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NOT CONDEMNED TO FAIL

An Analysis of California's Low Performing Schools

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EXECUTIVE SUMMARY

The results of this study support the following conclusions:

1. There is cause for cautious optimism about the course of accountability policies in the state. Less than 1 percent of the elementary, middle, junior, senior and k-12 schools in the state had chronic failure over three years. The incentives embodied in the Public School Accountability Act appear to promote positive responses in schools.

2. While proportionally a small fraction of all schools, the 70 chronically failing schools have jeopardized the education of over 90,000 students. No plan exists at this time to reclaim their futures with intensive intervention and remediation. Their loss today is California's loss tomorrow.

3. Traditional views that excuse low performance undermine the real capability of schools to make the necessary changes to improve. The evidence shows overwhelmingly that schools can and do improve even though the majority do not participate in any formal improvement program.

4. While the 70 failing schools renew efforts to improve under state monitoring and the School Assistance and Intervention Teams (SAIT) program, state and district officials should develop contingency plans to minimize the harm that chronic school failures imposes in students.

STUDY OVERVIEW

This report provides evidence that the lowest performing schools in California are by and large showing significant improvement in their academic achievement, as measured by the Academic Performance Index (API), a school-level composite of student achievement test scores. Each year, schools are divided into deciles based on their scores, with Decile 1 consisting of the lowest performing schools. There have been five cohorts of Decile 1 schools identified since the beginning of the API in 1999, consisting of over 1100 schools. The 970 schools in the 1999, 2000 and 2001 cohorts are the focus of this study, which examined their progress in the two years following their designation as Decile 1 schools.

After repeated notice of poor performance, there are 70 schools—disproportionately urban and high schools—that have failed three years in a row. These schools represent about one percent of all California schools and around 7 percent of schools designated as Decile 1 schools. Over 90,000 students who are enrolled in these schools are being robbed of their educational opportunities. Districts and the California Department of Education have further optioned these students by providing the schools extended remediation efforts through the School Assistance and Intervention Teams (SAIT) process with no parallel intervention for the students caught in the middle.

The news of chronically failing schools overshadows the solid gains by the other Decile 1 schools. On average, Decile 1 schools improved more than the average school in the state. API scores range from 200 to 1000. The average California school gained 86 points on the API between 1999 and 2003. Elementary schools showed larger gains than middle schools or high schools. By comparison, the equivalent gain for Decile 1 schools was 176 overall. Like the state as a whole, when broken out by grade level, elementary schools fared better than middle schools or high schools.

The majority of Decile 1 schools are partially or fully meeting their Annual Growth Targets. In addition to absolute API scores, all schools are evaluated on their progress, known as Annual Growth Targets. A small proportion of schools failed to meet their growth targets

over a two-year period following their entry into Decile 1; about 9 percent of each cohort does not make sufficient progress in either year. The remaining schools (90 percent of each cohort) were found to make progress in at least one of the years, with a sizable share meeting their targets in both years.

Careful analysis of Decile 1 schools refutes the notion that schools' mix of students or resources prevent them from making gains. Schools with similar attributes were just as likely to make significant gains as small gains, based on regression analysis. In addition, the likelihood that a school would fail to meet its growth targets was largely unaffected by most of the factors that are currently measured about a school. From what is known about schools today, there is no "fatal factor" that condemns a school to failure.

INTRODUCTION

California is rightly concerned about the performance of its public schools. From its enviable position in the 1970s as a model system, the condition of schooling in California slid to its current standing among the worst states in the nation.[1] After decades of unsuccessful reform efforts, a system of school accountability—common measures of school performance and explicit consequences for outcomes—was introduced in 1998. Since adoption of the Public School Accountability Act of 1998, schools have been judged on a school-wide aggregation of standardized student achievement tests scores known as the Academic Performance Index (API).[2] For the first time, this common yardstick puts the results of all schools on equal terms.

The API also highlights the relative positions of schools. Schools are ranked annually based on their scores, separately for elementary, middle schools and high schools. The ranks are divided into ten equal groups, with Decile 1 containing the lowest 10 percent of schools. It is little surprise that Decile 1 schools receive the designation of "high priority schools."

As enabled in The Public School Accountability Act of 1998 and revised in the 2003 enactment of the High Priority Schools Grant Program,[3] the California Department of Education oversees targeted interventions for schools with low performance. Under both laws, low-performing schools' participation was voluntary, but involvement allowed schools to access funding to design and then adopt plans to improve their quality of education. Rigorous evaluations of these programs revealed that the programs do not significantly impact the academic achievement of schools.[4] Schools that participated in the interventions did not perform any better as a result of their efforts than similar schools that did not join the programs.

Despite the bleak evaluations of the intervention programs' results, the outlook for California's failing schools is better than a few years ago. This report presents research on the progress of California's worst schools. A small share does not respond to reports of poor performance. These schools are cause for great concern about the fates of the enrolled students who are affected. On the whole, however, poorly performing schools, regardless of their starting point, can and do make meaningful academic progress, as measured by the API. Perhaps most important from a public policy vantage, there are no known factors that condemn a school to chronic failure. Based on what we know today about schools and their students, for every school that

fails to turn its performance around, there are multiple schools like it that have and are working their way out of the failing school category. This welcome evidence puts the critics and naysayers on notice that real progress IS possible even for the most challenged schools.

A Backdrop of Statewide Improvement

The gains realized by the lowest performing schools appear even more significant in light of an overall trend in improved Academic Performance Index scores. The average API scores in California have consistently gone up since they were introduced. As shown in Figure 1, the average API score in California has risen from 630 in 1999 to 717 in 2003. (While changes in the tests used to formulate the API make it difficult to compare scores longitudinally, the trend in average scores is still noteworthy.) By school level, elementary schools show the largest increases, and high schools show the smallest gains. Regardless, the trend is positive for all school types.

Figure 1. Average API Score All California Schools

1999	2000	2001	2002	2003
630	665.2	680.4	689.7	717.4

Figure 2. Average Change in API Scores All California Schools

1999-2000	2000-2001	2001-2002	2002-2003
32.7	15.9	9.4	28.3

Consistent with other research, these figures suggest that accountability has produced a real and significant gain in academic achievement.[5] The introduction of consequences, as are present in the Public School Accountability Act, creates more positive gains than either no accountability or softer accountability approaches such as simple reporting of results. As shown in Figure 2, the gains were not equal across every year. Gains declined from 32.7 API points between 1999 and 2000 to 9.4 points between 2001 and 2002, likely influenced by the afore-

mentioned changes in the tests making up the API. Between 2002 and 2003, there was a return to large gains with an average gain of 28.3 API points. Again, the pattern was consistent across all school types, although high schools showed smaller gains than other schools.

But the averages do not tell the full story. The changes in statewide average scores on their own suggest that from a low-performing school's starting point, the state average is moving further away each year. But that is not the case. In reality, the distribution of schools is getting tighter. Over time, the difference between the best schools and the worst schools is getting smaller, reinforcing the overall pattern of improvement.

The two trends have important implications for the progress of low-performing schools. The upward shift in the average score and the narrowing of the distribution affect the chances of the lowest-scoring schools to achieve sufficient improvement to exit the lowest decile of the distribution. With the average score rising, the score needed to exit the lowest decile is a moving target. All else being equal, schools in the lowest decile that managed to improve their API scores by the same number of points as the state average would still remain in the lowest decile. This means that the schools that struggled the most academically had to make greater than average gains. With a narrowing distribution across all schools, schools are more closely clustered, so even if schools show some improvement they may remain in their original decile. These characteristics provide the backdrop for the experience of the Decile 1 low-performing schools.

Profile of Decile 1 Schools

Since 1999, a total of 1199 schools have posted API scores that have landed them in Decile 1.[6] The schools are grouped into cohorts based on the year in which they were first identified as Decile 1. There have been six cohorts of Decile 1 to date, with the largest group identified in the first year of the API. This report focuses on the 1999, 2000 and 2001 cohorts because they have had several years available to demonstrate resolve and show progress.

Decile 1 schools show patterns of improvement similar to the state as a whole over the period 1999–2003. Figure 3 presents a similar trend of API gains for Decile 1 schools, broken out by type of school. It is noteworthy that the 4-year change for each school level for Decile 1 is larger than for the state as a whole. This means that not only are Decile 1 schools improving

Figure 3.
Decile 1 Schools Average API Scores

	1999	2000	2001	2002	2003	4 yr change
Elementary	410.7(28.9)	450.9(33.7)	488.4(31.4)	529.9 (29.0)	577.5 (29.2)	166.8
Middle	424.5(29.2)	445.9(30.3)	470.6(29.9)	496.8 (30.5)	529.9 (31.4)	105.4
High	442.5(27.8)	453.8(30.1)	460.5(37.3)	477.1 (45.1)	501.7 (46.9)	59.2

each year, but that they are closing the gap over time.[7] As with the state as a whole, the smallest gains are found in high schools. They gain about half as much as middle schools, which in turn have about two-thirds the gain of elementary schools.

The progress achieved by schools that make up Decile 1 is surprising, when considering how they differ from the average school in California. A comparison of characteristics is displayed in Figure 4. In terms of demographics, Decile 1 schools have a dramatically higher proportion of minorities, English language learners and students that qualify for free and reduced-price lunch. The share of minority students in Decile 1 schools was found to be 35 percentage points more than the state average. An even larger share of Decile 1 students are eligible for free and reduced-price lunch, 90 percent compared to 49 for the state average. And Decile 1 schools had more than double the proportion of English language learners. Each of these demographics has trended over time with lower nominal levels of achievement—the lower side of the achievement gap. In addition, the parents of students in Decile 1 schools were found to be less educated, as reflected in the share of the school's parents that did not finish high school, or the share that attained a bachelor's degree or beyond. The share of parents not finishing high school is more than double the state average for Decile 1 schools, and one third as many parents complete college or beyond. Lower parental education is also associated with lower levels of performance, as measured by test scores. So it is clear that the Decile 1 schools contain higher proportions of students who historically have performed worse than the typical student in California.

One surprising finding is that Decile 1 schools do not differ from the state average on teacher resources as dramatically as they do on student demographics. While it is true that there are

Figure 4.
School Characteristics

	Decile 1 Schools	State Average
Minority Students	95%	59%
Students Eligible for Free and Reduced-Price Lunch	86%	50%
English Language Learner Students	56%	24%
Parents not High School Graduates	47%	19%
Parents College Graduate or Beyond	11%	33%
Teachers with Full Credentials	74%	88%
Teachers with Emergency Credentials	24%	11%

twice the share of emergency credentialed teachers in Decile 1 schools (24 percent compared with 11 percent for the state average), the absolute proportions are lower than one might have expected. Just about three quarters of teachers in Decile 1 schools hold full credentials, down from the state average of 88 percent.

Of course, these figures mask the fact that the figures may be different for individual schools. Some have speculated that the presence of full credentials may not assure that the Decile 1 teachers are equivalent to those in higher performing districts. Some insight to the question comes from recent work by Hanushek and Rivken, who found in Texas that the conventional wisdom that all the "good" teachers leave low-performing schools was a fallacy.[9] Until individual teachers can be followed over time, we will not know if the same is true for California.

How Unusual Are Decile 1 Schools?

It would be a mistake to assume that because schools have high concentrations of minorities or English language learners or economically disadvantaged students that a school is conscribed to failure. Yet, that is the scenario assumed by many people. How valid is that viewpoint? The simple answer is: not very accurate.

A comparison of the characteristics of the 1999 cohort of Decile 1 schools—the largest cohort—with the top half of the state API distribution of schools revealed the following findings:

> Of schools in which the percentage of minority students was greater than or equal to 95 (the average for the 1999 Cohort), there were 86 schools that were in Decile 5 or higher. Even though the 86 represent a small share (5 percent) of all schools with similar concentrations of minorities (95% or more), the fact that there are so many of them suggests that high performance for minorities is both realistic and achievable.
>
> Of schools in which the percentage of students eligible for free and reduced-price lunch was greater than or equal to 86%, there were 69 schools that were in Decile 5 or higher. The 69 schools accounted for 3% of the schools with similar levels of SES.
>
> There were 57 schools in which the percentage of English language learners was over 56% that were in Decile 5 or higher. Again, this is less than 4 % of the schools with this proportion of English language learners.

The existence of so many schools that are similar to those in Decile 1 but achieve solid performance suggests that no schools—regardless of the population of students they serve—are relegated to the bottom of the barrel. Greater support for this idea lies in the fact that the 2003 results show an *increase* in the numbers of schools with equivalent or higher shares of low income students, ELL students, or high-minority populations in the upper half of the score distribution. So not only can all types of schools do well, but all kinds of schools can do better. These simple associations are expanded upon later.

How is Performance Judged?

According to the rules of the Academic Performance Index, all California schools whose API rank falls below the state mandated target of 800 must make annual incremental gains toward that score. These gains are referred to as the "Annual Growth Targets." By design, Decile 1 schools have the largest requirement for gains, by virtue of being the furthest from the 800 score target.

Further, under the *No Child Left Behind* legislation, the state is required to demonstrate that students are making "Adequate Yearly Progress" towards state-set proficiency standards. The standards are set for Basic and Advanced Proficiency. Each year, schools are required to demonstrate that a fixed percentage of their students are at the Basic threshold. For 2003, for example, elementary and middle schools were required to have 13.6 percent of their students at proficient or above in English Language Arts (ELA) and 16 percent of students at proficient or above in mathematics. For high school, the thresholds were 1.2 percent for ELA and 9.6 percent for mathematics.[10] Here, too, Decile 1 schools must produce the largest incremental change.

For schools designated as "high priority" schools, their progress is carefully tracked for two years to determine if they achieve the required Annual Growth Targets. Schools that successfully make Annual Growth Targets two years in a row are released from their probationary status. Schools that make their targets one year out of two are maintained on watched status. According to the legislation, schools that do not make Annual Growth Target in either year are subject to further state intervention.

It bears mention that the requirements in *No Child Left Behind* for Adequate Yearly Progress, while not directly tied to the High Priority Schools Program, present schools with a more challenging standard of performance. Not only must schools meet the progress requirements for the school as a whole, they also must document equivalent progress across 11 designated subcategories of students. If a school fails to produce progress in a single subcategory, it fails to achieve Adequate Yearly Progress. However, there are loopholes in the federal policy that make it less onerous than the state policy. In practical terms, it remains the responsibility of the state to enforce accountability practices.

What Happens to Decile 1 Schools?

Low-performing schools have been treated to a barrage of conflicting speculation about their prospects for improvement. Often well-meaning and concerned, some groups focus on what low-performing schools *can't* do, by suggesting that it is unfair, unconscionable or illegal to hold out high standards for school improvement if they enroll poor, minority or immigrant children. Others dwell on what they *shouldn't be expected to* do, supposing that the challenge

cannot be met without dramatic supplements to the resources that schools receive. Those in favor of standards and accountability point to the incentives inherent in accountability policies, considering that schools *ought to be* motivated to make improvements. Few of these expectations have been empirically examined. The historic performance of Decile 1 schools provides just such a chance to learn what they *actually* do achieve.

For this study, Decile 1 API scores were analyzed in a variety of ways to learn what happens to them. Beyond trends in decile average score gains, we examined cohorts separately to see how these schools responded in each year following their designation as Decile 1 schools. We also subdivided the decile into smaller ranges of scores to see if the trends were dependent on a school's initial starting position. Finally, we developed econometric models to test simultaneously if the factors that have been offered as predictive of progress, or conversely lack of it, have statistical merit. The results are consistent and encouraging.

The average performance of Decile 1 schools supports the idea that sustained progress is a reasonable expectation for all schools, regardless of their initial levels of competence. While a slim margin of schools continues to fail, the majority are on the rise.

Some Schools Do Not Progress

While the number is small relative to the number of schools that have been designated Decile 1 schools, 70 schools in 30 districts did not met their growth targets for both of the two years following their first being identified as Decile 1. These schools represent 7 percent of the 964 schools whose scores that placed them in Decile 1 between 1999 and 2001. Despite the efforts they have made to improve, these schools show a continuing trend of low performance. They are failing schools. An alphabetic listing of the schools appears in Appendix A.

Closer examination of the schools is revealing. High schools are over-represented among failing schools. While across the state high schools make up 12.7 percent of the population of schools, among those that do not show improvement over two years, high schools account for 37 percent. One possible explanation is that since academic improvement programs have been so heavily concentrated at the elementary level, they have been better able to show the necessary growth in API.

Forty-five failing schools operate in the seven largest school districts, each with multiple failing schools. Los Angeles Unified School District tops the list with 17 failing schools, but Oakland Unified School District and Fresno School District have higher proportions of their schools fail, with 8 and 6 respectively. Twenty-one districts had only one failing school, as shown in the table below.

Figure 5.
Number of Districts with Failing Schools

Number of Failing Schools	Number of Districts
1	21
2	2
3	3
4 or more	4

That only a small fraction of Decile 1 schools fail to make progress masks the true magnitude of the situation. In 2003-2004, the 70 schools enrolled over 90,000 students. Many of whom have been in their school for several years. The debt of failing performance is borne most heavily by these students.

The Majority of Decile 1 Schools Improve

When average API score gains for Decile 1 schools are compared to those of other deciles, as shown in Figure 6, the scores show larger increases each year than any other group. This finding is consistent over all the years of study. Caution is needed to avoid over-interpreting the trend, however, as it blends several different factors: the evolving population of Decile 1 as schools exit and enter the decile, the heavier weight given by the API to progress by the lowest-performing students, possible effects from test measurement error, as well as real improvement. Clearly, a deeper look is needed to tease these effects apart.

Figure 6.
Average API Growth by Decile 1999-2003

	1999 score	1999-2000	2000-2001	2001-2002	2002-2003
Decile 1	416.7(30.7)	39.7(29.9)	42.4(30.6)	45.5(27.5)	48.8(28.0)
Decile 2	479.0(17.3)	38.1(31.0)	34.6(29.1)	30.5(26.6)	40.4(24.7)
Decile 3	524.7(15.5)	39.9(31.7)	26.1(28.0)	23.1(27.3)	36.0(25.2)
Decile 4	567.9(13.1)	39.7(32.0)	20.5(26.8)	14.9(26.5)	30.3(25.9)
Decile 5	607.8(11.5)	37.7(31.0)	16.3(24.0)	6.8(26.8)	27.7(25.3)
Decile 6	647.2(12.4)	32.9(28.2)	12.4(25.4)	1.5(26.0)	23.9(23.8)
Decile 7	687.6(15.4)	30.9(26.5)	9.7(23.1)	-1.9(23.3)	21.7(23.8)
Decile 8	731.5(19.1)	28.9(25.3)	4.9(20.8)	-7.0(22.1)	19.8(21.9)
Decile 9	779.4(23.1)	23.9(22.9)	.9(18.0)	-8.6(20.4)	18.0(19.6)
Decile 10	851.7(37.8)	16.2(16.2)	-4.1(14.4)	-7.5(17.4)	16.7(16.5)
State Total	**629.3(131.9)**	**32.7(28.8)**	**15.9(29.7)**	**9.4(30.0)**	**28.2(25.7)**

Many of these factors can be controlled if Decile 1 schools are divided into cohorts by the first year their score placed them in the lowest decile. By standardizing their progress relative to that designation, it is possible to compare the same groups over time and over equivalent milestones. The average API for the 1999, 2000 and the 2001 cohorts are presented in Figure 7 for the two years after they were declared Decile 1. For all three cohorts, the average growth in API scores was substantial and sustained over the two years. The consistency of the trends suggests real growth.[11]

The analysis revealed an ironic side note about Annual Growth Targets. Because the targets are set based on the difference between previous year score and 800, the targets do not adjust for the general trend of scores, which in recent years has been upwards. This means that some schools can both meet their Annual Growth Targets and slide in the relative ranking of schools. This phenomenon affected significant numbers of schools that started out in Decile 2, met their Annual Growth Targets and still slipped into Decile 1.

Figure 7.
Trajectories – Comparing Growth

	n	%	1999	99-00	00-01	01-02	02-03
1999 COHORT	669		416.7(20.7)	39.7(29.9)	39.1(30.9)		
2000 COHORT	151			4.4(20.0)	47.0(33.1)	38.4(26.1)	
2001 COHORT	150				-1.7(34.8)	47.1(33.1)	48.4(30.5)

The fate of Decile 1 schools was a prime motivation for this study: once they learned their place relative to other schools, did Decile 1 schools progress to higher deciles and leave the 'failing school' designation behind? Decile 1 schools were studied in the two years subsequent to being designated Decile 1 to see if they met their Annual Growth Targets and if they exited Decile 1.

Figure 8 presents the results of our analysis for the schools that became Decile 1 schools in the 1999, 2000 and 2001 cohorts. It is not surprising that the 1999 Cohort had the lowest proportion of its schools exiting Decile 1 after two years. With 668 schools, the cohort is by far the largest and includes those schools that entered the accountability system with the worst performance scores.

Regardless of how badly they started off, significant fractions produced sufficient gains relative to the rest of the distribution to reposition themselves in a higher decile and exit Decile 1. The fractions were even higher for the 2000 and 2001 cohorts. In the later cohorts between a quarter and half the schools exited Decile 1, depending on school type.

The converse situation is also presented in Figure 8—the proportion of schools that fail to make enough progress to meet their Annual Growth Targets and remain Decile 1 schools. The patterns across the cohorts are consistent with their exit trends. The first cohort posts a high fraction of schools that have not produced enough gains to move them forward in the standings or permit them to leave the decile. These schools appear to have the twin problems of

low performance and inability to effectively address the situation. That combination afflicts smaller shares of schools in the second and third cohorts. Across all cohorts, however, a larger share of high schools fails to make their targets and remain Decile 1 schools, compared to elementary and middle schools.

Figure 8.
How Schools Fare in Decile 1, by School Level

		Leave Decile 1	Miss Growth Targets and Remain Decile 1
1999 COHORT			
668 Schools			
	Elem	27	4%
	Middle	20%	14%
	High	26%	26%
2000 COHORT			
151 Schools			
	Elem	48%	3%
	Middle	47%	0%
	High	36%	21%
2001 COHORT			
145 Schools			
	Elem	43%	5%
	Middle	24%	0%
	High	53%	12%
TOTAL			
	Elem	33%	4%
	Middle	24%	10%
	High	32%	23%

An astute reader might question whether the "Leavers" and "Missed Targets" schools differed materially by their initial API scores. In other words, would schools that started out higher in Decile 1 be favored in their ability to make their targets and leave the decile? Decile 1 schools were sub-divided into quartiles, and their progress studied in terms of their propensity to achieve their Annual Growth Targets and their progress towards higher deciles. The results appear in Figure 9. The quartile average starting scores differ by 92 points. The share of schools in each quartile of Decile 1 that leave the decile differs markedly based on starting point. Compared to only 9 percent of the lowest quartile that exit, more than half of the highest quartile leaves the decile after two years. Differences in starting positions also explain why the share of each quartile's schools meeting their growth targets in both subsequent years but remaining in Decile 1 declines steadily from 48 percent for the lowest quartile to 20 percent for the highest. Even with solid progress, the lowest quartile schools have the furthest to move before they exit the decile.

Figure 9
How Initial API Score Impacts Trajectory
Quartile Analysis of Decile 1 Schools

	Initial API Score	Leave Decile 1	Stay Decile 1; meet growth targets **both** years	Stay Decile 1; meet growth targets 1 year	Never make growth targets	Missing
Quartile 1	198	9%	48%	32%	9%	2%
Quartile 2	208	16%	40%	32%	7%	5%
Quartile 3	260	36%	23%	31%	8%	2%
Quartile 4	297	54%	20%	20%	6%	1%

But progress is the predominant pattern across all deciles, as the remaining columns of Figure 9 illustrate. There is an eerily consistent share of schools across the subgroups that never meet their growth targets; luckily the fraction is fairly small. In addition, the proportion of Decile 1 schools in each subgroup that make progress in one of the two subsequent years is consistent for the lowest three subgroups, around a third, and 20 percent for the highest subgroup.

Two related stories emerge from Figure 9. The first story is that starting point does not materially affect whether a school can create positive gains in performance. The corollary is also true—that starting point does not affect a school's likelihood of failure to meet targets. The second story is that starting point does matter in how quickly a school can exit the decile.

Analysis of School Failure

Conventional wisdom suggests that schools fail because they have tougher students or less qualified teachers or higher student mobility. Those relationships can be tested through regression analysis. Regression analysis is a statistical tool that simultaneously examines the independent impact of a number of school characteristics on an outcome of interest. The models included mobility, the percentage of parents with a low level of education, the proportion of the teachers that were fully credentialed, the percentage of the student body that was minority, the proportion of students on free or reduced-price lunch, the percentage of students who were English learners, the school's enrollment and the percentage of students tested. By restricting the analysis to Decile 1 schools, it is possible to focus in on their specific experience.[14]

In this case, the analyses focused on two different outcomes. The first explored whether school characteristics could explain the magnitude of growth over the two years following designation as Decile 1. In the second inquiry, the focus was on whether school attributes could explain which schools failed to meet growth targets for the two years and which did not.[15]

The model results are presented on the CREDO website as an appendix to this paper. Here, we summarize the findings. First, none of the models have very strong explanatory power overall; each can account for about one quarter of the variation in outcomes. Put another way, when all of the factors that are known about a school are taken together, they only explain one quarter of the results that actually occur. This suggests that in general there are a lot of random influences that are not captured by the models that affect schools' results.

Even though the systematic portions of the models were fairly modest, the models allow the contribution of each school characteristic to be isolated from the rest of the school factors. Regression models provide the truest test of the effect of each factor on the outcome being studied.

Explaining Two-Year API Gains The proportion of parents in a school who had low levels of education was positively associated with two-year gains in API; that is, the lower the educational attainment of the parents, the bigger the gain. If this seems counter-intuitive, consider that the starting points for schools with low parental education were on average lower than schools with more educated parents, so their progress would be rewarded more heavily in the API formula.

School size was negatively related to API gains. This means that the larger the school the smaller the gain. This finding is consistent with current thinking about the difficulty of engaging students and teachers toward academic improvement in larger settings.

A positive association with two-year gains and the percent of the students who were tested was found. It is likely that schools that have strong administrative systems and can therefore undertake the necessary steps to assure that most parents and students are aware of the need to be present for testing would also be better equipped to effect the changes necessary to improve their API scores.

In none of the models was the proportion of teachers holding full credentials statistically significant.

In Decile 1 schools, the influence of student characteristics, such as mobility, minority status, eligibility for subsidized meals or being an English learner on academic gains is different than one normally expects. The anticipated trends are based on statewide associations across highly diverse school settings and student populations where mobility, concentration of minority students, English learners and students eligible for meal subsidies are inversely correlated with student achievement. But in Decile 1, a subset of all schools that start out with high degrees of each of the challenge factors, the associations are not as expected. With Decile 1 schools, only the contribution of minority concentrations mirrors the statewide picture: for each percentage point increase in minority populations, the two year gain in API is about a half-point lower. But this factor is more than offset by the positive influences of mobility rates, English learners, and the share of students eligible for lunch subsidies. The net result is that, for Decile 1 schools, the schools that have more disadvantaged student populations achieve greater gains over two years than others. This may be because of lower starting points, or it could be

because they respond more strongly to the incentives of accountability. Additional study is needed to better understand the results.

Explaining Which Schools Fail. The second regression analysis aimed to explain which schools failed to make their Annual Growth Targets for two consecutive years. If the conventional wisdom is accurate, then schools with more disadvantaged students and fewer school resources would have higher probabilities of being a failing school. But the models, based on the 1999 Decile 1 cohort, did not bear out these conjectures.

The failing school models are stronger than the API growth models in their explanatory power, accounting for about 30 percent of the variation across schools. However, of all the factors tested, only three had significant impact on the probability that a school would fail: proportion of students tested, school size and the proportion of English learner students. Schools with lower proportions of students tested had higher chances of failing to meet growth targets for two years; the direction of the association is consistent with the earlier conjecture that stronger administrative systems in schools led to both higher testing proportions and better improvement of scores. Larger schools had higher chances of being a failing school, as expected. But the direction of influence for English Learners was contrary to expectations. The lower the proportion of English learners in a school, the higher its chances of failing to meet growth targets for the two years of study. None of the remaining factors, including teacher credentialing, were significant.

Interpretation of the Regression Models The regression analyses provide few footholds to policy makers seeking to refine policies for greater academic improvements. There are no outstanding school factors to be shored up, nor student factors that if compensated for would translate directly into greater API gains or better chances of meeting growth targets. In general, what we currently measure about schools or students gives us little to go on in our quest to improve schools and the academic achievement of students.

Viewed from a different vantage, however, that same news is exceptionally encouraging. When the focus is on the worst schools in California, none of the popular conceptions that excuse low performance finds any support in the empirical evidence. Schools with low levels of school endowments are just as likely as better-equipped schools to make gains and achieve

growth targets, and may even be slightly more successful. Put another way, nothing condemns a school to failure at the outset.

Conclusions and Further Questions

This study of five years of low-performing schools in California has revealed a number of unexpected results. First, the accountability policies in California appear to be working. The majority of Decile 1 schools made significant academic gains despite not participating in the state-sponsored intervention programs.

In fairly short periods of time, the majority of schools took effective action to alter their performance and begin to move towards higher API territory. They and their districts developed workable strategies and allocated the necessary resources to implement them without dramatic overhaul of their entire school finance system. It would appear, therefore, that reform is possible with the measures designed into the Public School Accountability Act. Clear consistent signals of performance combined with incentives and consequences have created stronger results than either of the two improvement programs the state has adopted.

Second, the most heartening result of this study is that dramatic improvement is possible regardless of the starting point of a school or the assets they possess. The evidence contradicting traditional views about why schools cannot improve are both a relief and a challenge to develop more grounded models of school capacities. The results obtained here are a useful beginning in pointing up new areas for exploration. We need to figure out the choices that helped schools make progress. More sophisticated measures of school operations may be needed in order to accurately assess those factors that are related to successful outcomes. Additional work by policy analysts and planners could profitably be engaged in this pursuit.

Finally, while the proportion of all Decile 1 schools that chronically underperform is small, it is still the case that 70 schools failed to demonstrate reasonable progress in their academic achievement over a three-year period. The education of over 90,000 students has been neglected, with more students affected each year that aggressive measures are not taken. This is a problem of dramatic proportions. With each additional year of low performance, greater numbers of students lose ground in their education. Allowing schools additional time to

improve must be weighed against the damage to these children and to their communities. The current policy approach is to deem these schools as state monitored. Subject to approval by the State Board of Education, the State Superintendent of Instruction must take action, which can include external reviews of school operations by School Assistance and Intervention Teams (SAIT) over another two year period.

It may be too soon to ascertain if these efforts are sufficient to turn the schools around. Despite best hope, it is almost a certainty that some of the schools will not be affected by these efforts. Rather than wait until the evidence reveals which schools did not improve, the state would be better served if planning for that eventuality began now. Districts with one or more chronically failing school should develop plans immediately to provide remedial services to students caught in these schools and provide them access to other more successful school settings.

Endnotes

[1] http://nces.ed.gov/programs/coe/2004/section2/table.asp?tableID=45

[2] Public School Accountability Act of 1998. The API is a composite scale of test results used to measure academic performance and growth of schools, with scores ranging from 200 to 1000. For a school with a Base API score below 800, the annual growth target is 5% of the difference between 800 and its Base score. Schools with a base of 800 or above must maintain their score at 800 or above.

[3] The High Priority Schools Grant Program, California Education Code Section 52055.600-52055.660.

[4] Jennifer O'Day and C. Bitter. "Evaluation Study of the Immediate Intervention/Underperforming Schools Program and the High School Achieving/Improving Schools Program of the Public Schools Accountability Act of 1999". American Institutes of Research, Policy Analysis for California and EdSource, April, 2003. Also Betts study on selection and performance through PPIC. Also, Betts, Julian and Anne Dannenberg. "The Effects of Accountability in California." In Paul E. Peterson and Martin R. West, eds. No Child Left Behind? *The Politics and Practice of Accountability*, Washington, D.C.: Brookings Institution, 2004.

[5] Eric A. Hanushek and Margaret E. Raymond. "The Effect of School Accountability Systems on the Level and Distribution of Student Achievement", *Journal of the European Economic Association*, 2(2-3), April-May 2004, pp. 406-415.

[6] These numbers update figures presented in the Ed Source Report "California's Lowest-Performing Schools," published in February 2003. Their report focused on Decile 1 and Decile 2 schools, while this study includes only Decile 1 schools.

[7] Part of the progress may be explained by the structure of the API, which rewards growth from the bottom of the performance distribution more heavily than growth from the middle upward. Additionally, since the standardized achievement tests on which the API scores are based are subject to a degree of measurement error, it is possible that some of the lowest performing schools were initially adversely affected by measurement error, in essence drawing worse scores than they actually deserved. Those same schools are likely not to have a bad run-in with measurement error two years in a row, so the score they achieve in the second year would appear to be improvement even if there was no real gain in fact. Since this phenomenon bears out at both ends of the spectrum (despite the preferential weighting of the API), it appears that some regression to the mean is occurring independent of the general rise in scores.

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[9] "Why Public Schools Lose Teachers", by Eric A. Hanushek, John F. Kain, and Steven G. Rivkin, *Journal of Human Resources*, 39(2), Spring 2004, pp. 326-354.

[10] The criteria for Adequate Yearly Progress can be found on the California Department of Education website at http://www.cde.ca.gov/ta/ac/ay/expnotes03p1.asp

[11] If statistical regression to the mean were operating, one would expect larger variances around the average scores in the first year (suggesting that students in a school got a bad draw on test measurement error) and smaller variances in subsequent years. However, the data generally do not support this.

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[13] The fact that Decile 10 schools on average also have strong positive gains further suggests that regression to the mean is not a crippling problem in these analyses.

[14] This approach parallels the one used by AIR in their study, and eliminates the problem of small numbers relative to the entire population. Models developed for all schools in the state explain the larger trends in performance, but swamp the more narrow questions posed here.

[15] The analysis was conducted on the 1999 cohort because of its large number of observations.

APPENDIX A

List of Failing Schools in California

County	District	School Name	2004 Enrollment
Alameda	Oakland Unified	Calvin Simmons Middle	907
	Oakland Unified	Fr Fremont Senior High	301
	Oakland Unified	Golden Gate Elementary	217
	Oakland Unified	Highland Elementary	641
	Oakland Unified	Jefferson Elementary	860
	Oakland Unified	Lowell Middle	540
	Oakland Unified	McClymonds Senior High	745
	Oakland Unified	Oakland Charter Academy	167
Fresno	Coalinga-Huron Joint Unified	Huron Middle	359
	Fresno Unified	McLane High	2470
	Fresno Unified	Roosevelt High	2854
	Fresno Unified	School of Unlimited Learning	182
	Fresno Unified	Sequoia Middle	1034
	Fresno Unified	Terronez Middle	1105
	Fresno Unified	Yosemite Middle	864
	Parlier Unified	Parlier High	834
Imperial	Calexico Unified	Blanche Charles Elementary	918
	Calexico Unified	Kennedy Garden Elementary	748
	San Pasqual Valley Unified	San Pasqual Valley High	196
Los Angeles	Compton Unified	Centennial High	1307
	Long Beach Unified	Jaun Cabrillo High	3100
	Long Beach Unified	Jordan High	4340
	Long Beach Unified	Pacific Learning Center	181
	Los Angeles Unified	Alain Leroy Locke Senior High	3088
	Los Angeles Unified	Crenshaw Senior High	2995
	Los Angeles Unified	Edwin Markham Middle	2059
	Los Angeles Unified	G. W. Carver Middle	2836
	Los Angeles Unified	George Washington Preparatory	2956
	Los Angeles Unified	Jordan (David Starr) Senior High	2641
	Los Angeles Unified	Los Angeles Academy	3090
	Los Angeles Unified	Main Street Elementary	1569
	Los Angeles Unified	Manual Arts Senior High	4093
	Los Angeles Unified	Mt. Vernon Middle	1857
	Los Angeles Unified	Olive Vista Middle	2041

County	District	School Name	2004 Enrollment
Los Angeles *(continued)*	Los Angeles Unified	Park Avenue	1055
	Los Angeles Unified	Robert Fulton Middle	2431
	Los Angeles Unified	Roosevelt Senior High	4940
	Los Angeles Unified	Susan Miller Dorsey Senior High	2137
	Los Angeles Unified	Thomas Jefferson Senior High	3869
	Los Angeles Unified	Woodlawn Avenue	1286
	Pomona Unified	Garey Senior High	2358
	Pomona Unified	Roosevelt Elementary	1113
Mendocino	Round Valley Unified	Round Valley Elementary	266
Napa	Napa Valley Unified	Napa Valley Language Academy	555
Riverside	Coachella Valley Unified	Saul Martinez Elementary	742
Sacramento	Rio Linda Union Elementary	Aero Haven Elementary	464
	Sacramento City Unified	Maple Elementary	261
San Bernardino	Adelanto Elementary	Westside Park Elementary	613
	San Bernardino City Unified	Arrowview Middle	2261
	San Bernardino City Unified	Lytle Creek Elementary	835
	San Bernardino City Unified	Riley Elementary	984
San Diego	San Diego Unified	Baker Elementary	549
	San Diego Unified	Balboa Elementary Year Round	817
	San Diego Unified	Emerson/Bandini Elementary	1017
	San Diego Unified	Lincoln Senior High	2511
	San Diego Unified	Sherman Elementary	690
	Valley Center-Pauma Unified	Oak Glen High	57
San Francisco	San Francisco Unified	Gloria R. Davis Middle	191
	San Francisco Unified	J. Eugene McAteer High	*Closed in 2003*
	San Francisco Unified	Mission High	889
San Joaquin	Lodi Unified	Turner Elementary	79
San Mateo	Redwood City Elementary	Fair Oaks Elementary	517
Santa Barbara	Casmalia Elementary	Winifred Wollam Elementary	30
Santa Cruz	Pajaro Valley Unified School	Watsonville High	3081
Tulare	Alpaugh Unified	Alpaugh Elementary	150
	Cutler-Orosi Joint Unified	El Monte Elementary	596
	Visalia Unified	Charter Alternatives Academy	86
Ventura	Hueneme Elementary	Art Haycox Elementary	807
	Oxnard Elementary	Ramona Elementary	668
Yolo	Woodland Joint Unified	Grafton Elementary	151
		Total	93151