1   MARK D. ROSENBAUM (BAR NO. 59940)
    CATHERINE E. LHAMON (BAR NO. 192751)
2   PETER J. ELIASBERG (BAR NO. 189110)
    ACLU Foundation of Southern California
3   1616 Beverly Boulevard
    Los Angeles, California 90026
4   Telephone: (213) 977-9500

5   JACK W. LONDEN (BAR NO. 85776)
    MICHAEL A. JACOBS (BAR NO. 111664)
6   MATTHEW I. KREEGER (BAR NO. 153793)
    LEECIA WELCH (BAR NO. 208741)
7   J. GREGORY GROSSMAN (BAR NO. 209628)
    Morrison & Foerster LLP
8   425 Market Street
    San Francisco, California 94105-2482
9   Telephone: (415) 268-7000

10 ALAN SCHLOSSER (BAR NO. 49957)
    KATAYOON MAJD (BAR NO. 211756)
11 ACLU Foundation of Northern California
    1663 Mission Street, Suite 460
12 San Francisco, California 94103
    Telephone: (415) 621-2493
13
    JOHN T. AFFELDT (BAR NO. 154430)
14 Public Advocates, Inc.
    1535 Mission Street
15 San Francisco, California 94103
    Telephone: (415) 431-7430
16
    Attorneys for Plaintiffs
17 ELIEZER WILLIAMS, etc., *et al.*

18   SUPERIOR COURT OF THE STATE OF CALIFORNIA

19   COUNTY OF SAN FRANCISCO

20 ELIEZER WILLIAMS, a minor, by Sweetie   No.   312236
    Williams, his guardian ad litem, *et al.*, each
21 individually and on behalf of all others   **DECLARATION OF LEECIA WELCH IN**
    similarly situated,   **SUPPORT OF PLAINTIFFS'**
22   Plaintiffs,   **DESIGNATION OF REBUTTAL WITNESS**
                    v.   **DOUGLAS S. REED**
23
    STATE OF CALIFORNIA, DELAINE
24 EASTIN, State Superintendent of Public   Date Action Filed: May 17, 2000
    Instruction, STATE DEPARTMENT OF
25 EDUCATION, STATE BOARD OF
    EDUCATION,
26
                              Defendants.
27 ─────────────────────────────────

28

1   I, LEECIA WELCH, hereby declare as follows:

2   1.   I am an attorney licensed to practice law in the State of California. I am an

3   associate at the law firm of Morrison & Foerster LLP, counsel of record for plaintiffs Eliezer

4   Williams, et al. ("plaintiffs") in this action. I have personal knowledge of the facts stated herein

5   and could testify competently to them if called to do so.

6   2.   Plaintiffs have provided a list of the persons whose expert opinion testimony the

7   plaintiffs intend to offer on rebuttal at trial of this action, either orally or by deposition testimony.

8   The list includes Douglas S. Reed, to whom this declaration refers.

9   3.   Dr. Reed has agreed to testify at trial.

10   4.   Dr. Reed will be sufficiently familiar with the pending action to submit to a

11   meaningful oral deposition concerning the specific testimony, including any opinions and their

12   bases, that he is expected to give at trial.

13   5.   Dr. Reed is not charging a fee for providing deposition testimony, consulting with

14   the attorneys for plaintiffs, or for his research and other activities undertaken in preparation of the
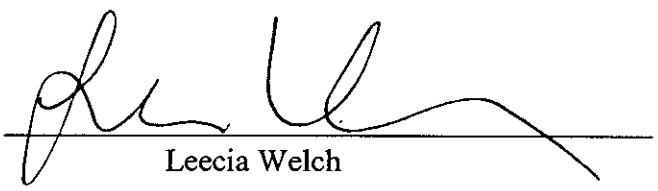
15   attached rebuttal expert report.

16   6.   Attached to my declaration as Exhibit A and incorporated by this reference is a

17   *curriculum vitae* providing Dr. Reed's professional qualifications, pursuant to section

18   2034(f)(2)(A) of the California Code of Civil Procedure.

19   7.   Attached to my declaration as Exhibit B and incorporated by this reference is

20   Dr. Reed's rebuttal expert report. The following is a brief narrative statement of the general

21   substance of the testimony that Dr. Reed is expected to give at trial, pursuant to section

22   2034(f)(2)(B) of the California Code of Civil Procedure. Dr. Reed rebuts opinions offered in the

23   expert reports of State experts Christine Rossell, John Kirlin, Caroline Hoxby, and Margaret

24   Raymond. In particular, Dr. Reed identifies State experts' errors regarding the efficacy and

25   sufficiency of school finance in California and explains that funding and access to resources are

26   not necessarily correlated and that analysis of local revenues shows inequitable distribution of

27   dollar resources. The foregoing statements are only a general summary of the issues and

28

1

1   conclusions discussed and documented more fully in Dr. Reed's rebuttal expert report, attached as

2   Exhibit B.

3   I declare under penalty of perjury under the laws of the State of California that the

4   foregoing is true and correct.

5   Executed at San Francisco, California, this 15th day of September, 2003.

6

7

8   Leecia Welch

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

EXHIBIT A

Douglas S. Reed
Department of Government,
Georgetown University
Washington, DC 20057
202-687-8422
reedd@georgetown.edu

Academic Positions

Guest Scholar, Brookings Institution, Washington, DC, August 2003-July 2004
Associate Professor, Department of Government, Georgetown University, August 2003 to present
Assistant Professor, Department of Government, Georgetown University, August 1995 to 2003
Acting Instructor, Yale University, Fall 1994 and Fall 1991

Education

Graduate: Phd in Political Science, May 1995, Yale University
                    MPhil in Political Science, May 1992, Yale University
                    MA Political Science, May 1991, Yale University

                    Phd Thesis: *Democracy v. Equality: Legal and Political Struggles Over School Finance Equalization*, Professor Rogers M. Smith, chair

Undergraduate: BA in Politics and History (Double Major), June 1987,
                    University of California, Santa Cruz

Phd Examination Fields
American Politics, Political Philosophy, Contemporary Political Theory

Teaching Fields
Constitutional Law, Civil Rights and Civil Liberties, Law and Society, Courts and Social Movements, Introduction to American Politics, Courts and Public Policy, Race and American Politics

Research Interests
Equality and American Politics, Education Policy, Federalism, Courts and Social Change, State Constitutional Law, Federalism, Judicial Politics and Education Reform, 14th Amendment Jurisprudence, Race and American Politics

Writings and Publications
Books
On Equal Terms: The Constitutional Politics of Educational Opportunity, Princeton University Press, 2001.

Articles
"Not in My Schoolyard: Localism and Public Opposition to Funding Schools Equally," *Social Science*

Quarterly vol. 82:1 (March 2001), 34-50.

"Popular Constitutionalism: Toward a Theory of State Constitutional Meanings," *Rutgers Law Review*, vol. 30, no. 4 (Summer 1999)

"Twenty-Five Years After *Rodriguez:* School Finance Litigation and the Impact of the New Judicial Federalism," *Law and Society Review*, vol. 32, no. 1 (March 1998)

"The People v. The Court: School Finance Reform and the New Jersey Supreme Court," *Cornell Journal of Law and Public Policy*, 4:1, Fall 1994

Book Chapters
"The Politics of Consent to Judicial Review: Assessing the Myths of Marbury," forthcoming in *Arguing Marbury v. Madison*, Stanford University Press, Mark Tushnet, editor

Court-Ordered School Finance Equalization: Judicial Activism and Democratic Opposition," in *Developments in School Finance 1996*, William J. Fowler, ed. (National Center for Educational Statistics: Washington, DC), pp93-120.

Book Reviews and Miscellaneous
"Considering Ashcroft: Still Running as if Elections Were Tomorrow," *Legal Times*, Sept. 9, 2002, p50"

"Measuring the Impact of *Brown v. Board.*" In *Brown v. Board: Its Impact on Education and What it Left Undone*. Washington, DC: Woodrow Wilson International Center for Scholars, Winter, 2002, pp17-21.

"State Courts and Educational Finance" In *Brown v. Board: Its Impact on Education and What it Left Undone*. Washington, DC: Woodrow Wilson International Center for Scholars, Winter, 2002, pp22-28.

Book Review: American Constitutionalism: From Theory to Politics by Stephen M. Griffin, *The Law and Politics Book Review*, vol. 7, no. 3 (March 1997), 114-7.

"Dred Scott," in *The Historical Encyclopedia of World Slavery*, Junius P. Rodriguez, Joan Cashin and John B. Boles, Editors, ABC-CLIO Publishers

"The U.S. Constitution and Slavery," in *The Historical Encyclopedia of World Slavery*, Junius P. Rodriguez, Joan Cashin and John B. Boles, Editors, ABC-CLIO Publishers

Articles in Progress
"To Litigate or Initiate: Right to Die Claims and Initiative Politics,"

"The Judicial Management of Crisis: The Case of Alleged Fugitive Slaves in Antebellum District of Columbia"

Book Proposals Under Review
Our Moral Constitution: Federalism and the Politics of Morality, book proposal under review at Stanford University Press

Selected Invited Presentations
American Enterprise Institute, January 2004, Conference on Choice and Supplemental Services in No Child Left Behind, "The Experience of Montgomery County, Maryland, 2001-03"

Harvard University, October 2003, Conference on the Politics of School Boards, "Whither Localism: The Politics of Implementing No Child Left Behind"

Princeton University, October 2002, Politics Department, Public Law Symposium
Woodrow Wilson International Center for Scholars, Washington, DC, March 2002.
University of California, Berkeley, Department of Political Science, December 2000
Georgetown University Law Center, Law & Society Research Seminar, September 1998

Conference Papers
"The Judicial Management of Crisis: The Case of Alleged Fugitive Slaves in Antebellum District of Columbia," Western Political Science Association Annual Meeting, Denver, CO, March 2003.

"To Litigate or Initiate: Right to Die Claims and Political Mobilization," American Political Science Association Annual Meetings, Boston, MA, August 29-Sept. 1, 2002

"The (Possible) Electoral Face of Legal Mobilization: Some Organizational Dimensions of Early Right to Die Cases," Western Political Science Association Annual Meeting, March 2002, Long Beach, California

"Property Tax Relief and School Desegregation: A Policy Proposal," Midwestern Political Science Association Annual Meeting, April 2001, Chicago, IL.

"Constituting the Right to Die: Extra-Judicial Conceptions of Constitutional Rights," Midwestern Political Science Association Annual Meeting, April 2001, Chicago, IL.

"The Public's Opinion: Support for Court-Ordered School Finance Reform," Midwestern Political Science Association Annual Meeting, Chicago, IL, April 27-April 30, 2000.

"Racial Isolation and Property-Tax Relief: A Policy Proposal for Court-Ordered School Desegregation," Law and Society Annual Meetings, Miami Beach, FL, May 26-29, 2000.

"The Juridico-Entertainment Complex: A New Constitutional Regime," presented at the Law and Society Annual Meetings, Chicago, IL, May 1999

How Empirical Ought Constitutional Theory Be? Georgetown/Maryland Constitutional Theory Discussion Group, Washington, DC, December 6-7, 1998

"I Can Play That: Social Movement Repertoires and State Constitutional Politics," presented at the

American Political Science Association Annual Meeting, Boston, MA, August 1998

"State Constitutionalism and Social Change: The Limits of Countermajoritarianism" American Political Science Association, August 30, 1997

"*Agostini v. Felton*: The Supreme Court, Religion and Title I Funding," National Center for Education Statistics, Summer Data Conference, Washington, DC, July 31, 1997.

"State Supreme Courts and Democratic Opposition: The Possibilities and Limits of Counter-Majoritarianism," Northeastern Political Science Association, Boston, MA.

"Court-Ordered School Finance Equalization: Judicial Impact, Democratic Opposition and the Promise of Legal Activism," National Center for Education Statistics, Summer Data Conference, July 26, 1996

Northeastern Political Science Association, Newark, New Jersey. "State Supreme Court Influence on Public School Finance Equality: Evidence from Connecticut and New Jersey," Nov. 1993.

Law & Society Association Annual Conference, Chicago, Illinois. "Political Culture or Political Institutions?: State Supreme Courts and Public School Financing," May 29, 1993.

Research Support and Fellowships Received (in reverse chronological order)

Advanced Studies Fellowship, Brown University, 2003-04 (to fund a full year of research on implementation of the No Child Left Behind Act)
Competitive Grant-in-Aid, Graduate School of Arts & Sciences, Georgetown Univ. Fall 2002
Competitive Grant-in-Aid, Graduate School of Arts & Sciences, Georgetown Univ, Spring 2002
Competitive Grant-in-Aid, Graduate School of Arts & Sciences, Georgetown Univ, Fall 2001
Summer Research Grant, Graduate School of Arts & Sciences, Georgetown Univ., 2001. (Research support for new project on the politics of the right-to-die movement)
Junior Faculty Fellowship, Graduate School of Arts & Sciences, Georgetown Univ., Fall 1998 (for completion of *On Equal Terms* book manuscript)
Grant-in-Aid for Faculty Research, Georgetown University, Spring 1998 (for research on state initiative politics)
National Academy of Education Spencer Post-Doctoral Fellowship, 1996-1997 (for research and writing of *On Equal Terms*)
Brookings Institution Research Fellowship, Washington, DC 1993-94 (dissertation research and writing)
Yale University Dissertation Fellowship, 1993-94 (dissertation research and writing)
Spencer Foundation Dissertation Year Fellowship, 1992-93 (dissertation research and writing)
John F. Enders Research Assistance Grant, Yale University, 1992 (travel grant)

Honors and Awards

Honorable Mention, American Judicature Society, Best Paper in Judicial Politics, 1999
Dissertation unanimously awarded Distinction by Political Science Dept, Yale Univ. May 1995
James M. Cox Fellow in Public Affairs, Yale University, 1990-91

University Fellow, Yale University, 1988-1990
National Science Foundation Graduate Fellowship Honorable Mention, 1989
Phi Beta Kappa, UC Santa Cruz, 1987
Honors in Politics, UC Santa Cruz, 1987
Honors in History, UC Santa Cruz, 1987
College Honors, Cowell College, UC Santa Cruz, 1987
National Dean's List, 1986

EXHIBIT B

Expert Witness Statement

of

Douglas S. Reed

Associate Professor of Government

Georgetown University

September 15, 2003

I. Biographical Information

I am an Associate Professor of Government at Georgetown University where I conduct research on both judicial politics and the politics of education. I am the author of *On Equal Terms: The Constitutional Politics of Educational Opportunity* (Princeton University Press, 2001) which surveys the impact of state court decisions striking down school finance systems in several states, as well as several articles on the politics and policy impacts of efforts to change school finance systems (see curriculum vita for further details.) I received my PhD (with distinction) in Political Science from Yale University in 1995 and my BA from University of California, Santa Cruz in 1987. I have received numerous fellowships to study the politics of school reform and school finance litigation and am currently a guest scholar at the Brookings Institution in Washington, DC where I am conducting research on the politics of local implementation of No Child Left Behind. I am also a Fellow in the Advanced Studies Program in the School of Education at Brown University, which is funding my research leave at Brookings, through grants from the Spencer Foundation and the Hewlett Foundation. I am receiving no compensation for this expert witness report.

II. Overview of Rebuttal Argument

This report is an expert statement in support of plaintiffs' claims in the Williams v. State of California litigation. The central claim of the plaintiffs' case rests on a simple empirical assumption: that educational opportunities (primarily, but not exclusively, in the form of resources) are not being provided in sufficient quantity to the plaintiff class to meet the state's obligation under the California Constitution. This expert witness statement will focus primarily on the school funding aspects of the plaintiffs' claims. Regarding school funding, the defendant state's expert witness reports have stressed two central points in their analyses: the degree of

equity in California's system of public financing and the lack of a correlation between revenue and expenditure levels and demographic characteristics of students defined as "at-risk."[1] This expert witness rebuttal statement refutes those points. This rebuttal report will first address the extent to which the state's expert witnesses have mischaracterized the degree of equity in California's public school funding and, second, show that the state's system of financing K-12 education in California currently affords students of different demographic groups different opportunities to learn because it allots them substantially different levels of key educational resources, particularly locally-derived revenues, textbook expenditures and average teacher salaries. Taken together, these findings show that California's educational system has a significant degree of inequality, both in its overall financing equity (the distribution of key resources) and in its degree of equal educational opportunity.

This report is organized into five major sections. The next section (Part III) discusses the relevant terms and concepts needed to undertake an equity analysis of a system of public school funding. Part IV then turns to the primary findings of the state's expert witness reports and examines how they misconceive important elements of California's school funding structure. Part V then provides an equity analysis of California's public school expenditures and revenues and shows that there is a systematic and extensive deprivation of fundamental educational resources within California schools that disproportionately affects migrant students, students in poverty and students in districts that are less able to generate substantial local revenues. Through an analysis of the state's own district level revenue and expenditure statements from the 2001-02 academic year, combined with pupil demographic data for the same year from each district, this

---

[1] See, for example, Dr. Christine H. Rossell's expert statement at 18-20 and Dr. John J. Kirlin's expert statement at 9-11, 22 and 26.

section will analyze the equity of the distribution of these basic educational elements and highlight the underlying structural elements of California's school finance system that produce these inequities. Part VI continues the equity analysis by exploring through multivariate regression the degree of equal educational opportunity in California. Part VII concludes the report by highlighting the results of school funding litigation in other states and assessing the relative efficacy of court involvement in school funding litigation.

III.   Defining Equality and Equity in School Finance

A system of schooling required under the state constitution may consist of many elements, but buildings, teachers and such teaching fundamentals as textbooks must be regarded as obligatory elements of a K-12 education. The complaint lays out in graphic detail the plaintiffs' individual deprivations of these basic educational elements, but before I examine whether those deprivations are systematic rather than anecdotal, I want to stress some important conceptual and analytical distinctions that must be made explicit before undertaking an equity analysis of school funding.

First, it is exceptionally important to distinguish between a district-level per pupil equity analysis and a pupil-level per pupil equity analysis, a distinction neither Rossell nor Kirlin makes. Districts come in all sizes and in a state like California they range in size from the hundreds of thousands of students to merely tens of students. If one were to simply take the average of each district's per pupil spending, one would be engaging in a district level analysis. To do so, however, would mask the relative size differences among school districts. The more useful approach is to weight each district's per pupil spending by its size relative to the number of the students in the state. That way, one can fully capture the experiences of pupils, rather than districts.

3

A brief example helps to illustrate this point. Let's assume there are only three districts in a state, with the following hypothetical spending and enrollment levels.

District	Expenditure Per Pupil	Enrollment	Total Expenditure
District 1	$1000	1000	$1,000,000
District 2	$5000	50	$250,000
District 3	$10,000	10	$100,000
Statewide Totals		1060	1,350,000

From this table we can quickly see the consequences of relying on a district-level average rather than a pupil-level average. The district-level average is simply the sum of the first column divided by the number of districts (16,000/3), or $5,333. But if we want to fully capture the resource environments of all students equally, we need to divide the statewide total expenditures by the statewide total enrollment. That figure (1,350,000/1060) produces a significantly different average per pupil expenditure: $1273.58. Which is the "correct" average? Both are mathematically correct; they simply are measuring different things. The "best practices" approach in school equity analysis, however, is to conduct a pupil-level analysis because it captures the lived exposure of students to resources. For the purposes of this litigation, then, it is important to weight per pupil expenditures and revenues by the size of the districts, particularly since there is such an enormous range of district enrollments in California. Since neither Dr. Rossell nor Dr. Kirlin state that the averages they present are weighted for district enrollment, I assume they have not weighted them.

Second, it is important to recognize that money, alone, does not provide for an excellent educational environment. Numerous other factors play a major role in the education of children: parental expectations and involvement, school safety, household poverty-levels, curricular offerings are just a few among many. But what ought not be overlooked is that financial resources are a necessary but not sufficient condition for the provision of public education. Well-funded schools may be poor educational environments (for reasons independent of resources), but poorly-funded schools will rarely be centers of excellence. As a result, understanding the distribution of money and resources within an educational system needs to be seen as the beginning of the equity analysis, not its conclusion.

Third, abundant scholarship shows us that different students have differing capacities to utilize the resources schools place before them, for reasons independent of talent or intelligence. Students who are at-risk (children in poverty, overcoming language barriers, confronting violence in neighborhoods, or who frequently move) may very well require additional resources to achieve the same level of learning (or even to derive the same opportunity to learn from those resources). But before we can respond to students with special needs, we need to ensure that all students receive an equitable package of resources. The equity analysis presented here demonstrates that for certain categories of students, that initial condition of equity has not been met by the state of California.

IV.   State's Experts' Claims of Equity in California School Funding are Mis-stated

The bulk of the school finance analysis conducted by the states' experts purports to show a) that California's school funding system is relatively equitable and b) that there is virtually no meaningful relationship between the educational resources that the plaintiffs claim are not being sufficiently provided and the test scores for the students lacking those resources. This expert

5

witness statement disputes that first claim and, in some measure, questions the relevance of the second claim. In short, my findings refute Dr. Rossell's claim that California "has achieved resource equity to the extent practicable in a democratic society."[2] And while the second claim -- rooted primarily in "education production function" analyses -- may offer valuable insights and sensible advice for public policy discussions about what ought to be done to improve public education in California and across the nation, this approach, alone, cannot give us a full picture of the inequities of the school funding system within California. By looking only at the relationships between key demographics and test scores, the state's expert witnesses, particularly Drs. Hoxby and Raymond, ignore the more fundamental demographic inequities in the *distribution* of resources, inequities the analysis below demonstrates.

The defendant state's experts offer education production function analyses. I do not offer one below, but instead I build on the most robust and universally agreed findings of those studies: What is most clearly known about education production functions is that household income levels of students and educational backgrounds of parents are the best predictors of test scores. In addition, there is a demonstrable and robust test-score gap between African-American and white students. Beyond that, there is significant disagreement among scholars as to whether any particular input yields any particular increase in test score.[3] Given that finding, however, a

---

[2] Rossell expert witness statement, at 32.

[3] The reasons for the confusing welter of studies are numerous. First, to evaluate the improvement of schools exclusively through an education production function analysis is to assume that schools have a single goal (the increase of test scores) and that the factors that contribute to the variation in test scores are both fully knowable and measurable and any biases or error terms (included omitted variable bias) are distributed randomly across students. Of course, schools and the entire education process have a number of multiple, possibly even contradictory goals, and the operationalization of learning and teaching via quantitative methods is never easy, nor does it lend itself easily to replication. Indeed, even minor differences in specifications of such relatively "objective" factors such as poverty levels, educational levels of

sound and responsible equity analysis must determine whether students in poverty, for example, are being provided – at a minimum – resources comparable to students who are not in poverty. The analysis presented here, then, is aimed at helping the court to determine whether the resources necessary for learning are distributed in a roughly equal fashion. The remainder of this expert report will detail the nature of both revenue generation and expenditure patterns by key demographic groups in California.

V.   Distribution of Educational Resources in California, 2001-02

A. Data Sources and Methods

The fiscal data for this report was obtained from the California Department of Education website (http://www.cde.ca.gov/fiscal/financial/financialdata.htm). The J-200 file lists the revenue and expenditure details of every school district in the state. Selected revenue and expenditure categories were chosen and aggregated by school district. The fiscal data was then merged with California school and staffing demographic data from the National Center for Education Statistics's Common Core of Data for the same academic year. The district-level findings presented here are weighted for district enrollment to provide a per pupil analysis, per the

---

parents, racial categories of students, can produce dramatically different results. In the most recent public demonstration of this variability in education research findings, Professor Alan Krueger of Princeton University reanalyzed the data gathered by a research team led by Professor Paul Peterson of Harvard University that explored the effects of a voucher system on test score performance. To study the effects of vouchers on test scores of minority students, Professor Peterson's team had coded students in the study by race, according to the race of his or her mother alone. By including the race of the father, Professor Krueger found that the key finding of the Peterson, et al. study (that attending school within a voucher system yielded a statistically significant increase of test scores for African-American students) was a statistical artifact of their coding of the racial identity of students. The findings of the Peterson team are most easily accessible through their book, *The Education Gap: Vouchers and Urban Schools* by William G. Howell and Paul E. Peterson with Patrick J. Wolf and David E. Campbell. (Washington, DC: Brookings Institute Press, 2002.) Professor Krueger's reanalysis of the New York City data is available on-line at http://www.irs.princeton.edu/pubs/pdfs/470_h.pdf.

standard academic procedure.[4] Unified districts were then analyzed separately from elementary-only districts in order to ensure similar entities were compared. It would be grossly distorting to compare the distribution of both revenues and expenditures for unified districts along with elementary districts. This, again, is a "best-practices" procedure in school equity analysis, but it is unclear whether defendants' experts employed it.

B. Data Limitations: What the Data Cannot Address

The analysis below gives us a clear picture of the extent to which there are systematic patterns in the distribution of resources (both revenues and expenditures), by key demographic groups and district-level characteristics. However, because fiscal data are not reported at a school-level analysis we cannot determine if there are significant intra-district variations. Unless the state changes its accounting procedures that kind of analysis is impossible, given publicly accessible data. In addition, these data are only a single year observation. Although such a "snapshot" is very useful to see the overall distribution of revenues and funds, it is not very helpful to locate any *particular* district within that distribution. Spending patterns for the state as a whole are most likely quite robust and stable, but individual districts may fluctuate over time,

---

[4] See Robert Berne and Leanna Stiefel *The Measurement of Equity in School Finance: Conceptual, Methodological and Empirical Dimensions* (Johns Hopkins University Press, 1984), pp7-43 for an overview of the methodological considerations at issue. The district figures were weighted as follows: the revenue or expenditure total for each district was divided by the district student membership to obtain a district-level per pupil figure. That figure was then multiplied by the ratio of the district enrollment to the statewide enrollment for that category of school district (ie, unified or elementary-only district). The weighted per pupil expenditure and revenue figures represent, then, the per pupil expenditure or revenue each district allots to its share of the statewide total of students. For figures 1 through 4, the weighted mean is the sum of the weight-adjusted per pupil expenditures. The minimum and maximum figures are unweighted (because at least one student is at those expenditure or revenue points). For figures 5-10, percentile cut points were calculated, based on the weighted per pupil expenditure and revenue figures, and the average demographic percentages for each percentile interval were reported on the graph. Tables

particularly if they have embarked on a spending program to make up for previous years' low-levels of spending. Finally, it is quite possible that other obstacles, beyond the brute facts of money, prevent certain districts from ensuring an adequate distribution of resources to their students. Just as money is not everything in educational performance, money is not everything in the distribution of money. The actions of administrators, principals and teachers or poor oversight may compound whatever inequities that are demonstrated here. The numbers are a starting point to the equity analysis, not an ending point.

C. Objects of Analysis and Forms of Measurement

What is to be studied? I have selected some key variables that directly relate to the plaintiffs' claims in order to determine whether there are any systematic biases in the variables' distribution. By examining Total Expenditures, Textbook Expenditures, Local Revenues (Non-Revenue Limit) and the Average Teacher Salaries, we can view the problem of resources distribution from several angles, giving us a fuller picture of educational finance in California. The equity analysis below examines first the range of these categories (the top-most and bottom-most pupils) and the weighted mean. While the range is somewhat misleading because it, alone, cannot tell you how many pupils are located at various positions on that scale, it is useful to give an intuitive and accessible picture of the distribution of educational resources in California. The weighted mean is probably the best indicator of those offered here because it provides a measure of the resources to which the average student in a unified district and an elementary district is exposed.

---

1 and 2 present regression analyses of the weighted expenditure and revenue figures against district-level demographic percentages, as described in the body of this report.

D. Total Expenditures

Figure One shows the high, low and weighted mean of total expenditures in California as reported in the J-200 data files, by type of school district. At the upper limits, we see a significant spike above the mean (roughly $22,400 per pupil for unified districts and $30,800 for elementary districts), but only a few districts reach those high levels. The weighted means for both elementary and unified districts are similar, $6698 and $6969 respectively. It is worth noting that half of California's pupils in unified districts are clustered between $6,970 and $4360 per pupil on a weighted basis. While these expenditure ranges are not out of line given the experiences of other states,[5] it simply is not true (as the state's expert witness Dr. Christine Rossell claims) that California's per pupil expenditures "are higher than the national average".[6] The national per pupil total expenditure as reported by the National Center for Education Statistics was $8,745 for the 2001-02 academic year.[7] Indeed, the state's own expert Dr. John

---

[5] For example, in my study of Kentucky, Texas, New Jersey and Tennessee I found that the top spending districts ranged from 2-4 times the weighted median. See Douglas S. Reed, *On Equal Terms: The Constitutional Politics of Educational Opportunity* (Princeton University Press, 2001), pp23-25.

[6] Expert witness statement of Dr. Christine Rossell, at 33. She also writes on p18 that "California is above average in per pupil expenditures." Id. at 18. These statements are factually incorrect. Moreover, if we took at face value her explanation that California's position is under-ranked because California does not report lottery revenue, we still could not find the statement to be factually correct. Lottery revenues account for 1.5% of total educational revenues in the state. California Department of Education, Fact Book 2002: Handbook of Education Information, at p98. Available on-line at http://www.cde.ca.gov/resrc/factbook/factbook02.pdf. Accessed 13 September 2003. Assuming we increased the per pupil expenditure by 1.5%, we still could not place California "above the national average." (To do the math: 101.5% of 6969 = 7073.54, still substantially below the U.S. Department of Education's national average of $8,745. See note 7 below.) As the California Department of Education itself puts it, "While the lottery revenue is appreciated, it is a minor source that cannot be expected to provide major improvements in K-12 education." Id.

[7] *Digest of Education Statistics, 2002*, Chapter 2 "Elementary and Secondary Education," Table 166. Available on-line at http://nces.ed.gov/pubs2003/digest02/tables/dt166.asp. Accessed 12 September 2003.

Kirlin refutes Dr. Rossell when he writes, "California schools may have somewhat less resources than the national average and most of the eight comparison states" that Dr. Kirlin studied.[8] Clearly, by both federal statistical sources and the state's own expert witness, California's per pupil total expenditures are below average. Moreover, the ranges of expenditures are quite striking and reveal a meaningful gap in the educational resources offered students at the top and bottom ends of these distributions.

Figure 1
California Unified and Elementary Districts
High, Low and Weighted Mean Per Pupil Total Expenditures,
**2001-02 School Year**

---
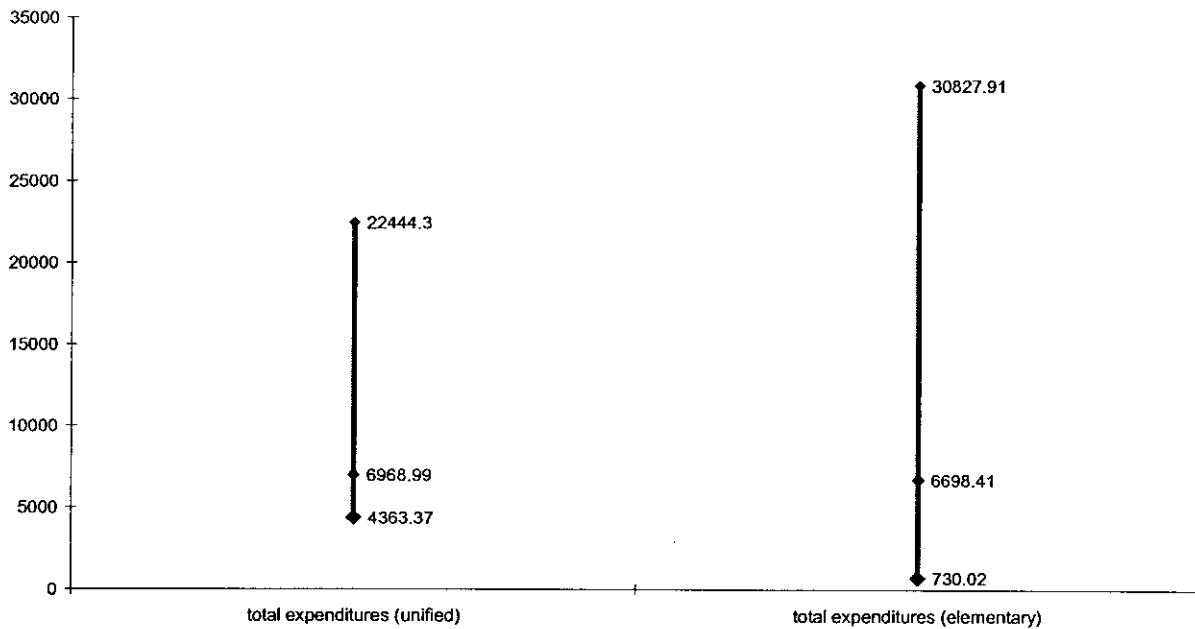
[8] Expert witness statement of Dr. John Kirlin, at 10. See also table on page 11.

E. Local Revenues

When we shift the frame of our analysis to local revenues, however, we see an even more

significantly unequal distribution. Local revenues are those with the Object classification of

"Other Local Revenue" as defined in the California School Accounting Manual (available on-

line at http://www.cde.ca.gov/fiscal/sacs/csam/) and are generated within district boundaries

through a variety of mechanisms, ranging from interest on accounts to parcel taxes to non-ad

valorem taxes to income from leases and rentals. The high, low and weighted mean for

elementary and unified districts are presented in Figure 2.

Figure 2
California Unified and Elementary Districts
High, Low and Weighted Mean Per Pupil Local Revenues,
2001-02 School Year
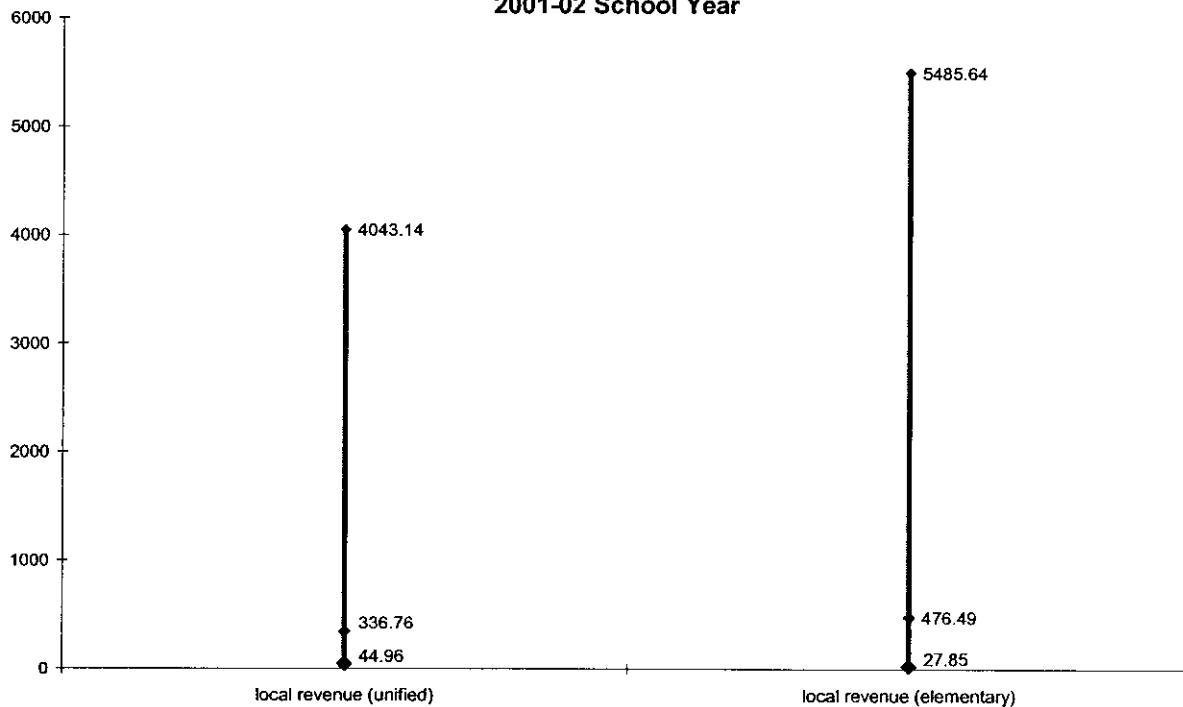
Because different school districts are in substantially different positions to generate these local

revenues we see a much more significant variation in these sources, with the elementary district

12

maximum over 10 times the weighted mean. Similarly, the unified district maximum is 12 times

the unified weighted mean. As these local revenues are generated, in part, through locally

voted exemptions from Proposition 13 assessment requirements, they indicate the degree to

which some local districts have been able to tap property wealth inaccessible to other districts

because they cannot secure voter approval to suspend the property tax cap limitation imposed by

Proposition 13. That local effort to generate local revenues is understandable, even predictable,

but it is providing some districts with greater access to unrestricted funds than others. And as we

shall see as we move to the regression analysis, those local revenues are strongly related to

district level spending on textbooks and average teachers' salaries.
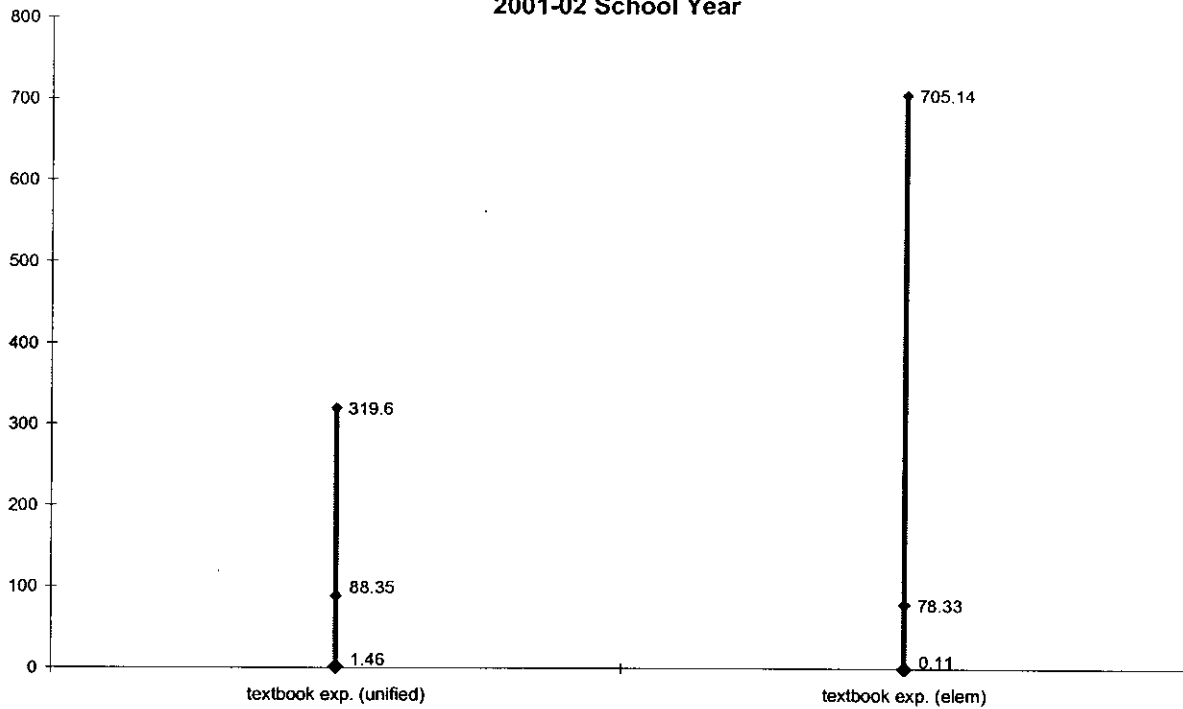
F. Textbook Expenditures

One of the most striking aspects of plaintiffs' claims is the degree to which they claim that

textbooks are quite often unavailable to students within California. A question arises whether

that claimed inaccessibility stems in part from different levels of spending on textbooks within

California. Figure 3 is an effort to describe variations in local districts' spending on textbooks

for the academic year 2001-2002.[9]

---

[9] Because Figure 3 does not examine spending over time, the variation shown could be representative of spending over time or could reflect variation in levels of need in the given year. The district that spent 11 cents per pupil on textbooks may simply not have had a significant need to replace books that year, whereas the district that spent over $705 per pupil may have needed to fill a significant shortage—which raises other questions about the district's students' access to textbooks in the previous year. The point here is that variation is extreme and may be imperfectly correlated to need.

13

Figure 3
California Unified and Elementary Districts
High, Low and Weighted Mean Per Pupil Textbook Exp.
2001-02 School Year

At the elementary level, we see an enormous variation in textbook expenditures, ranging from a mere 11 cents per pupil at the bottom end to a top expenditure of over $705 per pupil, with a weighted mean expenditure of roughly $80. Among unified districts, the top end expenditure is less than half the top elementary expenditure but it still is nearly four times the mean and the bottom expenditure is only $1.46 per pupil. These figures show that there is meaningful and striking variation in the amounts of money that districts in California spend on textbooks. Clearly, the bottom level of these expenditure ranges could not provide adequate numbers of textbooks for district children, when an English textbook easily retails for $57.00.[10] While the plaintiffs' claims in the complaint that school children are unable to take home textbooks

---

[10] Portner, Textbook Costs Soaring, San Jose Mercury (Dec. 15, 2002).

because there simply are not enough texts to go around sound shocking, even unimaginable, the
per pupil expenditure on textbooks in California certainly suggests it could be true.

G. Average Teacher Salaries

Average teacher salaries give us some indication of teacher quality, albeit an incomplete one.

Better teachers, with more qualifications, arguably are better able to bargain in the educational

marketplace and obtain higher salaries. Average teacher salaries were obtained by simply

dividing the districts' total expenditures on classroom teachers by the full-time equivalent (FTE)

positions reported in both the NCES Common Core of Data and in the state data (these figures

were identical). The high, low and weighted mean of the resulting average teacher salaries in

unified and elementary districts are reported in Figure 4.

Figure 4
California Unified and Elementary Districts
High, Low and Weighted Mean Average Teacher Salary
2001-02 School Year
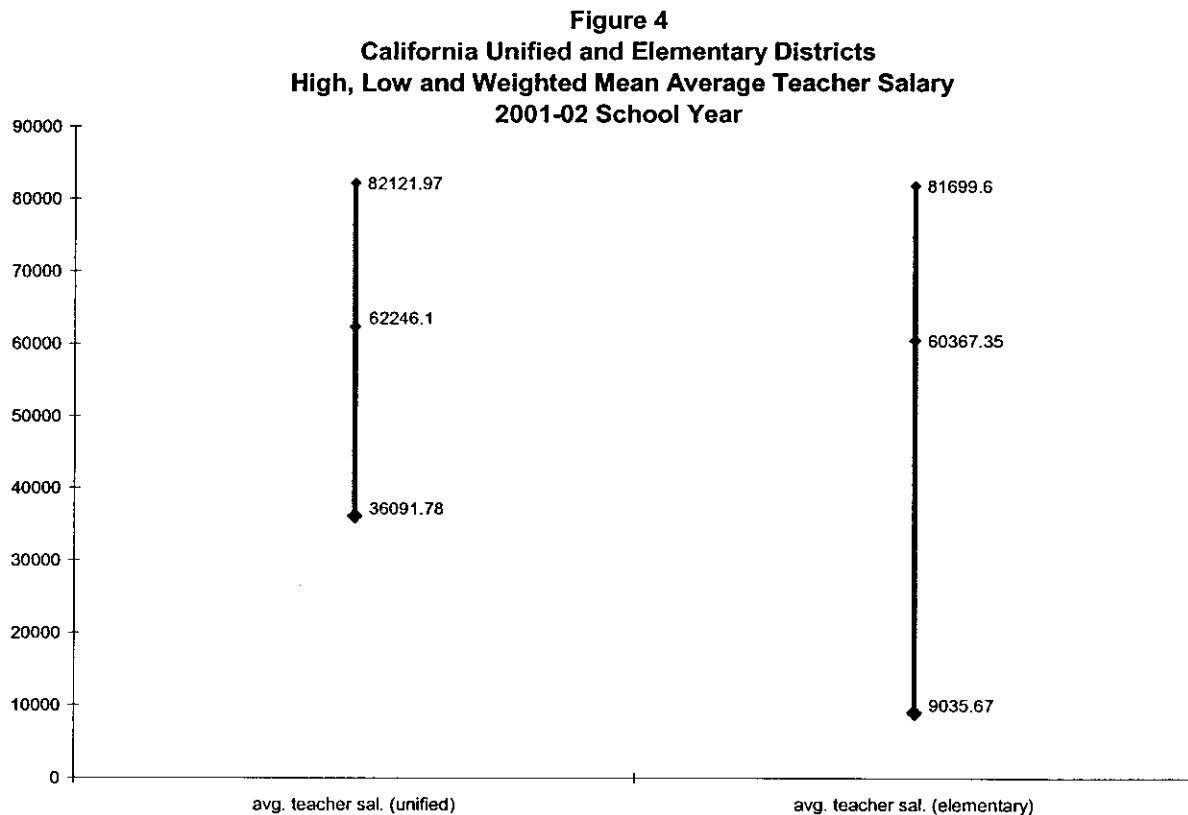
Both unified and elementary districts show very similar top and mean expenditures on teachers, but the bottom end of elementary districts' salaries are rather low. That $9035 figure, however, comes from a relatively small and rural district and the next mean salary observation is in the low $20,000s and the rest of the salaries at the low end largely resemble the unified districts.[11] Given these figures, we see some significant variation in average teacher salaries, but these may be tempered somewhat by cost of living variations across the state. Nonetheless, average salaries at the bottom end of unified districts are not even half of the average salaries at the top spending unified districts. These average salary disparities undoubtedly make it difficult for low salaried districts to attract and retain teachers, let alone reward talented ones.

Given these ranges of expenditures and revenues, it is important to ask whether any particular demographic groups or districts with particular characteristics consistently receive the short end of the funding stick among California school districts. The next section, which employs both bi-variate and multiple regression analyses, shows that districts with higher percentages of migrant students, students in poverty and with lower capacities to generate local revenues are consistently at the low end of the revenue and expenditure ranges among California's districts.

VI. Equal Opportunity to Learn in California

By breaking out the California Department of Education fiscal records by district and category of expenditure and revenue, I was able to combine those figures with accurate district-level demographic data. Typically, other expert witness reports in this litigation have combined test

---

[11] An even lower average teacher salary (roughly $4000) was dropped from the analysis because it was obviously a data error. The district had roughly 75 teachers and an average classroom size of about 22 students, but its total expenditure on classroom teachers was listed as only roughly

score data with individual, school or district-level demographic data to show that these categories are not relevant the plaintiffs' case. My approach in this equity analysis is to determine whether the resources available to students vary with any degree of statistical significance by important racial or demographic characteristics of the districts. Test scores may tell us one thing, but there are many elements that contribute to a test score. The state's own accounting figures tell us a very different picture, however. In order to make the presentation of this data more sensible, I have confined my analysis to unified districts in California, which encompass over three-quarters of all public school children in California.

A. Distribution of Resources by Demographic Groups

Figures 5 though 10 reveal in a graphical way the bivariate relationship between two key demographic characteristics of California unified school districts (concentration of poverty and percent of students who are migrants) and three revenue and expenditure categories: per pupil local revenue, per pupil textbook expenditures and average teacher salaries. The districts are sorted into percentile categories (as shown on the graphics) and the average poverty level[12] and percentage of migrant students for each percentile grouping is graphed on the vertical axis. The reference line shows us the statewide averages for these two demographic characteristics. To the extent that the percentile groupings are above the reference line, these demographic characteristics are over-represented in that grouping.


$300,000. Most likely a 0 was dropped from that $300,000 figure, which would have placed it at a more sensible figure.

[12] Percentage of students in poverty is defined as the percentage of students within a district receiving free or reduced price lunch, according to federal eligibility requirements.

B. Students in Poverty

Figure 5 shows that all of the districts above the 50th percentile of per pupil local revenue have less than the statewide average of students in poverty. Similarly, all the districts below the 50th percentile of per pupil local revenue are above, sometimes substantially above, the statewide average of percentage of pupils in poverty. At the extremes (<10th percentile local revenues and > 90th percentile local revenues) this translates into the following distribution of local revenues: students in districts at or below the 10th percentile per pupil local revenue have poverty rates nearly 50% higher than those at or above the 90th percentile of per pupil local revenue.
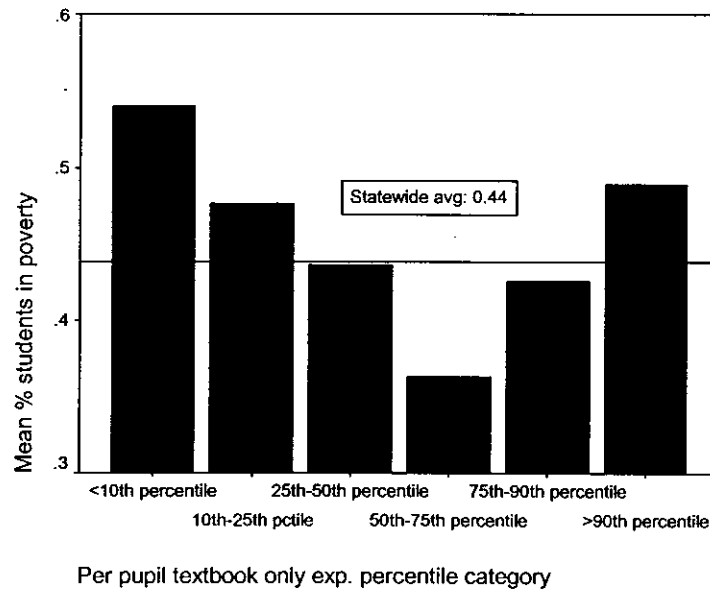
Figure 5
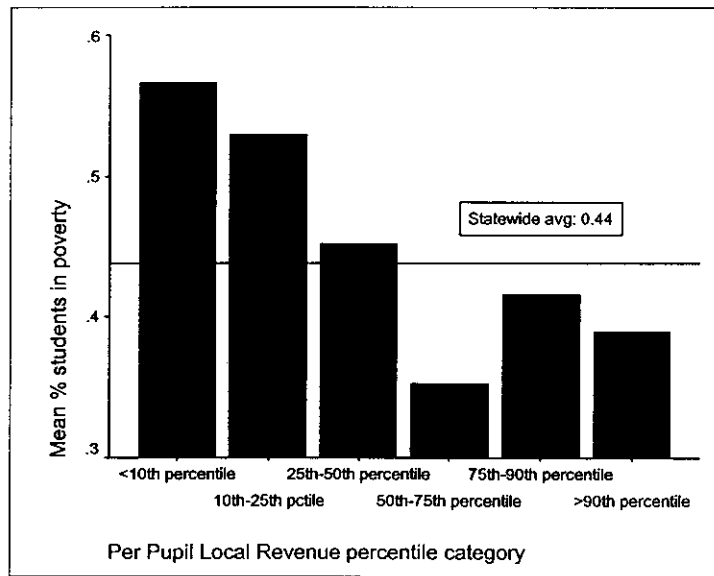
When we turn to per pupil textbook expenditures (See Figure 6) we see a similar pattern. All the students at or below the 25th percentile of per pupil textbook expenditures show above average poverty rates, while those above the 50th percentile had below average poverty rates, with the exception of the 90th percentile textbook expenditure category. This one exception is most likely

due to the influence of Los Angeles Unified School District which had the highest per pupil textbook expenditures, but also has a significant percentage of its students in poverty. This fact should also remind us not to conflate district-level resources with student-level access to those resources. Intra-district disparities in Los Angeles may account for this discrepancy, as may a one-year spike in textbook purchases to compensate for previous years' underfunding of textbook purchases. Overall, however, this table reveals rather clearly that students at the bottom end of the textbook expenditure distribution are disproportionately poor.

Figure 6

Per pupil textbook only exp. percentile category

Finally Figure 7 shows us the same pattern for teachers' salaries as for textbooks. Students whose teachers are at or below the 25th percentile in average salary are disproportionately poor. What is striking Figure 7 is that it demonstrates that the relationship between average teacher salaries and degree of poverty concentration is not strictly linear. Again, this may be related to

19

the high cost of living in urban districts, where teachers are better compensated, in nominal

dollars, than their rural colleagues, but also teach greater numbers of students in poverty.
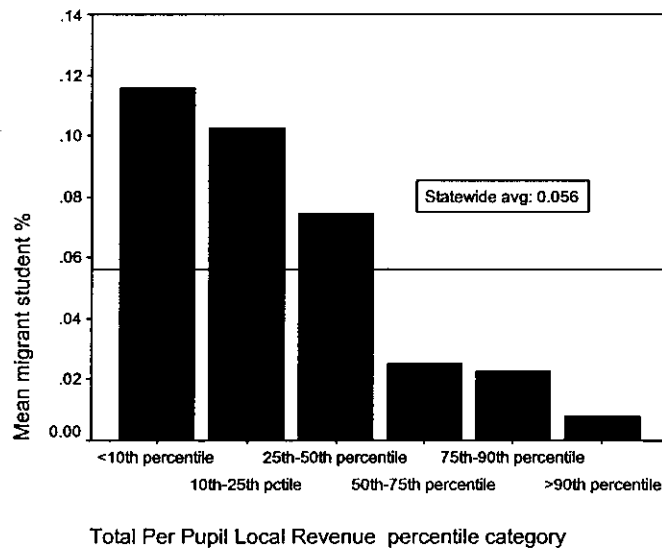
Figure 7

Avg teacher salary percentile category
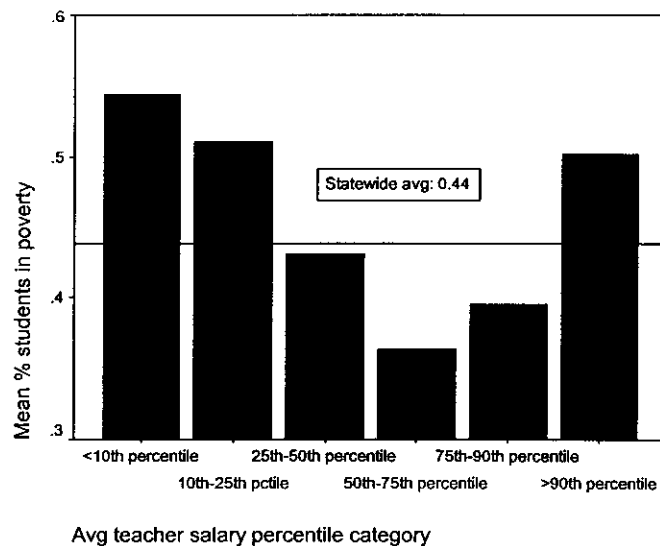
C. Migrant Students

If we turn to the percentage of students within a district who are migrant students, we see an

even more striking relationship between this demographic group and per pupil local revenues,

per pupil textbook expenditures and average teacher salaries. Figures 8 through 10 highlight

these relationships. They are remarkably uniform in their findings: There is a sharp and inverse

relationship between the percentage of migrant students in a district and that district's a) per

pupil local revenue, b) per pupil textbook expenditures and c) average teacher salaries. The

migrant student percentage in districts below the 10th percentile of per pupil local revenues is 12

times greater than the migrant student percentage in districts above the 90th percentile of average

teacher salary. Migrant student percentage in districts at the 10th-25 percentile of per pupil

textbook expenditures is nearly 6 times that of districts at the 75th-90th percentile of per pupil

20

textbook expenditures. Students who attend schools where the average teacher salaries are in the bottom 10th percentile are nearly 8 times as likely to be migrant students as students whose teachers earn, on average, at or above the 90th percentile. In all three of these important revenue and expenditure categories, migrant students are significantly underfunded, compared to the state as a whole.

Figure 8

Total Per Pupil Local Revenue percentile category

Figure 9

Per pupil textbook only exp. percentile category

21

Figure 10

Avg teacher salary percentile category
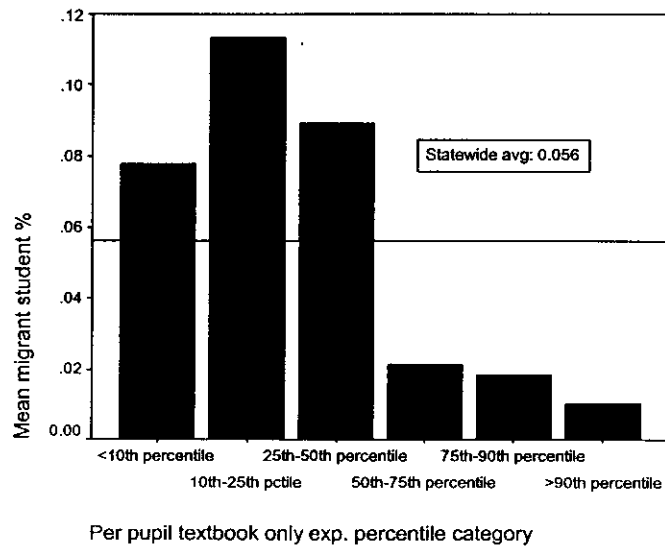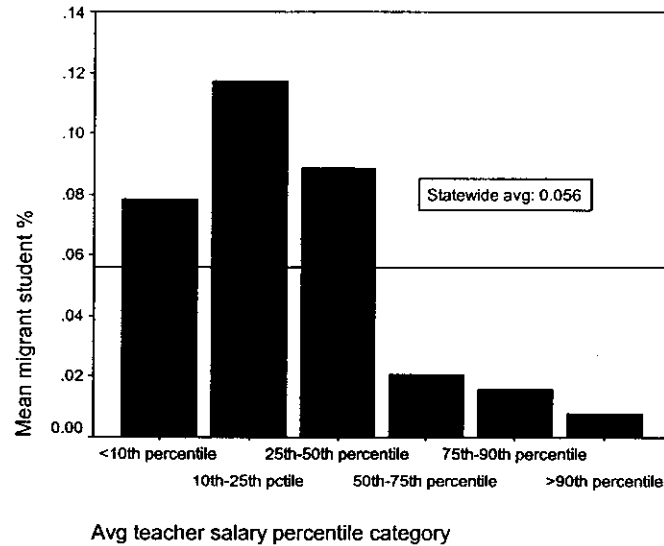
D. Multivariate Regression Analysis

As important as these bivariate relationships are, it is important to make sure that the two

categories explored here (percentage of students in poverty or percentage of migrant students)

are not simply masking other kinds of relationships. In order to determine whether these

categories have an *independent* relationship to these funding categories, we need to use multiple

regression analysis. I have run six regressions, using two universes and three dependent

variables. Table 1 provides an OLS regression of the per pupil textbook expenditures, average

teacher salaries and per pupil local revenues of California's elementary school districts, using

selected district level characteristics as the independent variables. These regressions are not

designed to "best" predict the various dependent variables, but instead to ascertain whether these

key funding and revenue characteristics are skewed by district demographics. In a setting of full

equal opportunity, there would be no relationship between these categories and the dependent

variables of interest. Of course, a consistently negative relationship shows that there is an

inverse relationship between that demographic and the funding and expenditure level. That is, a negative relationship reveals a systematic *denial* of resources, controlling for the other independent variables. A positive relationship may indicate a bias or may indicate that categorical funds targeted toward particular districts or students is having its intended effect.

Turning directly to Table 1, we see that per pupil local revenue is by far the largest contributor to the variation in both per pupil textbook expenditures and average teacher salaries, at an exceptionally high level of statistical significance. Districts with high levels of per pupil local revenue are able to spend comparatively more on both textbooks and teacher salaries. In contrast, the percentage of migrant students within a district is consistently *negatively* related to per pupil textbook expenditures, teacher salaries and per pupil local revenues. In short, districts with a comparatively high degree of migrant students are significantly underfunded relative to other districts in the state, along these three dimensions of educational resources. This is particularly distressing since a high degree of residential mobility within a district (or across districts) have been found to be related to lowered educational attainment among elementary children.[13] While the size of the effects (the Betas) for percentage of migrant students in Table 1 are not nearly as strong as local revenues, they are consistently significant across all models. (The standardized coefficients are reported (Betas) so that the coefficients can be easily interpreted across variables.)

---

[13] T., Nielsen, J., & Schatz, C. (2003). Evaluation of the longitudinal impact of comprehensive early childhood initiatives on student academic achievement. Rockville, MD: Montgomery County Public Schools. Available on-line at http://www.mcps.k12.md.us/info/ctbs2003/PDF/SuptsCTBSReport2003.pdf

The percentage of students who have limited English proficiency, the percentage of students in poverty and percentage of African-American students have a modest positive relationship to the expenditure levels. Within the expenditure domain, that may be due to federal categorical aid targeted directly at students who are learning English and students in poverty. It is important to note that model three shows a negative statistically significant relationship between percentage of students in poverty and per pupil local revenue. This, combined with the negative coefficient for migrant student percentage, indicates that districts with high degrees of transient students and students of poverty have a difficult time generating local revenues, compared to their peer elementary districts.

Table 1
Multivariate Regression of Selected Revenue and Funding Categories by Demographic Characteristics
California Elementary School Districts, Academic Year 2001-02

Independent Variable	Model 1 Per Pupil Textbooks	Model 2 Average. Teacher Sal.	Model 3 Per Pupil Local Revenue
	Beta (t-score)	Beta (t-score)	Beta (t-score)
Per Pupil Local Revenue	0.575*** (17.004)	0.704*** (25.830)	------
Migrant student %	-0.120** (-3.155)	-0.139*** (-4.502)	-0.252*** (-5.344)
LEP student %	0.190*** (4.403)	0.196*** (5.670)	0.483*** (9.628)
% Students in Poverty	0.097* (2.423)	0.092** (2.884)	-0.278*** (-5.692)
% African-American	0.166*** (5.213)	0.120*** (4.669)	0.155*** (3.899)
Constant (unstandardized)	-0.026 (-1.584)	-25.535*** (-2.560)	1.008*** (8.255)
R^2	0.508	0.671	0.190
Adj. R^2	0.504	0.668	0.184
N	534	552	552

*=significant at 0.05
**=significant at 0.01
***=significant at 0.0001

If we turn to unified districts, we see a slightly different picture (See Table 2). Among unified districts, per pupil local revenues still show a very large and robust relationship to both per pupil textbook expenditures as well as average teacher salaries. The percentage of migrant students in a district is still negative, but no longer statistically significant. Interestingly, only percentage of students in poverty shows a statistically significant relationship, in the positive direction, most likely because of federal categorical aid directed toward students in poverty. Overall, the unified models explain roughly 70% of the variation in per pupil textbook expenditures and average teacher salaries. In sum, the capacity of a local district to generate meaningful local per pupil revenues is directly related to expenditures on teachers and textbooks, two factors clearly at the heart of the any educational enterprise. At the elementary level, districts with higher percentages of migrant students spend significantly less on both teachers' salaries and textbooks than districts with lower percentages of migrant students. For migrant students and districts with low capacity to generate local revenues, there is a substantial inequality in the opportunity to learn in California school districts.

Table 2
Multivariate Regression of Selected Revenue and Funding Categories by Demographic Characteristics
California Unified School Districts, Academic Year 2001-02

Independent Variable	Model 1 Per Pupil Textbooks Exp.	Model 2 Avg. Teacher Sal.	Model 3 Per Pupil Local Revenue
	Beta (t-score)	Beta (t-score)	Beta (t-score)
Per Pupil Local Revenue	0.801*** (23.530)	0.798*** (22.463)	------
Migrant student %	-0.031 (-0.740)	-0.022 (-0.488)	-0.277*** (-4.077)
LEP student %	0.015 (0.328)	0.0.12 (0.260)	0.292*** (3.986)
% Students in Poverty	0.134** (3.146)	0.107* (2.884)	-0.086 (-1.243)
% African-American	0.027 (0.795)	-0.018 (-0.494)	0.148** (2.666)
Constant (unstandardized)	-0.316*** (-5.126)	-212.801*** (-4.256)	0.800** (3.478)
R^2	0.674	0.644	0.118
Adj. R^2	0.669	0.638	0.107
N	324	325	325

*=significant at 0.05
**=significant at 0.01
***=significant at 0.0001

Combined, both the bivariate and multiple regression analyses leave me very confident that the state's expert witnesses have overstated the degree of equity in California's school financing system and ignored significant evidence of substantial inequality in the opportunities to learn, particularly for students in those districts with high percentages of migrant students and in those districts that lack capacity to generate meaningful local revenues. The patterns are extensive and show high degrees of statistical significance.

VII. Conclusion: A Comparative Look at State Efforts to Reform School Funding

Dr. Rossell states in her expert witness report that "The adequacy of resources is not something that in a democracy state government has much control over. And the courts have even less."[14] My scholarship on the impact of state court decisions on school financing shows that while these decisions are politically contentious they can and do produce meaningful changes in the distribution of educational resources.[15] In my study of New Jersey, Texas, Kentucky, Tennessee and Connecticut, I found that the average decline in inequality among school districts was nearly 30 percent within 6 to 8 years after a state supreme court decision striking down an existing school finance system. These changes were not one-time dips, but sustained and robust increases in the degree of educational opportunity afforded to low-spending districts, as measured by financial resources. Other scholars, too, have found similar patterns. Murray, Evans and Schwab's 1998 study found that court reforms produced a 19 to 34 percent reduction in over inequality in school spending, depending on the measure of inequality used.[16] In a 50-state study, Marci Kanstoroom found that state supreme court decisions striking down inequitable school financing systems produced, on average, a 14 percent decline in expenditure inequality.[17] Clearly, courts can achieve significant changes in the educational opportunities that students receive. It is my professional opinion that the inequalities students face in California's public

---

[14] Statement of Dr. Christine Rossell at 25.

[15] See Douglas S. Reed, *On Equal Terms*, pp22-34.

[16] Sheila Murray, William Evans & Robert Schwab, "Education-Finance Reform and the Distribution of Education Resources," *American Economic Review* vol. 88:4 (1998), pp789-812.

[17] Marci Kanstoroom, "Do Courts Make a Difference? Courts and School Finance Reform," Ph.D dissertation, Harvard University 1998, p125.

schools could be meaningfully addressed by both the state legislature and judiciary if the

plaintiffs were to prevail.