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Strategic School Funding for Results (SSFR)

Assessing the Distribution of Fiscal and Personnel Resources across Schools

A Report Prepared for Los Angeles Unified School District
SSFR Research Report #01 (LAUSD)

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About Strategic School Funding for Results (SSFR)

Purpose of SSFR

During the 2009-10 school year, the American Institutes for Research (AIR) and Pivot Learning Partners (PLP) formed a partnership with three large California school districts—Los Angeles, Twin Rivers, and Pasadena Unified School Districts—to begin a project to implement and evaluate the impact of a comprehensive approach to local school finance, governance, and human resource management. With the ultimate goal of improving the level and distribution of teacher effectiveness and student learning opportunities, we have designed the *Strategic School Funding for Results (SSFR)* project to (a) develop and implement more **equitable** and **transparent** strategies for allocating resources within each district; (b) link those strategies to policies and processes designed to encourage **innovation**, **efficiency**, and **teacher effectiveness**; and (c) strengthen **accountability** for improving student outcomes.

What policies underlie SSFR?

The theory of action underlying the project encompasses the following three elements:

- 1) **A culture of innovation and efficiency** can be achieved by
 - a) *increasing school autonomy linked with accountability for results;*
 - b) *creating appropriate incentives for improving the performance of principals, teachers, and other school faculty;*
 - c) *ensuring access to a wide range of educational choices by families and children; and*
 - d) *providing school leaders with the opportunity to select and purchase various support services from the central office.*
- 2) **Increased transparency** can be achieved by
 - a) *simplifying and clarifying the processes by which resources are allocated to schools and*
 - b) *increasing the participation of a wide range of stakeholders in the design of these processes.*
- 3) **Equity** can be improved by *allocating dollars to schools based on student needs.*

The results of this evaluation will provide information to help federal, state, and local policymakers in their consideration of policies that will improve learning opportunities across all children.

What are the benefits of participation in the SSFR project?

Within the framework of the SSFR project, the AIR/PLP team provides the districts with data analysis, technical assistance, coaching, and training to implement the funding strategies and evaluate their success. While there are common themes being promoted across each of the three districts, each district has adopted its own focus and is adapting the SSFR components to fit the culture and context of the district. Each of the three participating districts has committed time on the part of its leadership and staff to participate effectively in this project and has acknowledged that the project represents a collaborative effort between the AIR/PLP and district leadership teams. The formative nature of the proposed project allows for a mutual learning experience between the participating districts and the AIR/PLP team and allows the creation of a strong partnership in successfully implementing SSFR.

How is SSFR being funded?

During the 2009-10 school year, the William and Flora Hewlett and Ford Foundations provided grants to the AIR/PLP team to support Phase I of the SSFR work. August 1st, 2010 marks the beginning of Phase II of the SSFR project. During the spring of 2010, the Institutes for Education Sciences (IES) in the U.S. Department of Education awarded a grant to the AIR/PLP team to support the further development of the SSFR model over the next three years. In addition, the AIR/PLP team submitted proposals to the Hewlett and Ford Foundations to extend their support of this project covering this same period. The team has also submitted a proposal for a grant under the Investing in Innovation (I3) program by the U.S. Department of Education to extend the development, implementation, and evaluation of SSFR over the next five years.

The result of this work will provide a guide to other districts interested in implementing their own version of the SSFR model and a series of reports describing the changes in the patterns of resource allocation and student outcomes that coincided with the implementation of SSFR in the three districts.

Report Highlights

Using fiscal data provided by the finance office of the school district, and personnel data obtained from the California Basic Education Data System maintained by the California Department of Education (CDE), we present analyses to provide a foundation for local policymakers that may be used to assess whether there are inequities in the way fiscal and personnel resources are distributed across schools. We begin our analysis with an examination of school level performance data obtained from the CDE. This is followed by an analysis of the relationship between school resource allocation (spending and staffing) and student needs. We find that:

- Schools with the highest percentage of students from low-income families exhibit the lowest performance on the California Academic Performance Index (API).
- The highest need schools (those serving the higher percentages of students eligible for free or reduced price lunch) generally spend somewhat more overall than the lowest need schools and most of this difference is driven by categorical or restricted funding.
- In some cases, spending from unrestricted funding tends to be lower in the highest need schools, and these differences work against the additional spending that occurs out of restricted funding.
- Elementary schools tend to outspend their middle and high school counterparts.
- Schools with the highest percentages of low-income students have more FTE teachers per 100 students.
- Schools with the highest percentages of low-income students have on average less experienced, and hence lower paid, teachers and more teaching out-of-field.

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Purpose

The policies we are proposing for implementation under the Strategic School Funding for Results (SSFR) project are designed to promote horizontal and vertical equity for students by developing a funding mechanism that distributes dollars to schools based on student needs. Horizontal equity refers to treating *similar* students in similar ways (i.e., funding students with similar needs and cost-related circumstances equally), while vertical equity refers to treating *different* students in systematically different ways (i.e., funding students with different needs and cost-related circumstances equally). The differences in treatment are intended to acknowledge the variations in the cost of serving students with different educational needs. Simply stated, high-need students cost more to educate.

This report is intended to provide data to help policy makers in the district assess how equitably they have distributed resources in the face of current student performance and student needs. The purpose of this report is to help district decision makers begin to address the following policy question:

Do higher need students have sufficient access to the additional resources they need to achieve the district and state educational goals?

To answer this question, four steps are required: (i) defining

the educational goals for the district, (ii) designing the programs that will achieve the defined goals, (iii) specifying the inputs necessary to deliver those programs, and (iv) determining whether schools have access to sufficient resources to support these programs. While these steps are part of the larger SSFR project, the current report simply provides baseline information on student outcomes and patterns of resource allocation (e.g., spending, teacher staffing ratios, etc.) to help inform this process. For the purposes of this report, we measure student need based on eligibility for the national school lunch program (under which students from low-income families are eligible for free or reduced price lunches) or whether a student is classified as an English learner (EL). It is commonly accepted that students from relatively low-income families arrive at school with fewer educational experiences than their high-income (HI) counterparts and continue receiving less support conducive to academic success outside of school throughout their educational career. This necessitates greater investments of educational resources in order to offer comparable opportunities for success in education, the job market, and life in general. Similarly, students classified as EL and such students may require more and different kinds of resources to provide them with the same educa-

tional opportunities as their non-EL counterparts.¹

We begin this report by presenting the patterns of variation in student performance across schools serving varying proportions of high-need students. We focus our attention on the Academic Performance Index (API) used to assess student outcomes across a broad array of subject areas in California schools.²

With the concepts of vertical and horizontal equity in mind, we follow this analysis of differential student performance by exploring the patterns of variation in the access to educational resources afforded to students with differing needs. Through this analysis, we reveal patterns of resource allocation resulting from a combination of various policies, rules, and regulations that govern how resources are distributed across schools. We measure access to school resources in a variety of ways, including per-pupil spending from different revenue sources and the quantities and qualifications of certified school personnel.³

¹ Note that there tends to be a high degree of overlap between students from low-income families and EL status (i.e., EL students are more likely to come from low-income households).

² The Academic Performance Index (API) is a single number compiled by the California Department of Education, ranging from a low of 200 to a high of 1,000, which reflects a school's performance level, based on the results of statewide testing (<http://www.cde.ca.gov/ta/ac/ap/documents/infoguide09.pdf>).

³ We have produced a separate **Technical Appendix** to this report

Student Need and Performance

► *Schools with high proportions of low-income students have the lowest performance levels as measured by the Academic Performance Index (API).*

Exhibits 1a, 1b, and 1c show the negative relationship between the API and the percentage of students from low-income families across all school levels (elementary, middle, and high school). Each square in these plots represents a school, and the solid *fitted lines* indicate the average levels of API at different proportions of students from low-income families. For example, based on our analyses of the 2008-09 data, an elementary school with 90 percent students from low-income families is predicted to have an API that is about 114 points lower than a school with 40 percent students from low-income families.⁴ Similarly, a high school with 90 percent students from low-income families would, on average, have an API about 130 points lower than a school with 40 percent students from low-income families. The differences in the performance of middle school students appear to be even more sensitive to differences

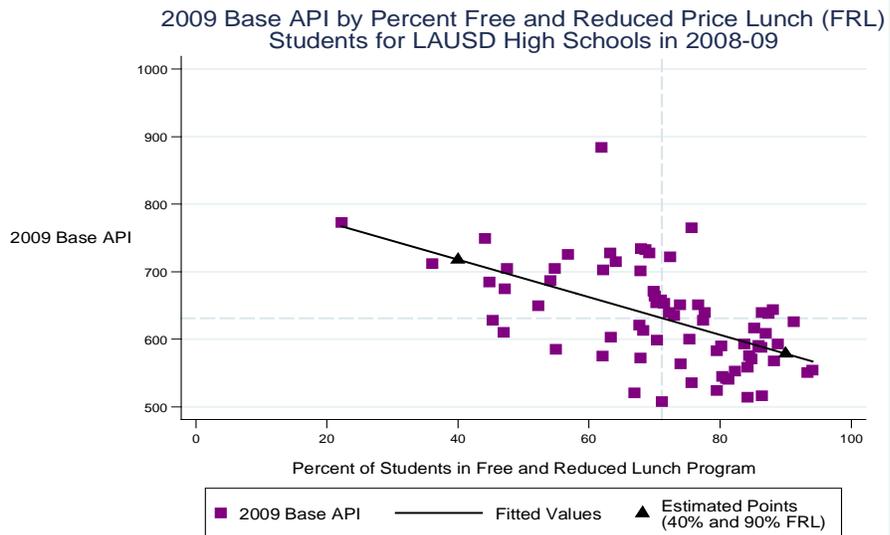
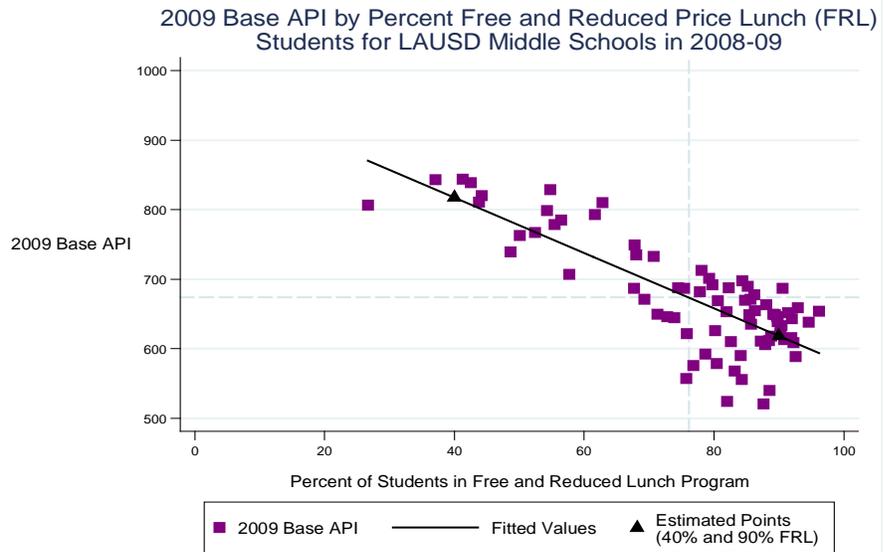
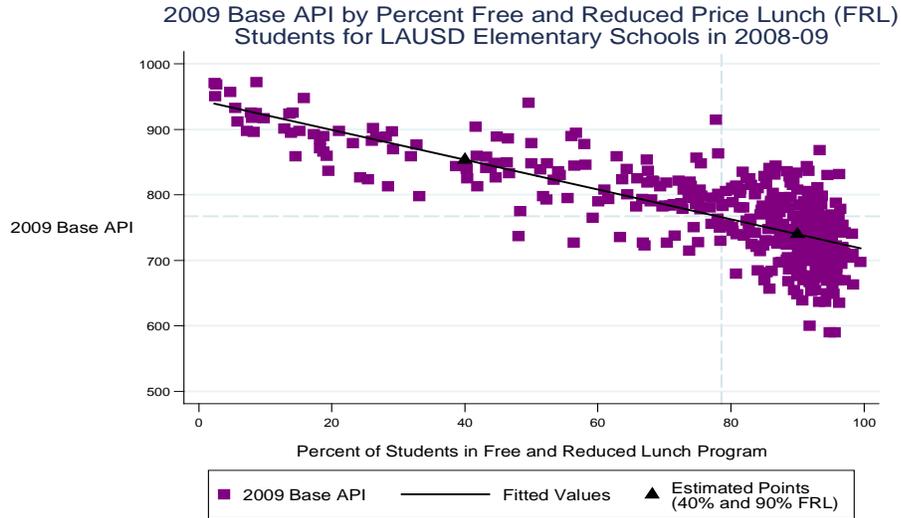
in the percentage of students from low-income families, as evidenced by the steeper relationship between API and percentage of low-income students.

Obviously, variations in student performance are not solely due to differences in student needs. The variation shown by the spread of student performance above and below the fitted line at each level of student need suggests that other factors may play a role in determining student performance. For example, at least some portion of the variation in performance that is not explained by student needs could be associated with differences in resources that have been invested in the children, both in the most recent year and historically. Nevertheless, these negative relationships do suggest the strong role student needs play in determining outcomes, and they further imply that some additional investment in educational and other resources (e.g., health or nutritional services) may be necessary to equalize educational opportunities. With that in mind, we now turn to an exploration of the variations in school resources and how they are associated with student needs.

that contains a complete set of tables and graphical displays of all of the analyses relevant to this report.

⁴ To see this, look at the difference in API between the two triangles that show the predicted API for elementary schools at 40 and 90 percent poverty, respectively.

Exhibits 1a, 1b, and 1c



Graph shows plot of 2009 Base API by percent FRL students in 2008-09 across LAUSD elementary, middle and high schools. Solid line indicates estimated relationship between API and FRL. Dotted lines indicate average levels of API and FRL. Source: LAUSD central district office.

Access to Fiscal Resources

► *On average, high-need schools (those with the highest percentages of students from low-income families) appear to spend more than low-need schools.*

Exhibits 2a, 2b, and 2c reveal a positive relationship between per-pupil spending and the percentage of students from low-income families at all three school levels (elementary, middle, and high). Each plotted point denotes the combination of percent low-income students and per-pupil spending at a given LAUSD school in 2008-09. The charts also contain different plotted symbols to distinguish between schools with relatively high or low percentages of EL students. The dots represent schools with low percentages of EL students (i.e., below the district median), while the squares represent schools with high percentages of EL students (i.e., above the district median).

The *fitted line* in each exhibit represents the average predicted spending as it relates to differences in the percentage of students from low-income families. For example, using the predictions represented by the fitted line, we estimate that an average elementary school in which 90 percent of its students are from low-income families spends \$685 per pupil (7 percent) more than a school

with 40 percent of its students from low-income families (\$8,950 versus \$8,265 per pupil). The predicted points are represented by the two black triangles that appear on the fitted line. For high schools, this differential spending is more pronounced. A high school in which 90 percent of its students are from low-income families spends about \$1,325 per pupil (22 percent) more, on average, than a school with 40 percent students from low-income families (\$8,133 versus \$6,808 per pupil).

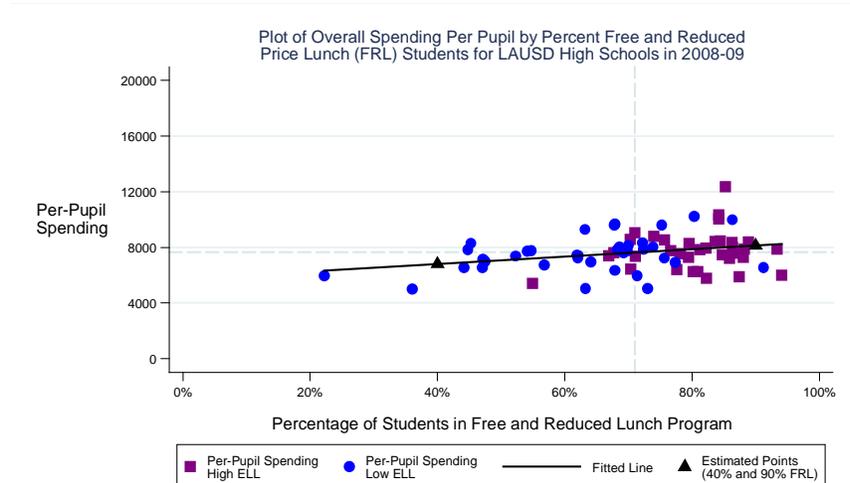
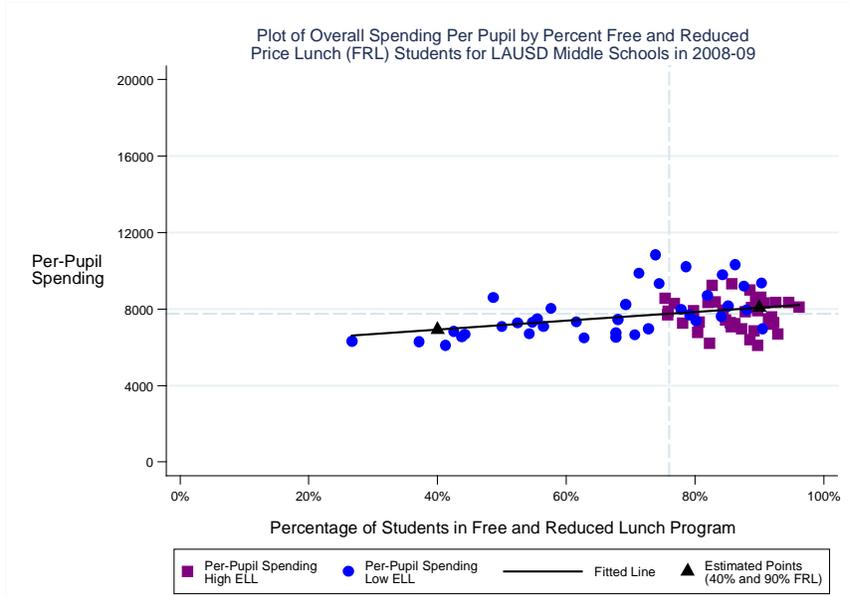
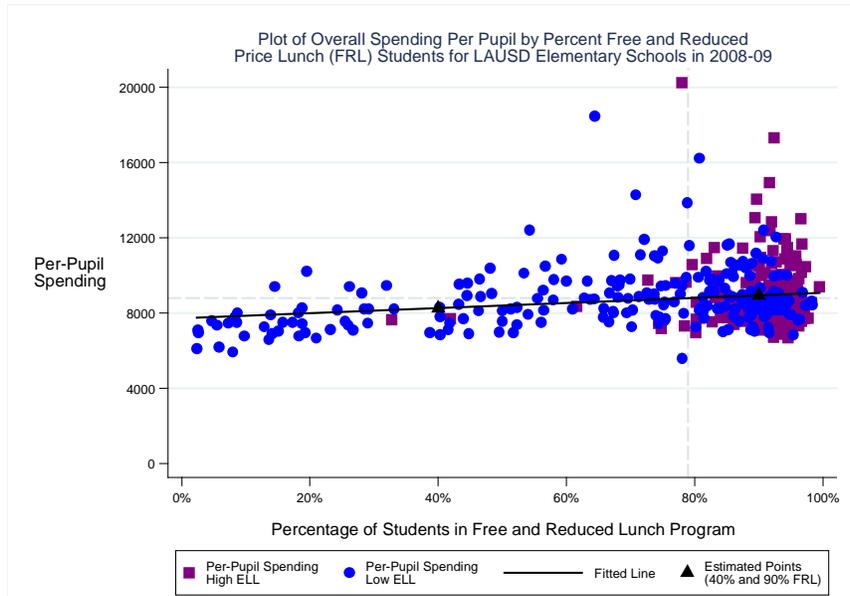
Middle school spending differences are more like those for high schools than for elementary schools.

As with the plots of API against percentage of low-income students, these scatter plots of spending also suggest that there may be other factors that influence the level of per-pupil spending at each school site. There is a high correlation between the percentage of EL students and the percentage of students from low-income families. This high correlation is implied by the concentration of the square dots (schools where the percentage of EL students is above the district median for the given school level) at the right-hand side of each graph.⁵ Thus, to some degree the additional spending

associated with higher concentrations of low-income students appears to be picking up some of the effects on spending on high concentrations of ELs.

⁵ The actual correlation between EL and percent of low-income students in 2008-09 was 0.69, 0.77, and 0.60 for elementary, middle, and high schools, respectively.

Exhibit 2a, 2b and 2c



Graph shows plot of overall per-pupil spending by percent FRL students in 2008-09 across LAUSD elementary, middle and high schools. Solid line indicates estimated relationship between per-pupil spending and percent FRL. Dotted lines indicate average levels of per-pupil spending and percent FRL.

Average Differences in Per-Pupil Spending from Restricted versus Unrestricted Funds

► *Per pupil spending differences between high and low-need schools appears to be driven by differences in access to restricted (categorical) sources of revenues.*

Using 2008-09 data, exhibits 3a, 3b, and 3c provide another perspective on the variation in per-pupil spending across schools serving various percentages of high-need students. In addition to the overall per-pupil spending, these exhibits show the amounts of per-pupil spending that come out of unrestricted as opposed to restricted use revenues. Unrestricted funds are those available for general educational purposes. Restricted revenues include funds derived from federal and state categorical programs directed at particular student populations, such as students from low-income families (e.g., Title I), EL students (e.g., Title III), or students eligible for special education services (e.g., IDEA). To create these exhibits, we first divided the schools by level (elementary, middle, and high) and then arrayed them according to the percentage of students from low-income families from highest to lowest. We divided the schools into ten equal groups or deciles. Decile 10 contains schools with the

highest percentage of students from low-income families (i.e., the highest-need schools) and decile 1 contains schools with the lowest percentage of these types of students (i.e., the lower-need schools).⁶

When we divide the schools into two groups containing the upper and lower five deciles, respectively, we observe that the average higher-need elementary school (deciles 6 through 10) spends \$85 more per-pupil. This overall spending difference can be separated into individual differences in expenditure made out of unrestricted and restricted funds. That is, the average high-need elementary spends \$254 per pupil *less* out of unrestricted funds (\$5,149 versus \$5,403) than the average low-need school (deciles 1 through 5), while they spend \$340 per pupil *more* (\$3,689 versus \$3,349) out of restricted funds.

At the high school level there is a much larger difference in spending between the average high- and low-need schools: the average high-need high school (average of deciles 6 through 10) outspends its low-need counterpart (average of deciles 1 through 5) in terms of both restricted and unrestricted funding (by \$366 and \$107 per pupil, respectively). In turn, the overall difference of \$473 is largely driven by the

⁶ The charts list the average percentages of students from low-income families in each decile group, as well as the corresponding average percentages of English learner (EL) and special education (SE) students.

difference in spending from restricted funds.

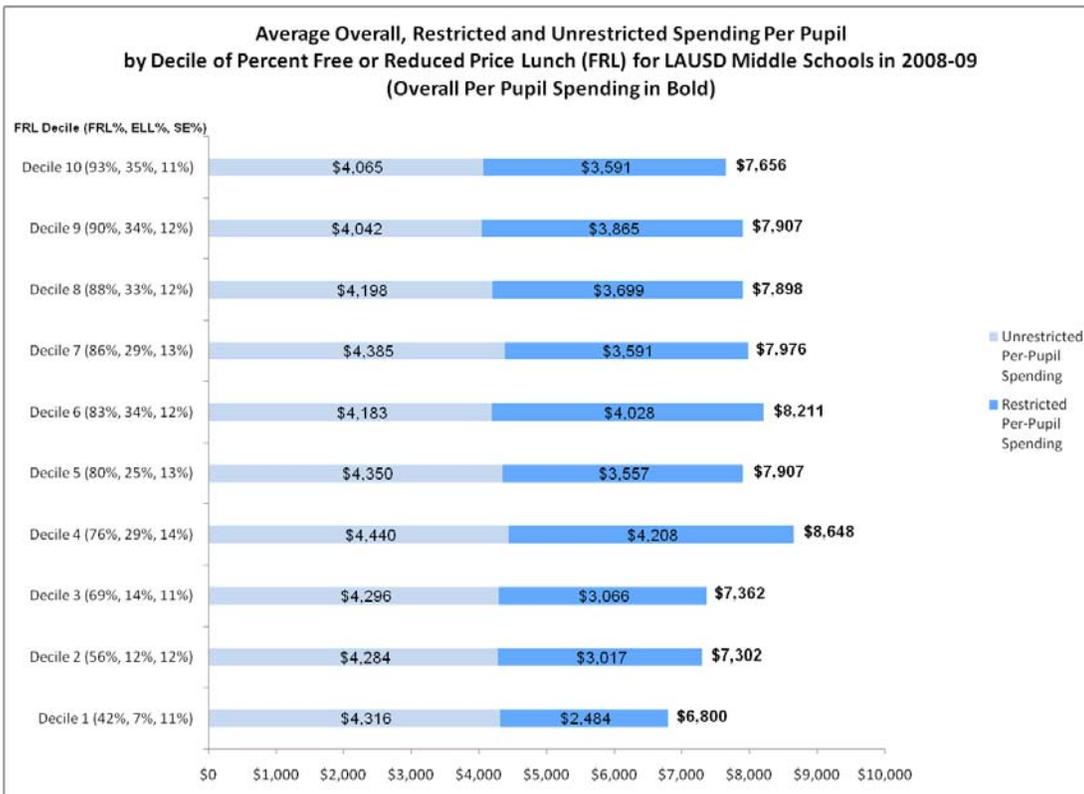
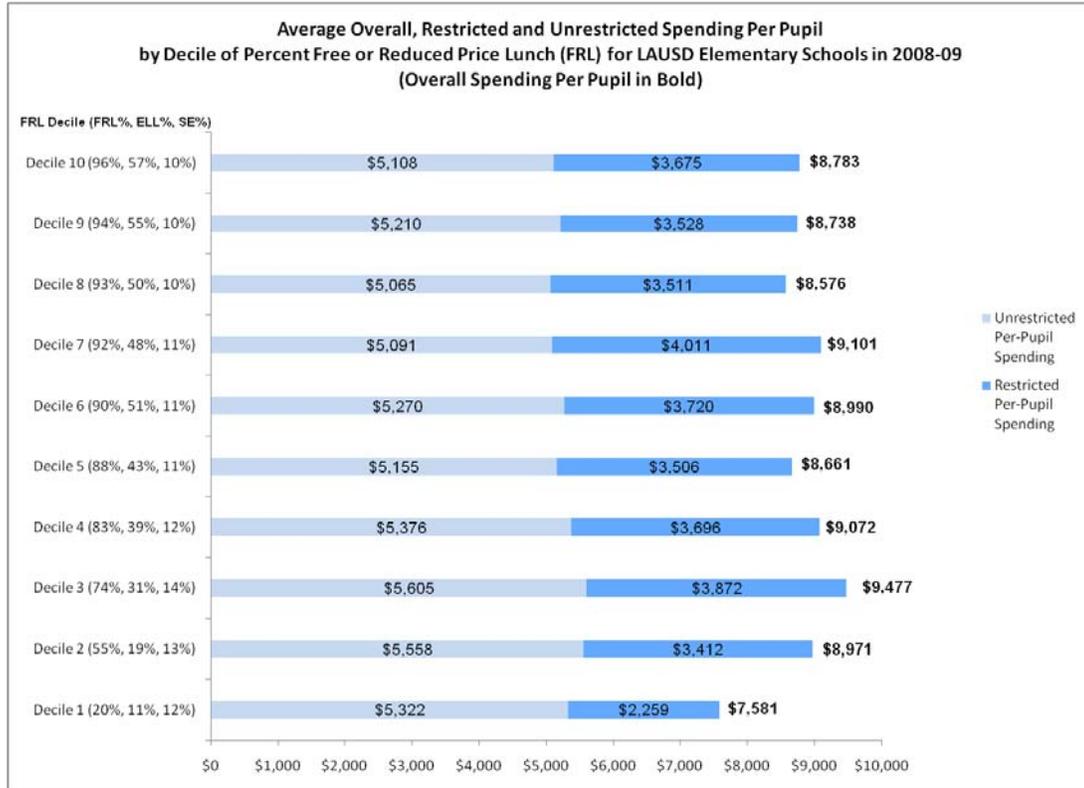
The high-need middle schools out-spend their low-need counterparts by \$376. The high-need middle schools out-spend their low-need counterparts by \$488 per pupil from restricted funds, but they spend \$163 per pupil *less* from unrestricted funds.

These exhibits also reveal that the average percentage of EL students in a school tends to increase with the average percentage of students from low-income families. While the average decile 1 elementary school has 20 percent of its students from low-income families and 11 percent who are ELs, the average decile 10 school contains 96 percent of its students from low-income families and 57 percent ELs. Similar patterns emerge for both middle and high schools.⁷

In addition, these data suggest that elementary schools spend more per pupil than middle and high schools. Average per-pupil spending across all elementary school deciles equals \$8,795, while for middle and high schools, the average spending amounts to \$7,650 and \$7,776, respectively.

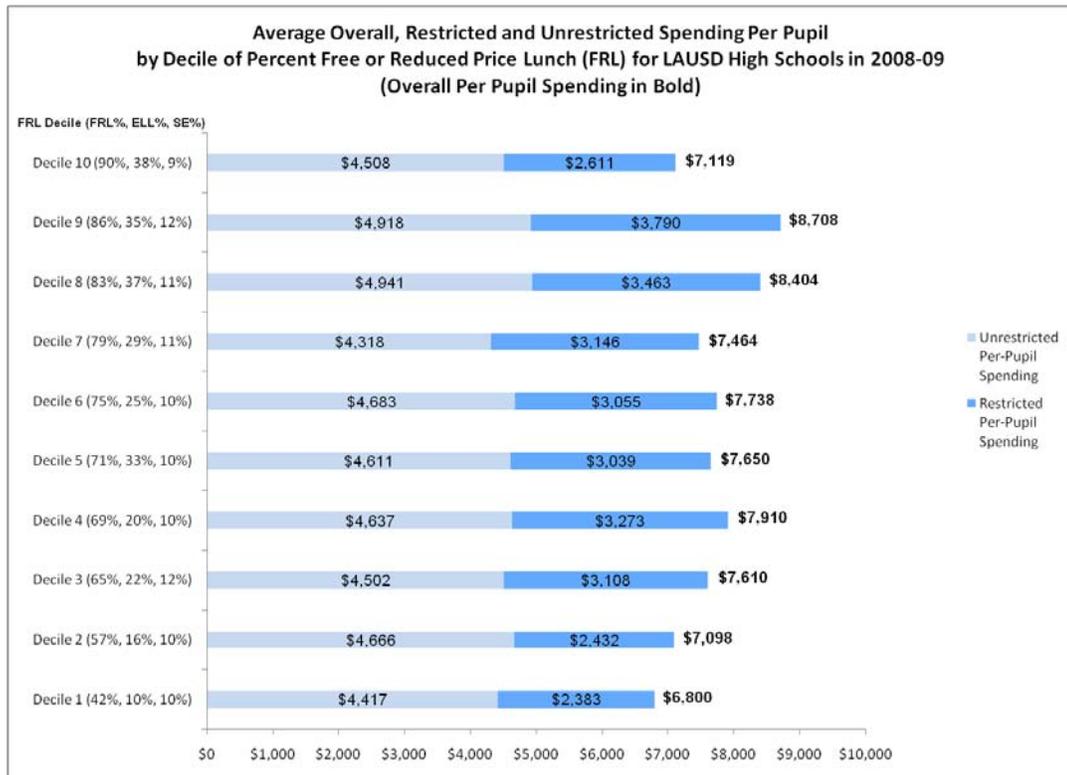
⁷ The common finding that the percentage of low-income students tends to be lower in the middle and high schools is often attributed to the fact that it is difficult to get eligible students to participate in the national school lunch program due to the perceived stigma that comes with participation.

Exhibits 3a and 3b



Graphs show average overall, restricted and unrestricted per-pupil spending within FRL deciles in 2008-09 across LAUSD elementary and middle schools.
Source: LAUSD central district office.

Exhibit 3c



Graph shows average overall, restricted and unrestricted per-pupil spending within FRL deciles in 2008-09 across LAUSD high schools.

Source: LAUSD central district office.

Changes Over Time in Restricted and Unrestricted Spending, Controlling for Other Factors

► *Controlling for variations in the percentage of EL students and school size, we observe a somewhat stronger (i.e., more positive) relationship between per-pupil spending and the percentage of students from low-income families over time. Moreover, when breaking this analysis down between restricted and unrestricted spending, it clearly shows that the positive relationship between overall per-pupil spending and percentage of low-income students is driven by differential access to restricted revenues. .*

Using a more sophisticated statistical approach, exhibits 4a, 4b, and 4c attempt to isolate the net relationship between per-pupil spending and the percentage of students from low-income families by controlling for variations in the percentage of EL students and school size.⁸

These exhibits show the relative difference in per-pupil spending between schools with a certain percentage of

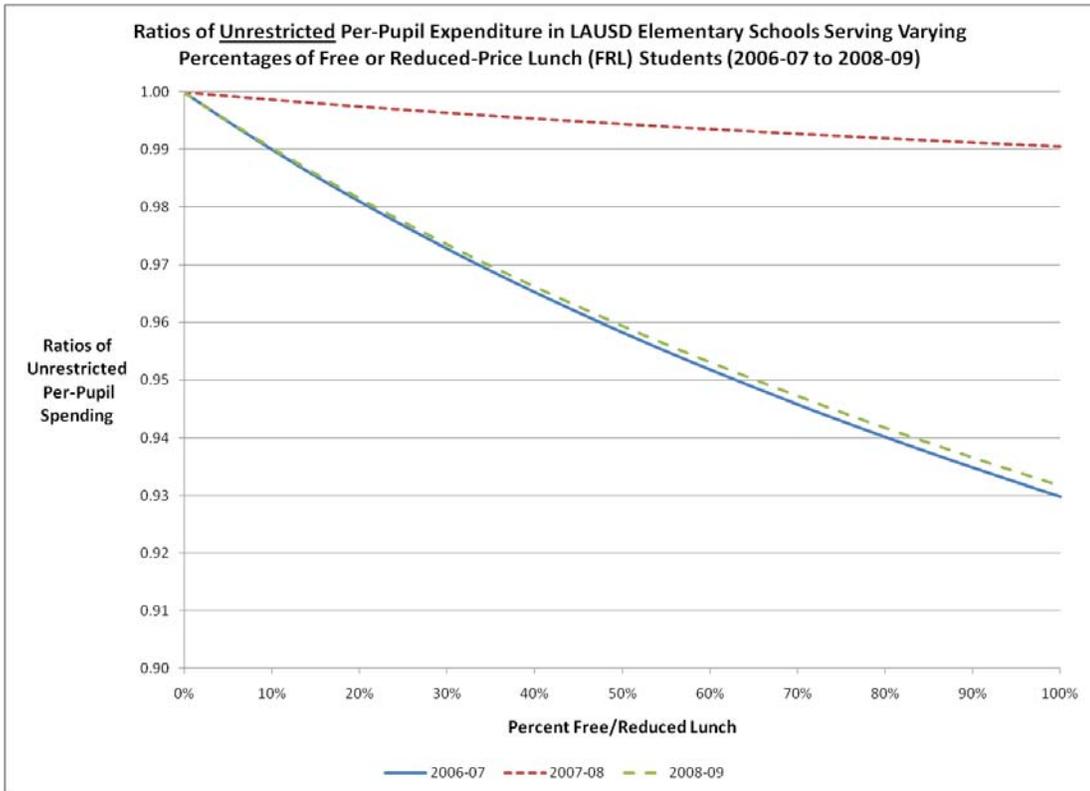
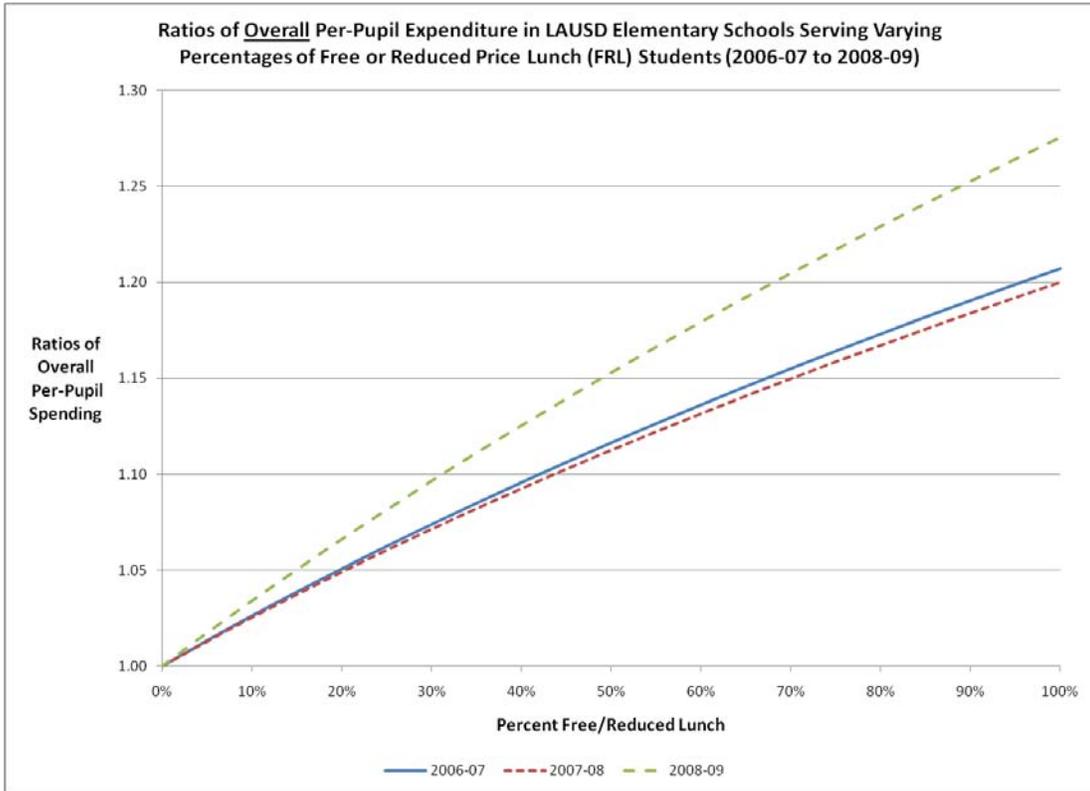
students from low-income families compared to a hypothetical school in which none of the students are from low-income families. This permits us to estimate the average additional educational expenditure going to a student from a low-income family compared to a student whose family is not low-income. For example, the simulated relationship presented in exhibit 4a suggests that the current policies, rules, and regulations that governed the distribution of resources across elementary schools in LAUSD in 2008-09 resulted in \$1.27 being allocated on average to a low-income student for every \$1 allocated to a non-low-income student. This can be observed by following the dashed green line in this exhibit to the highest shown point. Using the same logic, we can use the simulations in exhibits 4b and 4c to estimate the relative contribution to this \$1.27 from unrestricted and restricted funding, respectively. For example, for every dollar spent from unrestricted funds on a non-low-income student in 2008-09, about 93 cents was spent on a student from a low-income family, while for every dollar spent from restricted (categorical) funds on a non-low-income student in 2008-09, almost \$2.40 was spent on a student from a low-income family.

One can also see that these relationships vary from one year to the next. The overall relationship between spending

and percent low-income students became more positive (steeply sloped) from 2006-07 to 2008-09, following the increasing slope observed for spending out of restricted funding. Over the period between fiscal year 2007 to 2009, the spending pattern out of unrestricted funding ranged between 93 and 99 cents for a low-income versus a non-low-income student.

⁸ School size is controlled for to account for the fact that larger schools are less expensive to operate on a per pupil basis (i.e., they benefit from economies of scale).

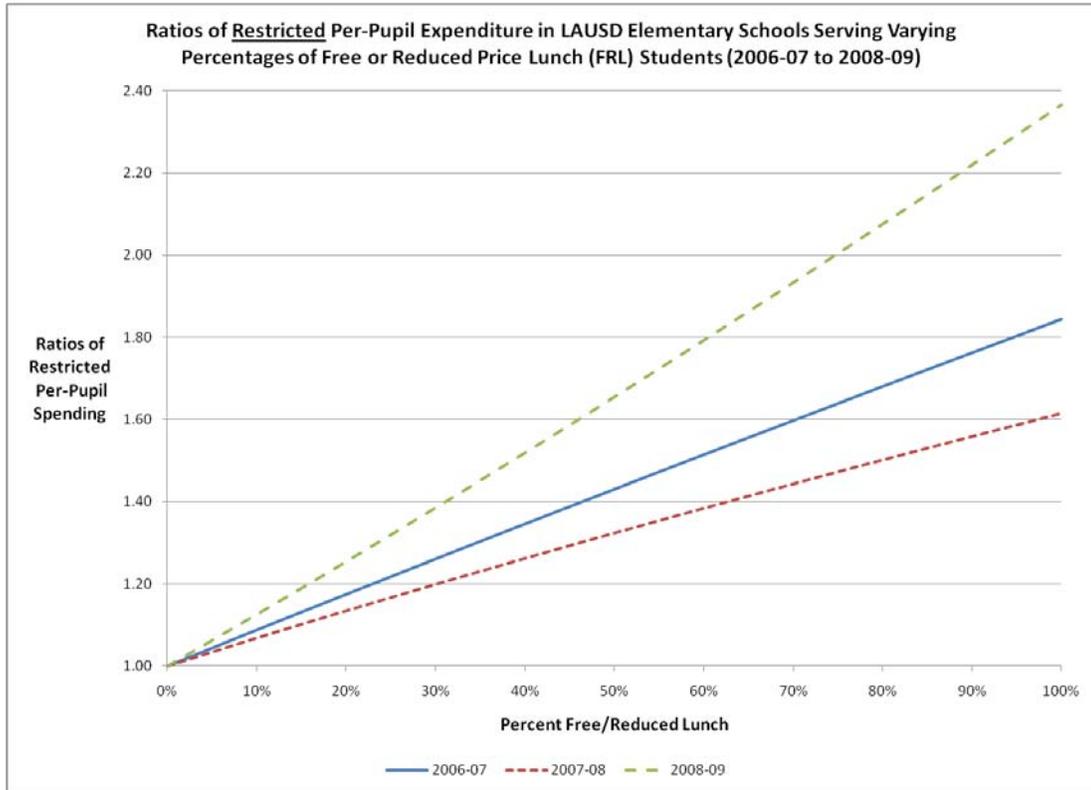
Exhibits 4a and 4b



Graphs show ratios of overall and unrestricted per-pupil spending for LAUSD elementary schools with various FRL percentages relative to a school with zero percent FRL students in 2006-07, 2007-08 and 2008-09. For example, the results in exhibit 4a show that in 2008-09 a school with 50 percent low-income students was predicted to spend 15 percent more per pupil compared to school with 0 percent low-income students (ratio equals 1.15).

Source: LAUSD central district office.

Exhibit 4c

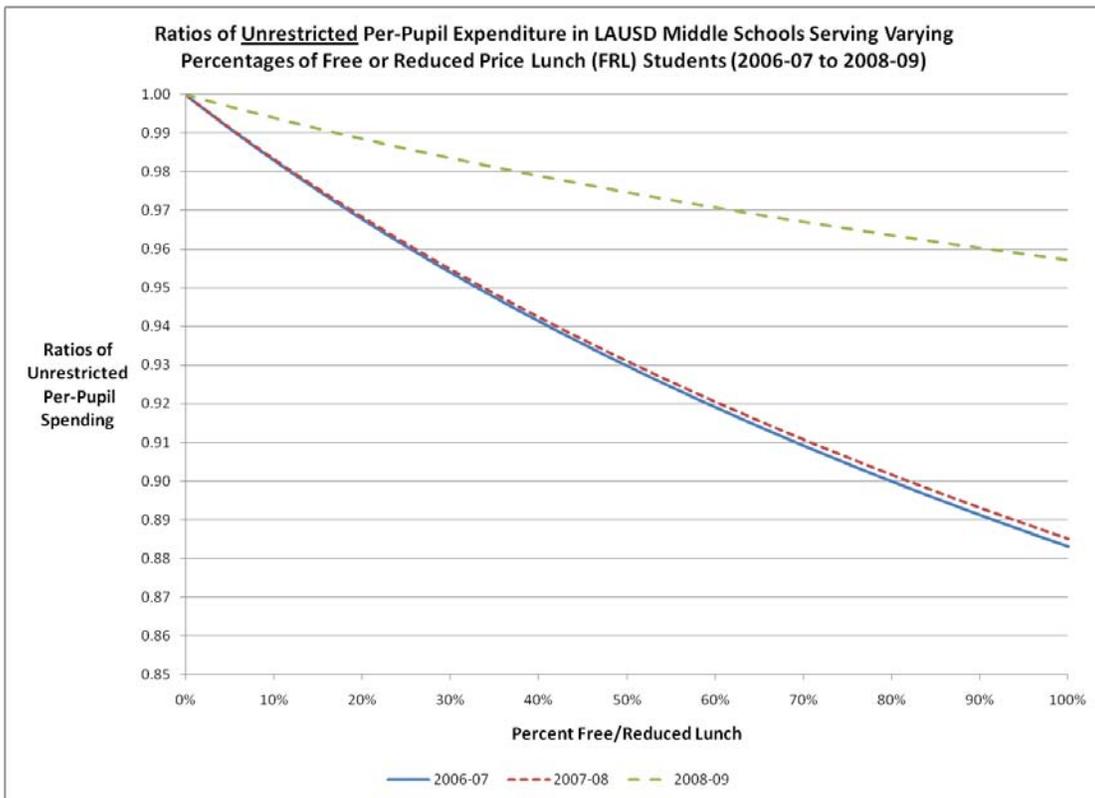
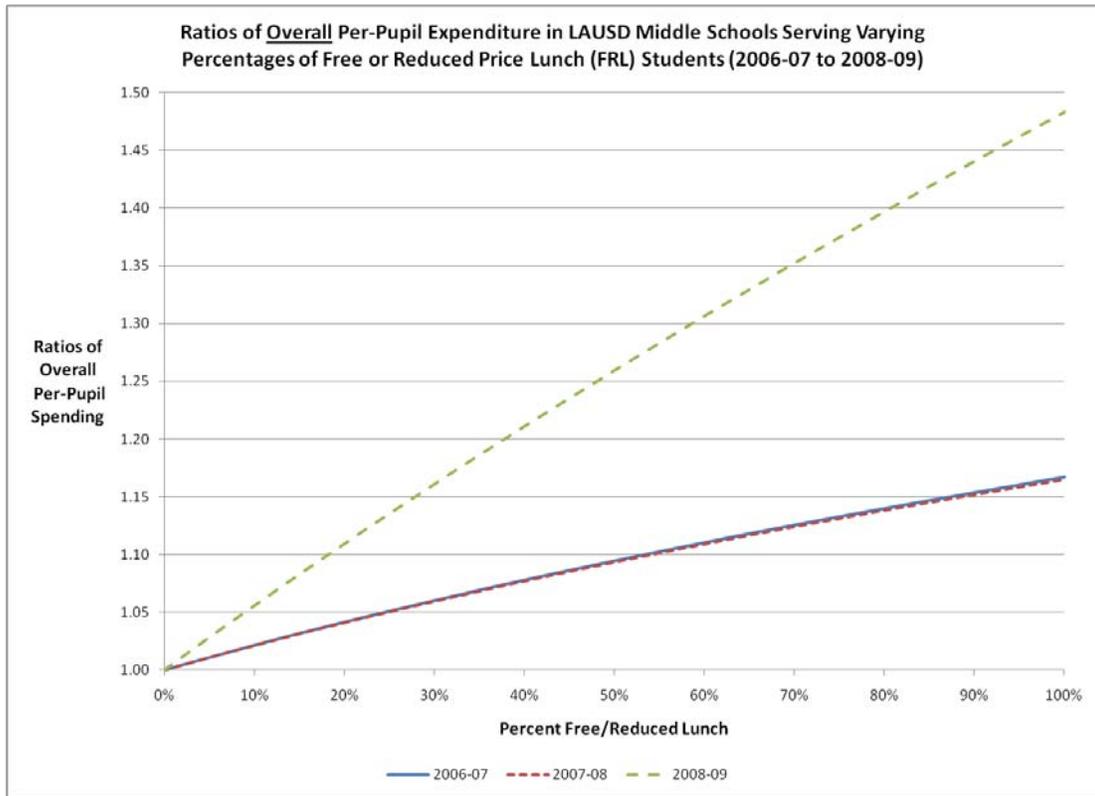


Graph shows ratios of restricted per-pupil spending for LAUSD elementary schools with various FRL percentages relative to a school with zero percent FRL students in 2006-07, 2007-08 and 2008-09. Source: LAUSD central district office. For example, the results in exhibit 4c show that in 2008-09 an elementary school with 60 percent low-income students was predicted to spend 80 percent more per pupil out of restricted funding compared to school with 0 percent low-income students (ratio equals 1.80). Source: LAUSD central district office.

Exhibits 5a, 5b, and 5c show that middle schools follow more or less the same relative pattern as elementary schools, though the magnitudes of the implicit spending differences between low-income and non-low-income students are somewhat larger in all cases. For example, while the elementary overall implicit spending difference for a low-income student is \$1.28, the middle school implicit spending difference for a low-income student is \$1.48 for 2008-09. The unrestricted spending difference in the same year was \$0.96 for the low-income versus non-

low-income student, while the restricted spending difference was in excess of \$2.60. However, unlike elementary schools, the implicit spending differences for middle schools all moved in a positive direction from 2006-07 to 2008-09: that is, the responsiveness of spending to differences in the percentage of low-income students tended to increase over time.

Exhibits 5a and 5b

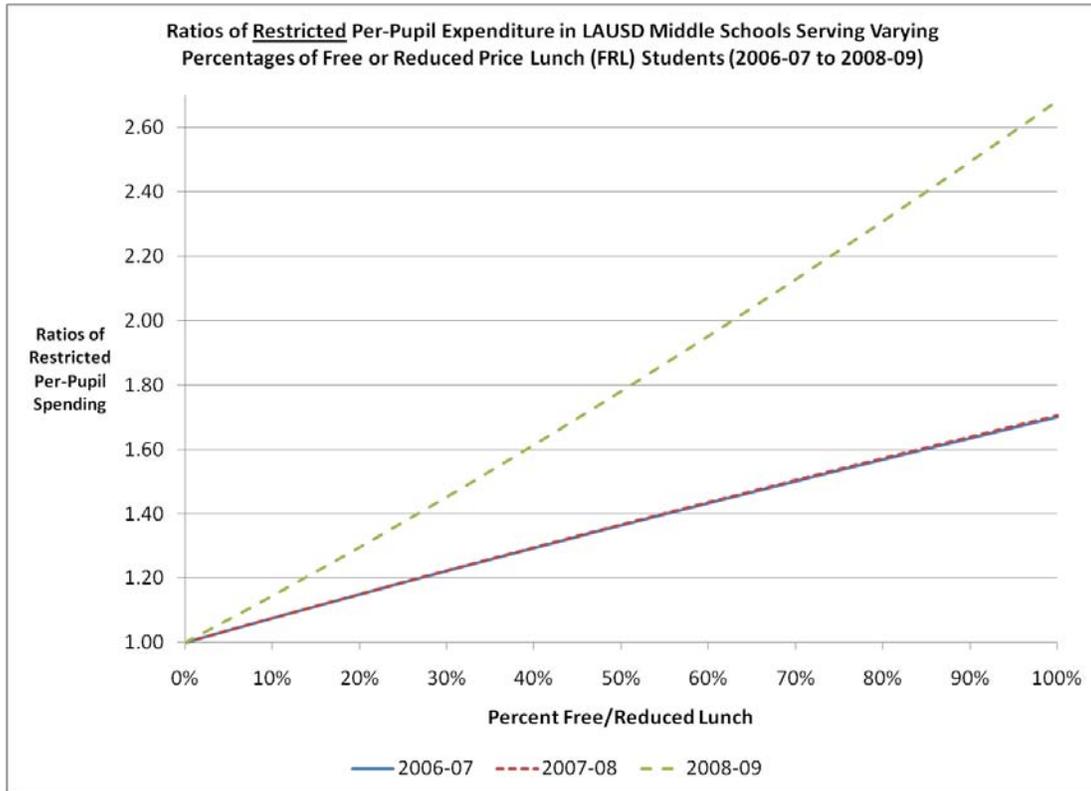


Graph shows ratios of restricted per-pupil spending for LAUSD middle schools with various FRL percentages relative to a school with zero percent FRL students in 2006-07, 2007-08 and 2008-09.

Source: LAUSD central district office. For example, the results in exhibit 5a show that in 2008-09 a middle school with 60 percent low-income students was predicted to spend 30 percent more per pupil compared to school with 0 percent low-income students (ratio equals 1.30).

Source: LAUSD central district office.

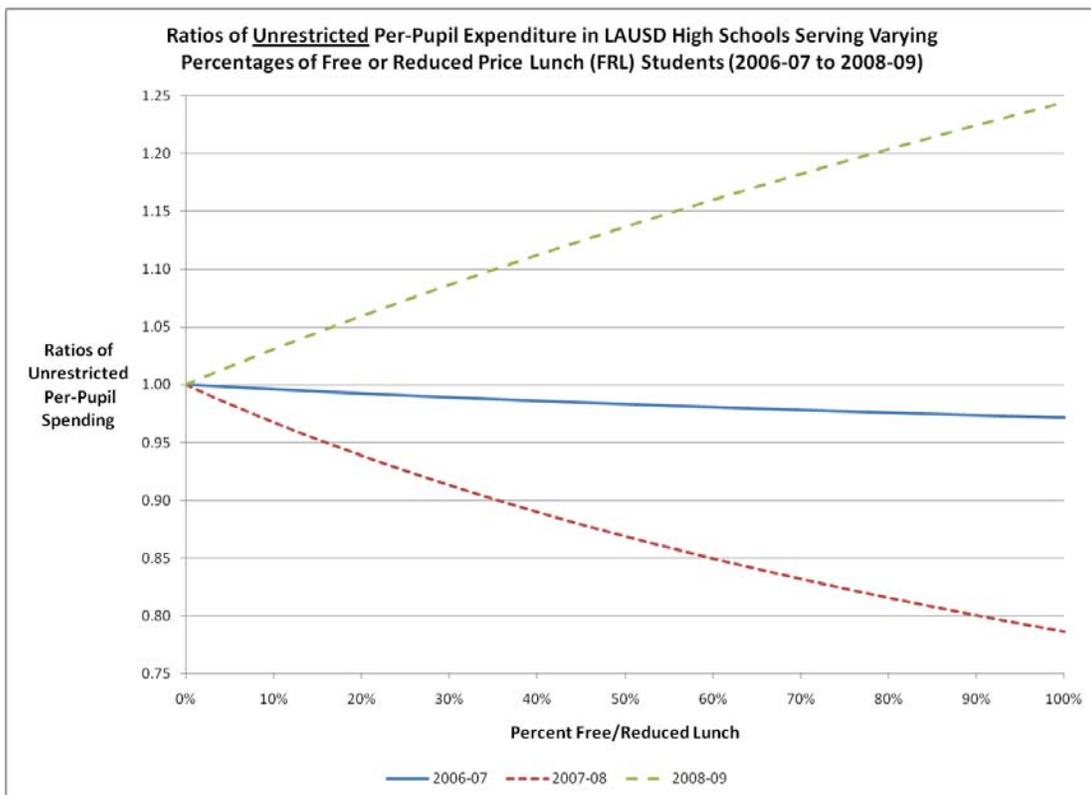
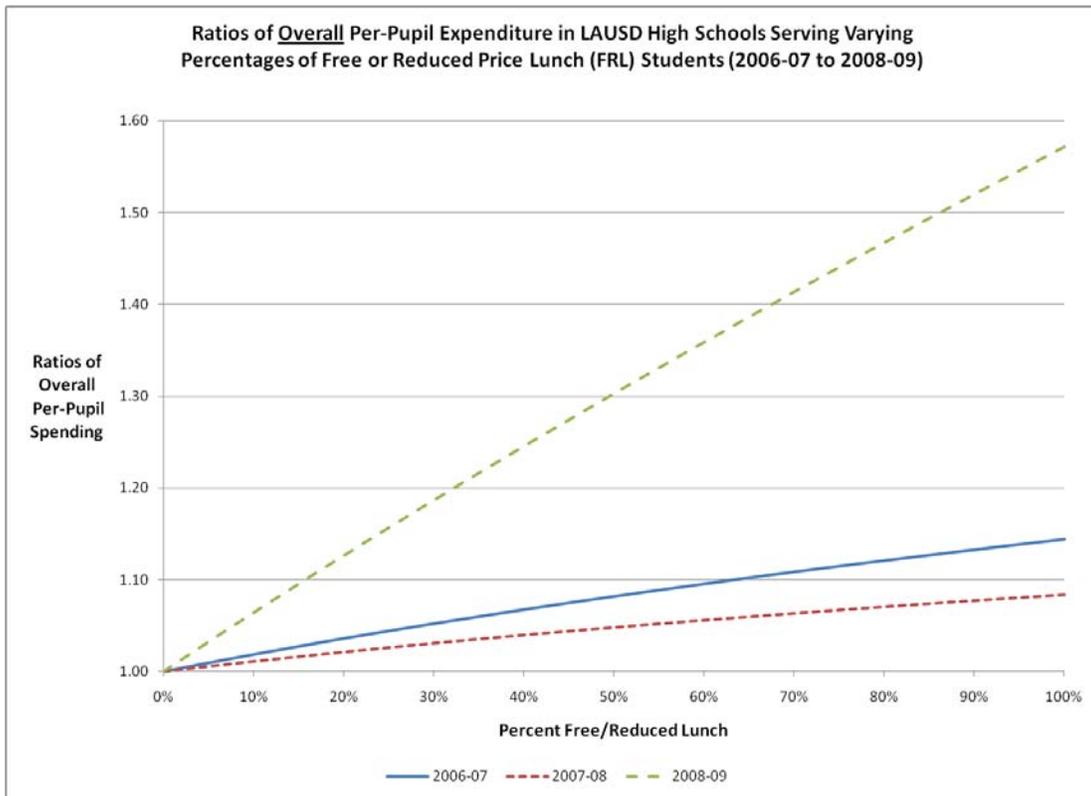
Exhibit 5c



Graph shows ratio of restricted per-pupil spending for LAUSD middle schools with various free and reduced price lunch percentages relative to a school with zero percent free or reduced price lunch students in 2006-07, 2007-08 and 2008-09. For example, the results in exhibit 5c show that in 2008-09 a middle school with 50 percent low-income students was predicted to spend 80 percent more per pupil out of restricted funding compared to school with 0 percent low-income students (ratio equals 1.80). Source: LAUSD central district office.

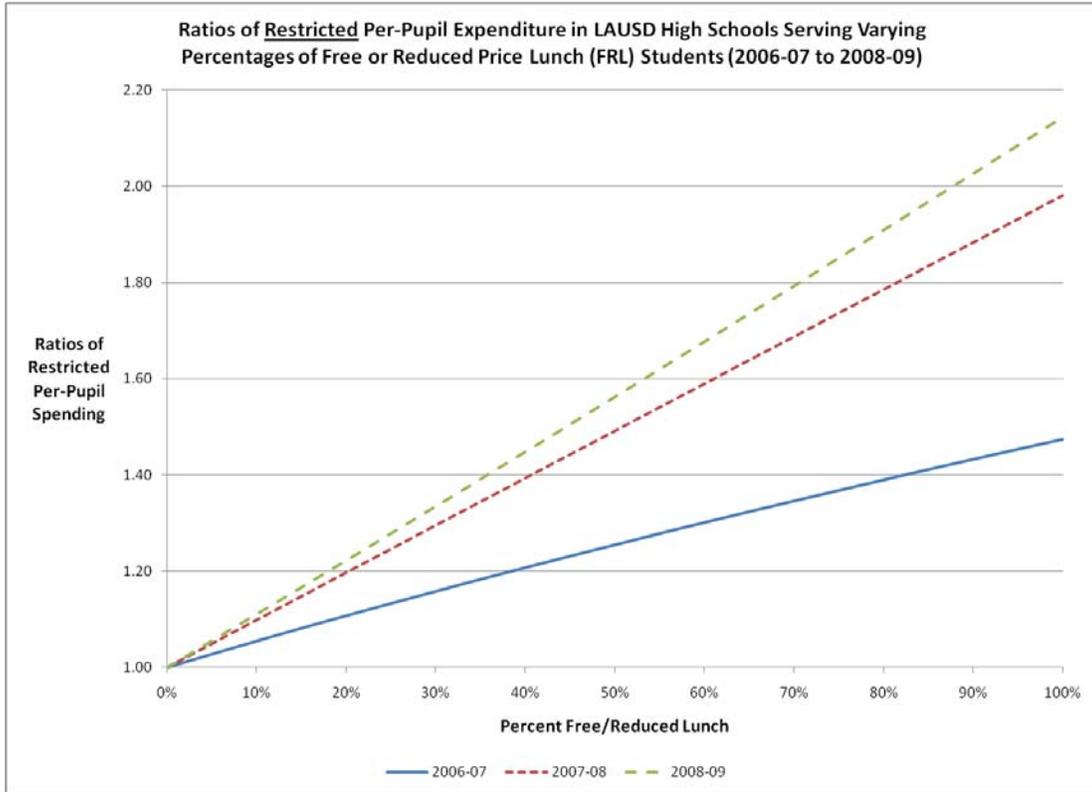
Exhibits 6a, 6b, and 6c imply that for high schools in 2008-09, the implicit spending difference for low-income versus non-low-income students was positive not only for overall spending (\$1.57) and restricted spending (well over \$2.00), as they were in the case of elementary and middle schools, but the implicit spending difference was also positive for unrestricted spending (close to \$1.25).

Exhibits 6a and 6b



Graphs show ratios of overall and unrestricted per-pupil spending for LAUSD high schools with various FRL percentages relative to a school with zero percent FRL students in 2006-07, 2007-08 and 2008-09. Source: LAUSD central district office. For example, the results in exhibit 6a show that in 2008-09 a high school with 50 percent low-income students was predicted to spend 30 percent more per pupil compared to school with 0 percent low-income students (ratio equals 1.30). Source: LAUSD central district office.

Exhibit 6c



Graph shows ratio restricted per-pupil spending for LAUSD high schools with various FRL percentages relative to a school with zero percent FRL students in 2006-07, 2007-08 and 2008-09.

Source: LAUSD central district office. For example, the results in exhibit 6c show that in 2008-09 a high school with 70 percent low-income students was predicted to spend 80 percent more per pupil out of restricted funding compared to school with 0 percent low-income students (ratio equals 1.80).

Source: LAUSD central district office.

Access to Teaching Personnel

► *Schools with higher percentages of students from low-income families tend to have lower pupil teacher ratios (i.e., more full-time-equivalent teachers per student), but they also tend to have less experienced teachers and greater proportions of students exposed to teachers who are teaching outside the subjects for which they are authorized to teach (i.e., more out-of-field teachers).*

Underlying the expenditure differences between schools serving varying percentages of high-need students are differences in the quantities and qualifications of the staff assigned to the schools. Using data available from the California Department of Education, we analyzed the relationship between the percentage of students from low-income families in a school and three personnel resource measures: teacher staffing ratio (the number of teachers per 100 students), average teacher experience; and the percentage of students being taught by out-of-field instructors (those that did not have the authorization in the subject area or schooling level they taught).

For sake of brevity, here we only present the findings for elementary and high schools. However, graphs for all three

levels are included in the Technical Appendix.⁹

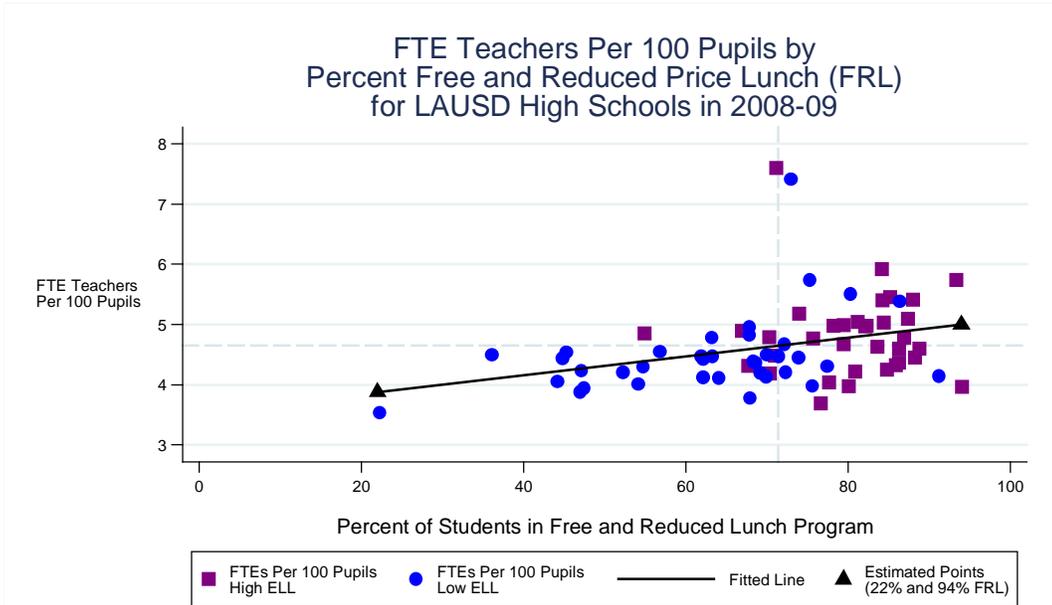
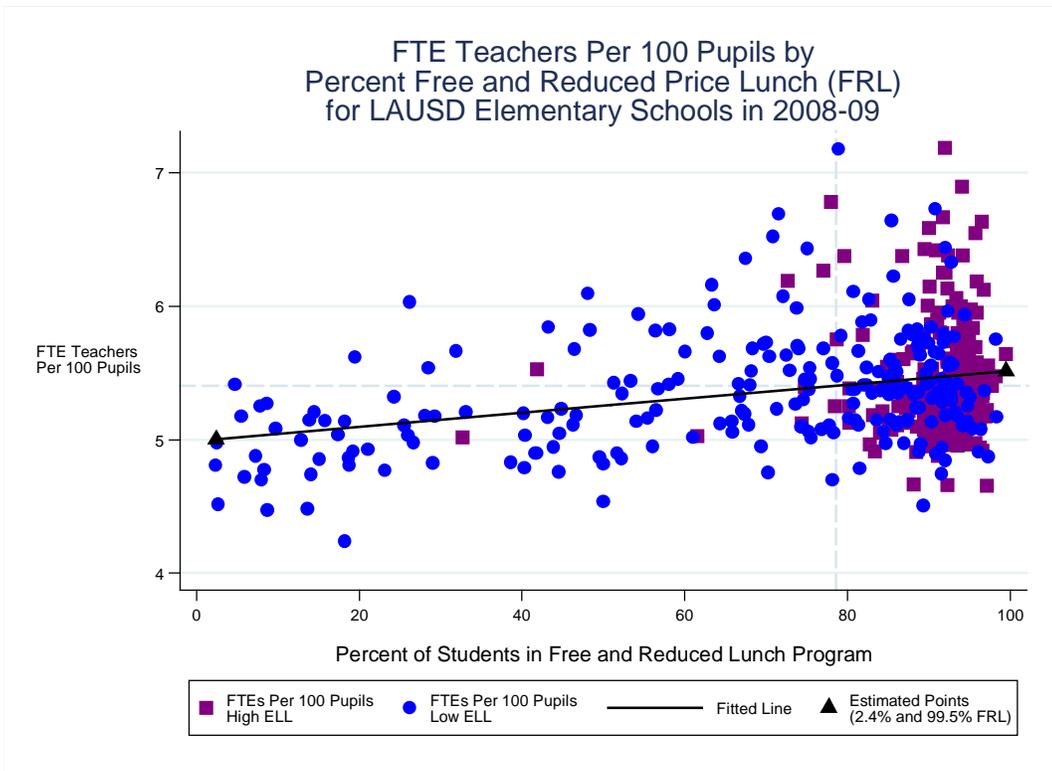
Exhibits 7a and 7b show the results of the teacher staffing ratio analysis for elementary and high schools, respectively. Based on our analysis of these data, we estimate that the average elementary school serving the highest percentage (99.5 percent) of low-income students is predicted to employ about 5.5 full-time-equivalent teachers per 100 students (equal to a pupil-teacher ratio of about 18 to 1), while the schools with the lowest percentage (2.4 percent) of low-income students are predicted to employ about 5.0 full time equivalent teachers per 100 students (a pupil teacher ratio of 20 to 1). Predicted points are again represented by the two black triangles that appear on the fitted line.

For high schools, these teacher staffing ratios range from five teachers per 100 students in the schools with the highest percentage (94 percent) of low-income students, to four teachers for every 100 students in the schools with the

lowest percentage (22 percent) of low-income students.

⁹ With the exception of the analysis of out-of field teaching, the middle school patterns of teacher staffing ratios and average experience are consistent with our findings for elementary and high schools. The analysis of out-of-field teaching for middle schools tends to reveal substantially higher levels than we observe for high schools. However, we are not entirely confident of how best to interpret our measure of out-of-field teaching in the case of middle schools.

Exhibits 7a and 7b



Graphs show plots of teacher staffing ratio by percent FRL in 2008-09 across LAUSD elementary and high schools. Solid line indicates estimated relationship between teacher staffing ratio and FRL. Dotted lines indicate average levels of teacher staffing ratio and FRL. Source: LAUSD central district office.

In both elementary and high schools, one observes a negative relationship between teacher experience and the percentage of low-income students. For elementary schools, the difference in average teacher experience between the highest (99.5 percent low-income) and lowest need schools (2.4 percent low-income) is just under one and a half years (exhibit 8a). For high schools the difference between the highest (94 percent low-income) and lowest need schools (22 percent low-income) is about 3.7 years (exhibit 8b). While one could argue based on previous literature that differences in average teacher experience may not translate directly into differences in teacher quality, such experience differentials do translate into significant differences in the average compensation levels of teachers between schools serving varying percentages of low-income students.¹⁰ Such differentials represent funds that could potentially be used to improve instruction in the more disadvantaged schools by employing more qualified teachers under alternative compensation schemes or to provide resources for more or better professional development.

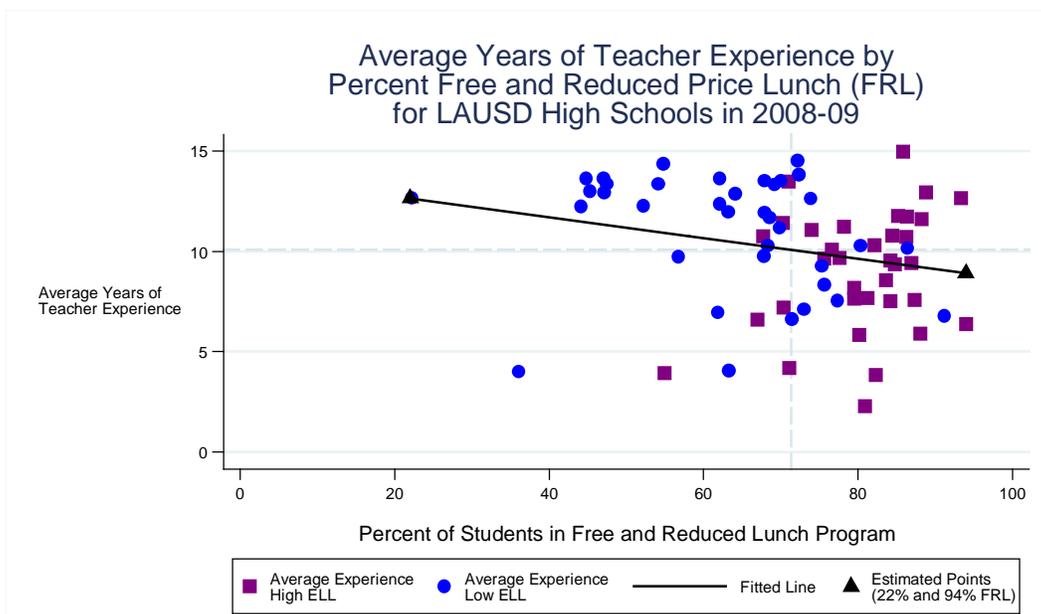
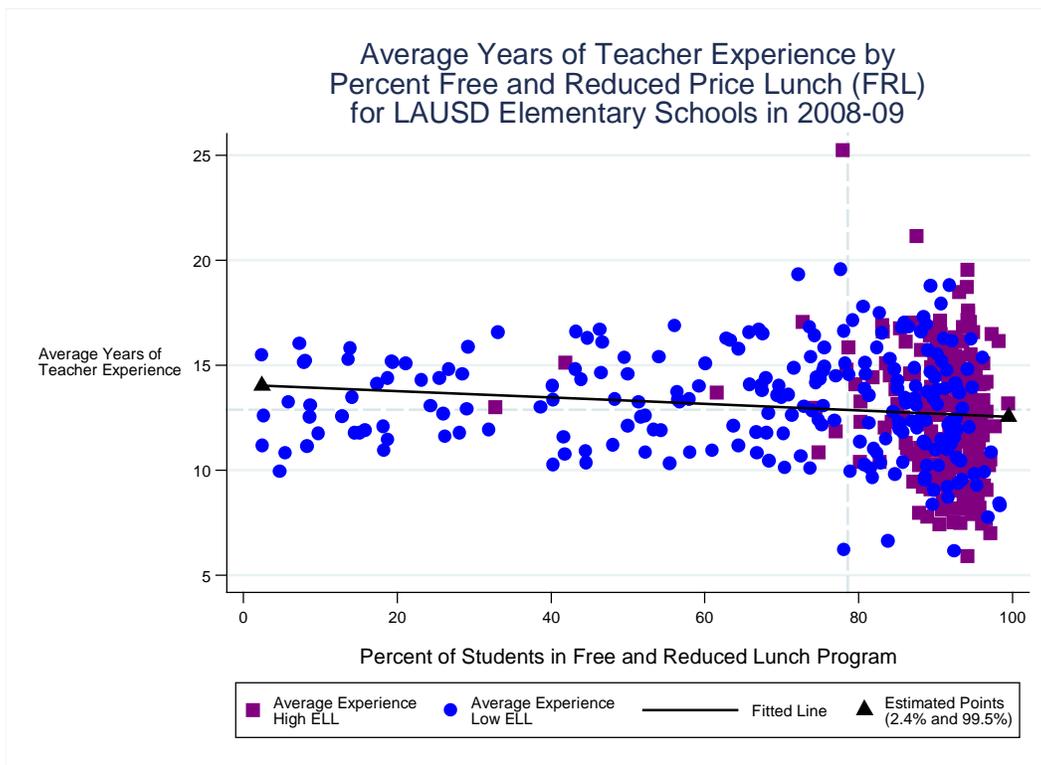
¹⁰ See For a discussion of the relationship between teacher quality and experience see Murnane, Richard J., and Jennifer L. Steele. 2007. "What Is the Problem? The Challenge of Providing Effective Teachers for All Children." *Future of Children* 17, no.1 (Spring):15-43.

In addition to the differences in teacher experience, we also observe that for schools at both the elementary and high school levels, those with higher percentages of low-income students appear to have more out-of-field teaching, on average (see exhibits 9a and 9b). However, the degree of out-of-field teaching appears to be larger than what we observe at the elementary level. For example, in high schools, as many as 7 percent of the students in core subjects (English, math, science, social science and foreign languages) are taught by teachers who are not authorized to teach these subjects, while this figure is closer to 1 percent in the schools with the lowest percentage of low-income students. This same pattern holds in each of these subjects taken separately, with the largest difference found in science.¹¹

Elementary schools show a slightly positive relationship between out-of-field teaching and the percent of low-income students, but the magnitude of the relationship is much smaller and generally below 2.5 percent throughout the range of concentrations of low-income students.

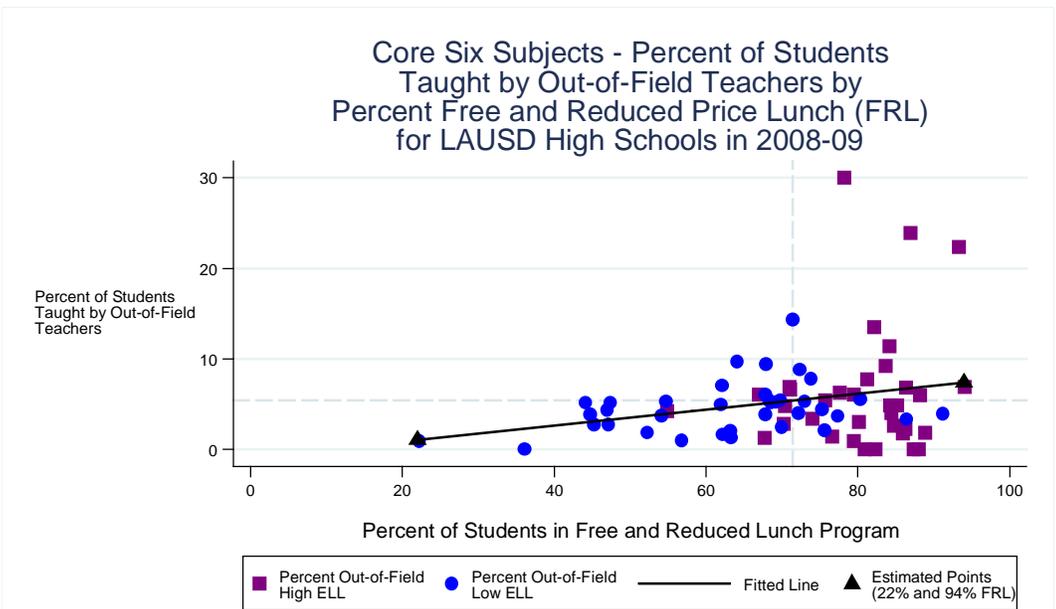
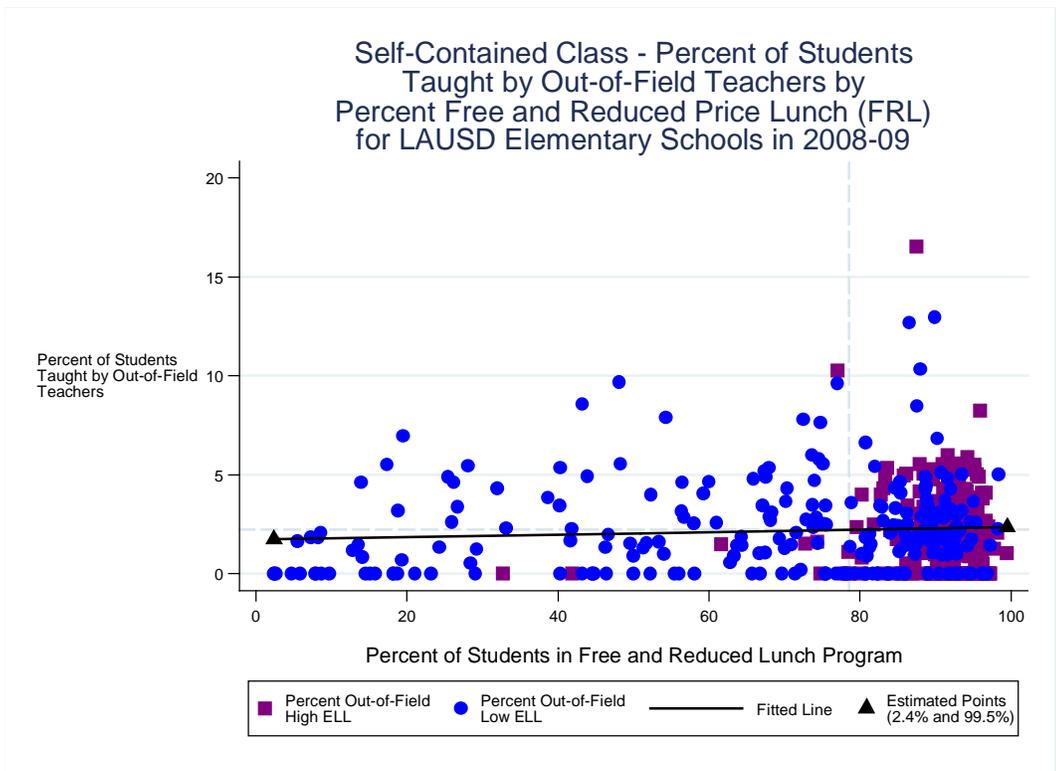
¹¹ See the Technical Appendix for all of the tables and graphics that support this analysis.

Exhibits 8a and 8b



Graphs show plots of average teacher experience by percent FRL in 2008-09 across LAUSD elementary and high schools. Solid line indicates estimated relationship between teacher experience and FRL. Dotted lines indicate average levels of teacher experience and FRL. Source: LAUSD central district office.

Exhibits 9a and 9b



Graphs show plots of percent out-of-field teaching by percent FRL in 2008-09 across LAUSD elementary and high schools. Solid line indicates estimated relationship between percent out-of-field teaching and FRL. Dotted lines indicate average levels of percent out-of-field teaching and FRL. Source: LAUSD central district office.

Concluding Remarks

Using data on school level performance from the California Department of Education (CDE), fiscal data provided by the school district finance office, and personnel data obtained from the California Basic Education Data System maintained by the California Department of Education, we have presented analyses that provide a foundation that local policymakers can use to assess whether there are inequities in the way fiscal and personnel resources are distributed across schools. We found that:

- Schools with the highest percentage of students from low-income families exhibit the lowest performance on the California Academic Performance Index (API).
- The highest need schools generally spend somewhat more than the lowest need schools and most of this difference is driven by categorical or restricted funding.
- In elementary and middle schools, spending of unrestricted funds tends to be lower in the highest need schools, and these differences in spending provide a counter-balance against the additional spending supported by restricted (or categorical) funds.
- Elementary schools tend to outspend their middle and high school counterparts.

- Schools with the highest percentages of low-income students have relatively more FTE teachers per 100 students.
- In terms of the qualifications of teachers, schools with the highest percentages of low-income students have less experienced, and hence lower paid, teachers and more out-of-field teaching, on average.

We leave it to the local policymakers to determine the implications for equity within the district. Indeed this returns us to the question we asked at the beginning of this report:

Do higher need students have sufficient access to the additional resources they need to achieve the district and state educational goals?

Put simply, the question comes down to, “*How much is enough?*”

To answer this question, district policy makers must follow several steps:

- 1) Be explicit about the goals that have been set for all students across the spectrum of educational needs.
- 2) Ascertain what programs and services will be necessary to achieve those goals.
- 3) Cost out the resources necessary to deliver those programs and services across the range of student need populations.

- 4) Create a need-based funding model for allocating funding to schools based on this costing out analysis, and then compare the results of the need-based funding model to the actual patterns of spending and resource allocation observed in this report.

This comparison would provide the district with a way of assessing whether the current patterns of resource allocation are sufficiently equitable to achieve their goals.