
1982-83	-.98	.95	-.98	.97		---		---
1984-85	-.98	.97	-.99	.98		---		---
1986-87	-.98	.97	-.99	.98		---		---
1988-89	-.97	.94	-.96	.94	-.93	.87		---
1990-91	-.97	.94	-.96	.92	-.94	.88		---
1992-93	-.96	.92	-.95	.91	-.93	.86		---
1994-95	-.96	.92	-.96	.92	-.93	.86		---
1996-97	-.96	.92	-.96	.92	-.93	.86		---
1998-99	-.97	.94	-.97	.93	-.94	.89	-.89	.79
2000-01	-.97	.93	-.96	.93	-.93	.87	-.91	.83
2002-03	-.94	.89	-.94	.88	-.91	.83	-.86	.75
2004-05	-.88	.77	-.87	.76	-.84	.70	-.80	.63
2006-07	-.75	.56	-.74	.55	-.70	.49	-.67	.45
2008-09	-.73	.54	-.72	.52	-.69	.48	-.66	.44

Figure 48 shows the correlation between assessed property per student and total state revenues per student to be consistently negative. This shows an inverse relationship between the two variables. For the first eleven years of the study (1982-83 through 2002-03) the correlation varied between -0.90 and -1.00. The final three years showed a weakening of the relationship as the values began to climb. The final correlations were -0.73, -0.72, -0.69, and -0.66 for Unadjusted, DCD Adjusted, GCEI Adjusted, and CWI Adjusted State Revenues per Pupil respectively. Remarkably, each value over the course of the study maintained the same relative position to the other revenue measures. There is a strong inverse relationship between state revenue and the Assessed Property Value per Pupil. This relationship weakens over the course of this study but remains moderately high.

Figure 48: Product-Moment Correlation Between Assessed Property Value per Pupil and Total State Revenues, 1982-2008



Total Local Revenue

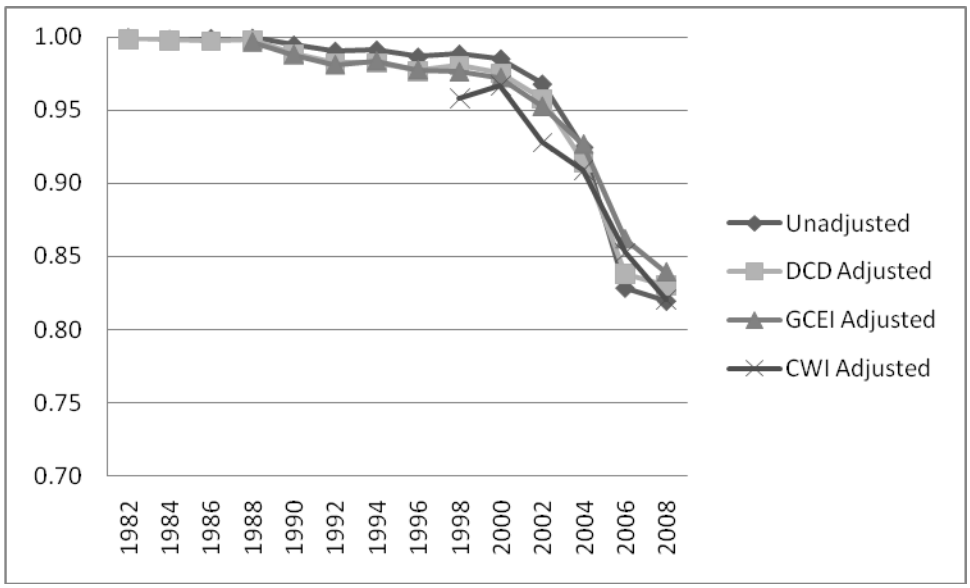
The relationship between assessed property value per student and total local revenues is presented in a column format in Table 40. In addition to the correlation itself (r) the percentage of values explained by the correlation is presented as (r^2). A graphical illustration of these relationships is shown as Figure 49.

Table 40: Product-Moment Correlation Between Assessed Property Value per Pupil and Total Local Revenues per Pupil, 1982-2008

Year	Total Local Revenue		DCD Adjusted Total Local Revenue		GCEI Adjusted Total Local Revenue		CWI Adjusted Total Local Revenue	
	r	r^2	r	r^2	r	r^2	r	r^2
1982-83	1.00	1.00	1.00	1.00	---		---	
1984-85	1.00	1.00	1.00	1.00	---		---	
1986-87	1.00	1.00	1.00	.99	---		---	
1988-89	1.00	1.00	1.00	1.00	1.00	.99	---	
1990-91	.99	.99	.99	.98	.99	.98	---	
1992-93	.99	.98	.98	.97	.98	.96	---	
1994-95	.99	.98	.98	.96	.98	.97	---	
1996-97	.99	.97	.98	.95	.98	.96	---	
1998-99	.99	.98	.98	.96	.98	.95	.96	.92
2000-01	.99	.97	.98	.95	.97	.95	.97	.93
2002-03	.97	.94	.96	.92	.95	.91	.93	.86
2004-05	.92	.86	.91	.84	.93	.86	.91	.83
2006-07	.83	.69	.84	.70	.86	.74	.85	.73
2008-09	.82	.67	.83	.69	.84	.70	.82	.67

Figure 49 shows the correlation between assessed property per student and total state revenues per student to be consistently positive. This shows a direct relationship between the two variables. As with the state revenue in Figure 48, for the first eleven years of the study (1982-83 through 2002-03) the correlation varied between 0.90 and 1.00. The final three years showed a weakening of the relationship as the values began to fall. The final correlations were outside the previous range at 0.82, 0.83, 0.84, and 0.82 for Unadjusted, DCD Adjusted, GCEI Adjusted, and CWI Adjusted Local Revenues per Pupil respectively. As with the state revenues, each of the local values over the course of the study maintained the same relative position to the other revenue measures. There is a strong positive relationship between local revenue and the Assessed Property Value per Pupil. This relationship weakens over the course of this study but remains moderately high.

Figure 49: Product-Moment Correlation Between Assessed Property Value per Pupil and Total Local Revenues, 1982-2008



Total State and Local Revenue

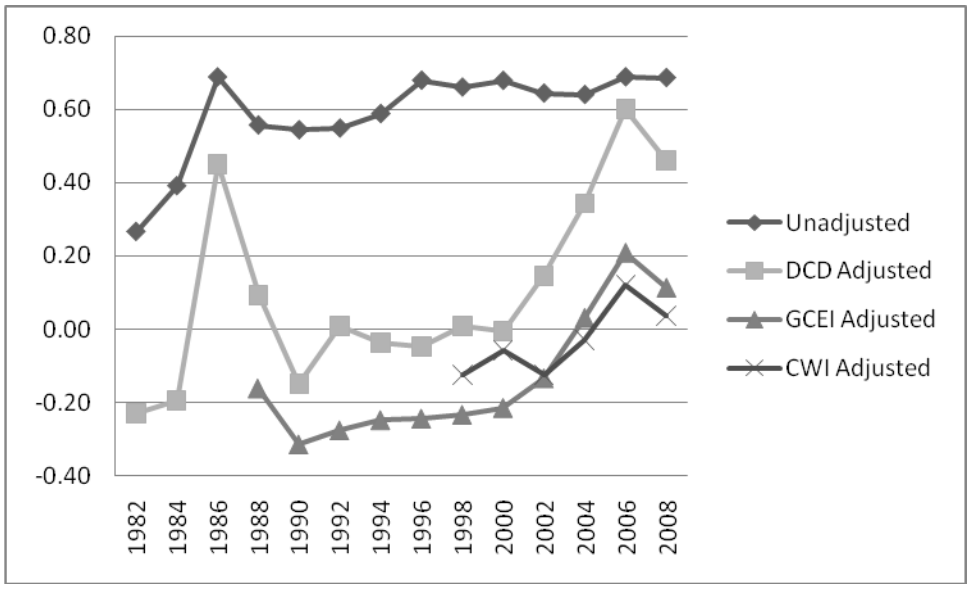
The relationship between assessed property value per student and total state and local revenues is presented in a column format in Table 41. In addition to the correlation itself (r) the percentage of values explained by the correlation is presented as (r^2). A graphical illustration of these relationships is shown as Figure 50.

Table 41: Product-Moment Correlation Between Assessed Property Value per Pupil and Total State and Local Revenues Per Pupil, 1982-2008

Year	Unadjusted Total State and Local Revenue		DCD Adjusted Total State and Local Revenue		GCEI Adjusted Total State and Local Revenue		CWI Adjusted Total State and Local Revenue	
	r	r^2	r	r^2	r	r^2	r	r^2
1982-83	.27	.07	-.23	.05	---		---	
1984-85	.39	.15	-.19	.04	---		---	
1986-87	.69	.48	.45	.20	---		---	
1988-89	.56	.31	.09	.01	-.16	.03	---	
1990-91	.54	.30	-.15	.02	-.31	.10	---	
1992-93	.55	.30	.01	.00	-.28	.08	---	
1994-95	.59	.35	-.04	.00	-.25	.06	---	
1996-97	.68	.46	-.05	.00	-.24	.08	---	
1998-99	.66	.44	.01	.00	-.23	.05	-.13	.02
2000-01	.68	.46	-.01	.00	-.21	.05	-.06	.00
2002-03	.64	.42	.14	.02	-.13	.02	-.13	.02
2004-05	.64	.41	.34	.12	.03	.00	-.03	.00
2006-07	.69	.48	.60	.36	.21	.04	.12	.01
2008-09	.69	.47	.46	.21	.11	.01	.04	.00

Figure 50 shows the correlation between assessed property value per student and Unadjusted Total State and Local Revenue to be consistently positive. An examination of the correlation between assessed property value per student and DCD Adjusted Total State and Local Revenue shows it to lie between 0.20 and -0.20 nine out of the fourteen years of the study. All of the CWI Adjusted Total State and Local Revenues per Pupil are within this range. The GCEI Adjusted Total State and Local Revenue per Pupil are consistently around -0.20 for the first eight years of the study before becoming slightly positive for the last three years. The relationship intensified over the first three years of this study and then leveled off slightly above 0.60. This shows a moderate relationship between a district's revenue and assessed property.

Figure 50: Product-Moment Correlation Between Assessed Property Value per Pupil and Total State and Local Revenues, 1982-2008



Comparison of Revenue Types

Figures 51 and 52 present the correlation of assessed property value per student to revenues from a different perspective. Figure 51 shows the relationship between assessed property value per student and Unadjusted Total State Revenue per Pupil, Unadjusted Total Local Revenue per Pupil, and Unadjusted Total State and Local Revenue per Pupil. Figure 52 shows the relationship between assessed property value per student and DCD Adjusted Total State Revenue per Pupil, DCD Adjusted Total Local Revenue per Pupil, and DCD Adjusted Total State and Local Revenue per Pupil.

Figure 51: Product-Moment Correlation Between Assessed Property Value per Pupil and Unadjusted Revenues per Pupil, 1982-2008

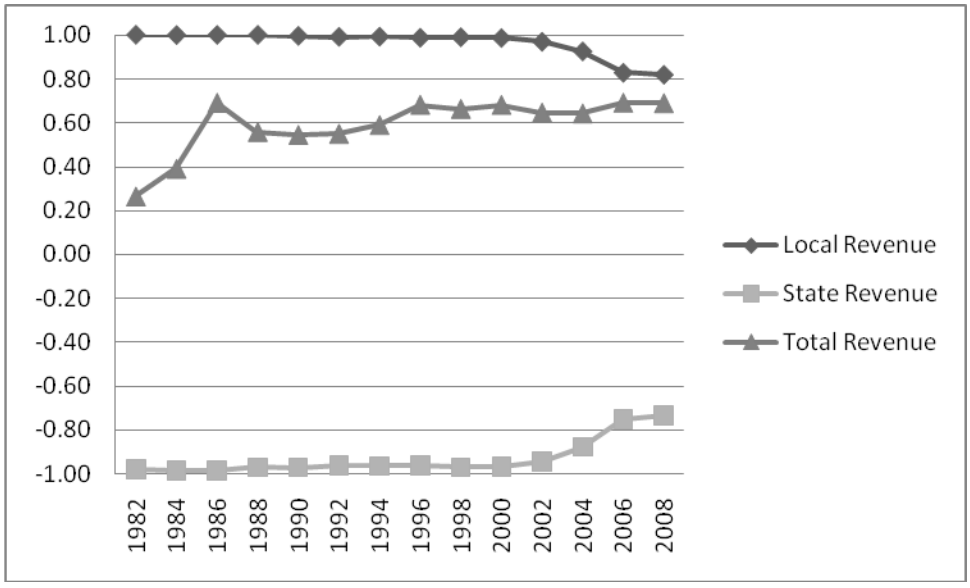
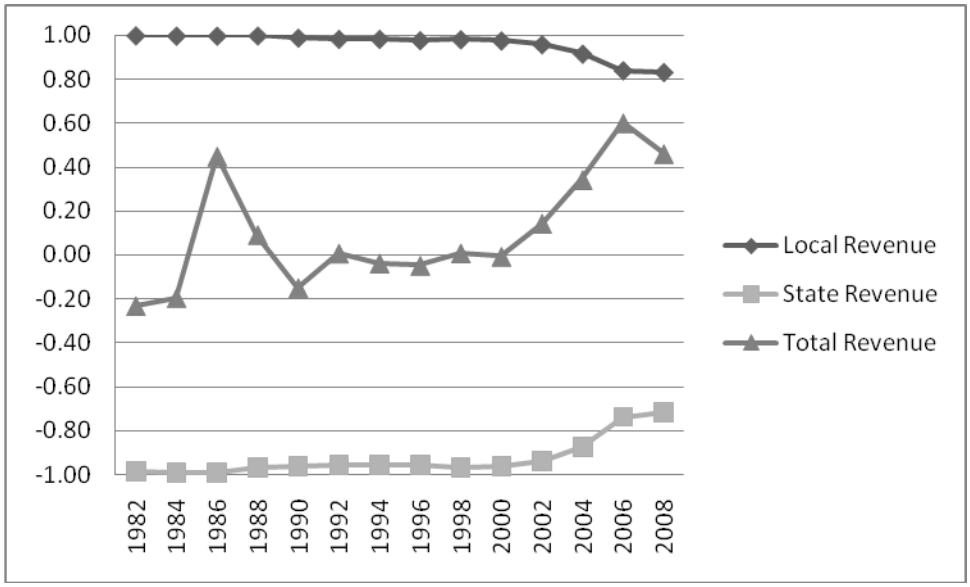


Figure 52: Product-Moment Correlation Between Assessed Property Value per Pupil and DCD Adjusted Revenues per Pupil, 1982-2008



Assessed Property Value per Pupil and the District Cost Differential

Table 42 shows the framework for evaluating the relationship between a district's assessed property value per student and its District Cost Differential (DCD). Each table is populated with data from the current study. Fourteen years worth of data is displayed.

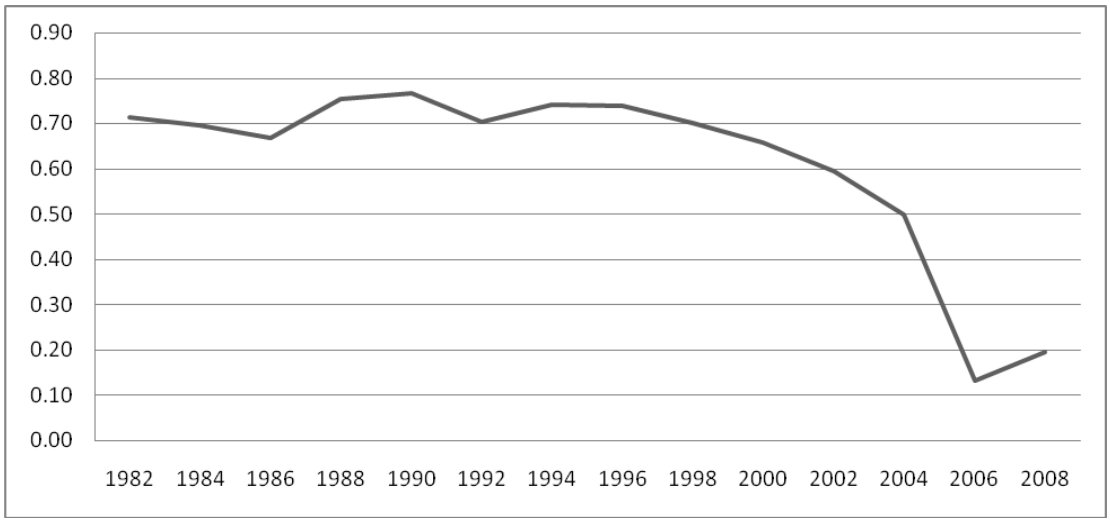
The relationship between assessed property value per student and a district's DCD is presented in a column format in Table 42. A graphical illustration of this relationship is shown as Figure 53.

Figure 53 shows the correlation between assessed property per student and a district's DCD to be between 0.65 and 0.80 for the first ten years of the fourteen year study. This relationship weakens over the next three years of the study as the correlation falls to 0.13, its lowest value, in 2006-07. The final year of the study shows a very slight

Table 42: Product-Moment Correlation Between Assessed Property Value per Pupil and the District Cost Differentials, 1982-2008

Year	Assessed Value per Pupil
1982-83	.71
1984-85	.69
1986-87	.67
1988-89	.75
1990-91	.77
1992-93	.70
1994-95	.74
1996-97	.74
1998-99	.70
2000-01	.66
2002-03	.59
2004-05	.50
2006-07	.13
2008-09	.19

Figure 53: Product-Moment Correlation Between Assessed Property Value per Student and the District Cost Differentials, 1982-2008



strengthening of the relationship to a value of 0.19. There is a moderate relationship between these two variables. The relationship deteriorates over the course of this study.

Total State and Local Revenue per Pupil Using Weighted Student FTE

A fundamental component of the Florida Education Finance Program is the Program Cost Factors. The Program Cost Factors are used to provide weighted funding based on the educational program in which the student is enrolled. Although this study focuses on per student revenues at the school district level, the make up of each school district is different. The individual composition of a school district's student population would be reflected in its Weighted FTE. As a funding component, Weighted FTE has the potential to be an equalizing or disequalizing mechanism.

Table 43 includes an analysis of the 1998-99 Florida Education Finance Program using Weighted FTE as the divisor when determining per student revenue per district. The funding variable on interest is total state and local funding per student. Data is presented for Unadjusted State and Local Revenue per Pupil based on unweighted student counts, Unadjusted State and Local Revenue per Pupil based on weighted student counts, DCD Adjusted State and Local Revenue per Pupil based on unweighted student counts, and DCD Adjusted State and Local Revenue per Pupil based on weighted student counts.

An examination of the data in Table 43 shows that all percentile measures are lower when calculated using the weighted student counts. This is basic math. In all districts and all years, the weighted FTE will be higher than the unweighted FTE. The range of Unadjusted Total State and Local Revenue per Pupil decreases 32.3% when calculated using the weighted FTE. The range of DCD Adjusted Total State and Local

Table 43: Use of Weighted and Unweighted Students in Total State and Local Revenue per Pupil Equity Measures in 1998-99

Measure	1998-99 Unweighted Unadjusted	1998-99 Weighted Unadjusted	1998-99 Unweighted DCD Adjusted	1998-99 Weighted DCD Adjusted
100th percentile	5382.74	4288.51	5260.35	4168.67
95th percentile	4948.82	3938.00	5119.24	4136.95
75th percentile	4808.50	3801.21	4990.54	3982.02
50th percentile	4658.31	3722.98	4899.18	3899.25
25th percentile	4578.98	3664.50	4747.65	3802.42
5th percentile	4463.35	3664.50	4609.36	3737.75
1st percentile	4461.01	3664.50	4569.84	3707.43
Range	921.74	624.01	719.56	466.92
Restricted Range	485.46	273.51	509.87	399.20
Mean	4697.48	3758.20	4877.53	3903.12
Standard Deviation	176.08	113.23	156.70	124.06
Coefficient of Variation	.04	.03	.03	.03
Federal Range Ratio	.11	.07	.11	.11
McLoone Index	.98	.99	.97	.98
Verstegen Index	1.04	1.03	1.02	1.03
Gini Coefficient	.011	.007	.014	.011

Revenue per Pupil decreases a similar amount at 35.1%. The restricted range of Unadjusted Total State and Local Revenues per Pupil decreases 43.7% when calculated using the weighted FTE. The restricted range of DCD Adjusted Total State and Local Revenue per Pupil decreases at about half the rate of the unadjusted revenues when calculated using weighted FTE at 21.7%.

The coefficient of variation and federal range ratio showed a more equitable distribution of Unadjusted Total State and Local Revenues per Pupil when calculated using the weighted FTE. The coefficient of variation reduced from 0.04 to 0.03. The federal range ration reduced from 0.11 to 0.07. There was no difference in the coefficient

of variation or federal range ratio when using weighted FTE in the calculation of DCD Adjusted Total State and Local Revenue per Pupil.

The McLoone index and the Verstegen index showed a more equitable distribution of revenue three out of four times with the unadjusted and DCD adjusted levels when weighted FTE was used as the pupil measure. The McLoone index increased from 0.98 to 0.99 with Unadjusted Total State and Local Revenue per Pupil and 0.97 to 0.98 with DCD Adjusted Total State and Local Revenue per Pupil. The Verstegen index decreased from 1.04 to 1.03 with Unadjusted Total State and Local Revenue per Pupil and increased from 1.02 to 1.03 with DCD Adjusted Total State and Local Revenue per Pupil.

The Gini coefficient showed a more equitable distribution of total state and local revenues at both the unadjusted and DCD adjusted levels when using weighted FTE as the pupil measure. The Gini coefficient decreased from 0.011 to 0.07 with Unadjusted Total State and Local Revenue per Pupil and 0.014 to 0.011 with DCD Adjusted Total State and Local Revenue per Pupil.

A comparison of weighted and unweighted student counts when calculating per pupil revenue equity measures shows that values generated using weighted student counts are consistently more equitable. This offers the possibility that some of the disparity in districts per pupil revenue may be attributed to the makeup of their student body.

CHAPTER 5

RESULTS AND CONCLUSIONS

Overview

This study was designed to answer one central research question:

Does the Florida Education Finance Program equitably distribute available funding to public school districts in the state?

To answer this question, a three phase study was proposed and conducted.

Phase I

A historical review of the Florida Education Finance Program (FEFP) from 1982 through 2009 was conducted as phase one of this study. The historical review outlined the FEFP in 1982-83 and detailed changes to the FEFP during the 27 year period that followed. The FEFP in 2008-09 was then outlined to allow for comparison. Finally, a review of the relevant legal challenges to the funding of public schools in the state of Florida was conducted and discussed.

Phase II

Ten measures of dispersion or variability were employed in phase two to determine the level of distributional equity of the Florida Education Finance Program. Percentiles, range, restricted range, federal range ratio, mean, standard deviation, coefficient of variation, Gini coefficient, McLoone index, and Verstegen index were calculated for even numbered years from 1982-83 through 2008-09 on twelve measures

of per pupil revenue. The twelve measures of per pupil revenue include unadjusted state, local, and total revenues per pupil at the district level. Each of the per pupil revenues were adjusted by three economic adjustments: the District Cost Differential (DCD), the Geographic Cost of Education Index (GCEI), and the Comparable Wage Index (CWI).

Phase III

A separate analysis using Pearson product-moment correlations was conducted as phase three. Correlations between each of the twelve per pupil revenue measures in phase two and the District Cost Differential and Assessed Valuation were calculated to determine the fiscal neutrality of the Florida Education Finance Program.

Interpretation of Findings

Phase I

The historical review of the Florida Education Finance Program (FEFP) revealed that the fundamental components of the formula remained unchanged throughout the time frame of this study. The FEFP uses two central variables to adjust a district's per pupil revenue. The first, the Program Cost Factors, adjusts per pupil revenue based on the programs the students are enrolled in. The second, the district cost differential, adjusts per pupil revenue based on the cost of doing business in local economies. These variables were present in each year of the study.

Although the variables, Program Cost Factors and the District Cost Differential, were present in all years of the study, they were not unchanged. Each variable was subject to changes in the way they were calculated, and the number of them employed. In addition to these central variables, a process of supplements and guarantees were used

in the FEFP. These add-ons were used to start special programs or to stimulate certain behavior of the part of the school districts.

Phase II

Phase two of the study was proposed and conducted using twelve measures of a district's per pupil revenue and ten statistical measures of variability and dispersion. Each of the revenue and statistical measures were calculated as proposed, but their contribution to the analysis, interpretation, and final conclusions were not equal.

Revenue Measures

The Florida Education Finance Program (FEFP) formula calculates a total allocation for each district. A district's ability to provide for themselves, the Required Local Effort, is then subtracted to determine the level of state aid. This simple mathematical equation presents three components: local revenue, state revenue, and total state and local revenue. This study proposed to use each of those measures. That thinking was flawed. State revenue and local revenue have an inverse relationship. Examination of the measures of dispersion or variability presented conflicting results. But, that is the exact point. State revenue is intended to supplement local revenue. The FEFP calculates a district's total revenue without considering the source. Only after considering a district's total revenue does it turn to its ability to generate revenue on its own. An analysis of the distributional equity of the Florida Education Finance Program should take place using total state and revenue.

Adjustment of Revenues

The per pupil revenue measures were subjected to three cost adjustments. The intent of these adjustments were to determine if the cost adjustment included in the Florida Education Finance Program, the District Cost Differential, was responsible for any of the variation in distributional equity. The use of these cost adjustments did not contribute to the knowledge base of this study. Each of the three adjustments was built on the same assumption, that there were varying costs of doing business in various economies across the state. An analysis of the distributional equity of the Florida Education Finance Program should take place using unadjusted revenues.

Measures of Dispersions or Variability

This study employed ten measures of dispersion or variability. Five of these measures are resistant to inflation, five are not. This is an important point to consider. Over the course of a twenty-seven year study, the per pupil revenues of all districts rose. A measure of dispersion or variability needed to be resistant to inflation to provide useful information over the course of the study.

The percentiles, range, restricted range, mean, and standard deviation were not resistant to this inflationary pressure and therefore could not be used in a final analysis. These measures were not without contribution. In many cases, they were necessary for the calculation of other measures that were useful. The measures that were resistant to inflationary pressure, and therefore useful in the final analysis, were the federal range ratio, coefficient of variation, Gini coefficient, McLoone index, and Verstegen index.

Findings

Although this study proposed to use twelve measures of per pupil revenue, in the end only one measure should be utilized to measure the distributional equity of the Florida Education Finance Program. The most useful measure of a district's per pupil revenue is Unadjusted Total State and Local Revenue per Pupil. This study also proposed to use ten measures of dispersions or variability. Five of those measures proved to be resistant to inflation: the federal range ratio, coefficient of variation, Gini coefficient, McLoone index, and Verstegen index.

Analysis of Unadjusted Total State and Local Revenue per Pupil using the federal range ratio was presented in Table 32 and Figure 35 in Chapter 4. They show that the federal range ratio for Unadjusted Total State and Local Revenue per Pupil was between 0.10 and 0.16 for the length of this study. The federal range ratio has a minimum value of zero. The closer the value of the federal range ratio to zero, the more equitable the distribution.

The coefficient of variation of Unadjusted Total State and Local Revenue per Pupil for the study is detailed in Table 31 and Figure 34 of Chapter 4. They show values between 0.03 and 0.05 for the length of the study. A coefficient of variation of 0.03 means that 68% of districts had per pupil revenues within 3% of the mean. It also shows that 95% of school districts had per pupil revenues with 6% of the mean. In their book entitled *School Finance: A Policy Perspective* Odden and Picus (1992) recommend a coefficient of variation of 10%, or 0.10, as an equity goal.

Analysis of Unadjusted Total State and Local Revenue per Pupil using the McLoone index is shown in Table 32 and Figure 36 of Chapter 4. They show the McLoone index to be between 0.97 and 0.98 during the length of our study. Odden and Picus (1992) provide a framework for interpreting the McLoone index and suggest that a value of 0.95 or higher is desirable. The closer the McLoone index is to 1.00 the more equitable the distribution. The values of 0.97 to 0.98 from this study suggest a more equitable distribution than Odden and Picus suggest as a policy goal.

Analysis of Unadjusted Total State and Local Revenue per Pupil using the Verstegen index is shown in Table 32 and Figure 37 of Chapter 4. They show the Verstegen index to be between 1.03 and 1.05. This index can be 1.00 and higher and increase as disparities in the top half of the distribution increase. The Verstegen index is calculated same as the McLoone index except it deals with the upper half of the distribution of revenues. A policy goal was set at 0.95 for the McLoone index which would translate into a 1.05 for the Verstegen index. The values of the Verstegen index values of 1.03 to 1.05 found in this study suggest that the policy goal has been met or exceeded.

The Gini coefficient of Unadjusted Total State and Local Revenue per Pupil for the study is detailed in Table 35 and Figure 40 of Chapter 4. They show values between 0.010 and 0.017. The Gini coefficient ranges from 0 to 1 with 0 indicating perfect equity. Values of 0.010 and 0.017 are extremely close to 0 indicating close to perfect equity.

The use of the federal range ratio, coefficient of variation, McLoone Index, Verstegen index, and Gini coefficient are supported by the literature to be well accepted

measures of distributional equity. Each of these measures, when employed in our study, shows Unadjusted Total State and Local Revenues per Pupil to be distributed equitably.

Phase III

The purpose of phase three was to determine the source of any distributional inequality. The use of the measures of dispersion and variability in phase two did not show the existence a distributional inequality in the examination of Unadjusted Total State and Local Revenues per Pupil. The correlations found in phase three are useful nonetheless in determining the wealth neutrality of the Florida Education Finance Program. Using the same arguments put forth in phase two, the analysis of the relationship of revenues per pupil to our variables will be limited to Unadjusted Total State and Local Revenue per Pupil.

The relationship between the Unadjusted Total State and Local Revenues per Pupil and the District Cost Differential are detailed in Table 38 and Figure 45 of Chapter 4. They show a Pearson-moment correlation between 0.21 and 0.82 for the time period of this study. This shows a moderate to strong relationship between Unadjusted Total State and Local Revenues per Pupil and the District Cost Differential. This relationship would be of some concern if the other measures showed an inequitable distribution of revenues. What this does tell us is that there is a definite relationship, which varies in strength, between the revenues a district receives and the cost of doing business in that district.

The relationship between the Unadjusted Total State and Local Revenues per Pupil and Assessed Property Value per Pupil is detailed in Table 41 and Figure 50 of

Chapter 4. They show a Pearson-moment correlation between 0.27 and 0.69 for the time period of this study. This shows a moderate relationship between Assessed Property Value per Pupil and Unadjusted Total State and Local Revenue per Pupil. It is not unexpected that there would be a relationship between a district's land value and their revenues.

Implications of Findings

This study was constructed with one central research question:

Does the Florida Education Finance Program equitably distribute available funding to public school districts in the state?

The findings show that the Florida Education Finance Program does in fact distribute available revenue equitably. Policy makers and taxpayers in the state of Florida should feel confident that funds are distributed equitably across that state. With an equitable formula in place, researchers and policy makers should turn their attention to the question of adequacy.

Recommendations for Future Study

To produce a workable study, it was necessary to limit the scope of the current study. By limiting the scope of this study, some issues were intentionally left to future study. In the initial introduction, two key questions were presented that currently guide the school funding debate:

1. How much money is needed?
2. What is fair in the distribution of available funding (Ramirez, 2003)?

This study sought to answer the question of equity, but left the question of adequacy to future research. This study focused exclusively on the state of Florida. Future research in other states using a method similar to this would allow for cross-state comparisons.

Two additional questions became apparent as this study unfolded that would be ripe for future research. The first is the issue of program cost factors. Future research should examine the number of program cost factors employed in the Florida Education Finance Program. The historical review conducted as phase one of this study, found that the number and value of the Program Cost Factors varied greatly. What is the optimal number of Program Cost Factors needed to differentiate the costs of educating students? How should the value of these factors be determined? The second question that became apparent as this study unfolded centered on the District Cost Differentials. In this study, three different cost adjustments were employed: the Geographic Cost of Education Index (GCEI), the Comparable Wage Index (CWI), and the District Cost Differential (DCD). Each of these indexes produces different values that would affect the distribution of revenues to local districts if employed by the Florida Education Finance Program. No position was taken by this study as to which of these indexes best distributes revenues based on the economic conditions of each district. Future and continual study should take place to determine the optimal method for adjusting revenues based on local economic conditions.

The construction of the method of this study included twelve per pupil revenue measures and ten measures of dispersions or variability. Future study should take clues from the findings of this study. The use of state or local revenues in a state like Florida

does not lend additional information to the study. The elimination of these revenue variables would streamline the study. The use of multiple cost adjustments also was found to contribute little to the study. The elimination of these cost adjustments would also streamline the study.

The elimination of certain revenue measures and cost adjustments opens the door to the possibility of including per student program weights in future studies. This study examined data for a single year using weighted student counts as an adjustment to per pupil revenues. No conclusions can be drawn from that single year's data, but the results suggested that the type of students in a given district contribute as much to the revenues as location.

Conclusion

This study was originally patterned after a study completed in 1982. The intent of this study was to provide additional data, that when coupled with data from the original study, would allow for the examination of distributional equity in the state of Florida prior to the implementation of the Florida Educational Finance Program. Due to the availability of additional equity measures, and changes to the calculations of existing ones, that was not possible. This study takes no position on the prior study. It is important to note that the study completed in 1982 by Dr. Shiver came to a dramatically different conclusion. Dr. Shiver concluded that the Florida Education Finance Program did not distribute funds equitably.

By the very nature of the contradictory findings, one must question the findings of the previous study. This study ultimately used five different measures of distributional

equality to measure the effectiveness of the Florida Education Finance Program. All five of the measures point to distributional equity. None of the existing measures point to an inequitable distribution.

Our study sought to answer a single question:

Does the Florida Education Finance Program equitably distribute available funding to public school districts in the state?

There is no contradiction in the findings. The Florida Education Finance Program does, in fact, distribute available funds to school districts in the state of Florida equitably.

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ABOUT THE AUTHOR

Curtis Todd Bowden received a Bachelor of Science Degree in Business Administration with a major in Accounting from the University of South Florida in Tampa, Florida in 1993. He subsequently earned a Masters of Education Degree in Educational Leadership from the University of South Florida in 1998.

Mr. Bowden is a third generation educator, following both his mother and his grandmother on his father's side into the profession. He has worked in a variety of instructional and administrative positions with the school districts of Hillsborough and Sarasota Counties on Florida's gulf coast.

His administrative experiences include assistant principal positions at both a comprehensive and a technical high school in Hillsborough County. He has also served as an adult high school principal and an adult technical school principal in Hillsborough County.

Mr. Bowden currently serves as the director of the Sarasota County Technical Institute in Sarasota, Florida.