The effects of investing in failing schools: evidence from Los Angeles Unified School District[*]

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Abstract

Can investing in failing schools help them improve? This paper studies this question using a natural experiment based on a 2017 lawsuit settlement that allocated substantial resources to the lowest-performing schools in the Los Angeles Unified School District (LAUSD). Using a difference-in-differences design, I compare 50 secondary schools that received approximately $1,000 per student annually for three years to public, non-charter, nearby schools that did not receive the funding. The intervention mandated hiring additional staff members and allocating funds to professional development, with discretionary spending on high-need student initiatives. In line with the intent of the settlement, I find that schools successfully implemented the required staffing changes, increasing instructional staff such as teachers, counselors, and administrative staff, while also expanding support personnel, including paraprofessionals and school service personnel. In terms of performance outcomes, I find that settlement schools experienced substantial reductions in suspension rates relative to district schools not funded. These reductions are particularly notable given that the settlement triggered demographic sorting, with treated schools losing students overall and shifting toward higher concentrations of economically disadvantaged students alongside lower Black enrollment. A simple bounding exercise that accounts for demographic sorting indicates that the settlement had meaningful effects on school climate, suggesting to real improvements in the non-cognitive dimensions of schooling. Moreover, survey evidence from students and teachers suggests a key mechanism: while students report improved school climate but no reduction in bullying experiences, teachers report improvements across multiple dimensions, including reduced bullying incidents, more effective bullying interventions, fairer and more effective discipline practices, and enhanced overall school climate.

1   Introduction

School spending in the United States represents a massive public investment, with K-12 public schools spending annually \$918.5 billion nationwide.[1] Despite massive expenditures, schools have experienced long-term enrollment declines of 10% or more.[2] Moreover, chronically low-performing schools are more than twice likely to experience big enrollment declines (Goulas, 2024). There has been an extended public debate on what to do with low-performing schools, with closing them being one option. Between 2000 and 2022, districts closed around 1,450 schools nationwide each year on average.[3] Supporters of closure argue that chronically under-performing schools cannot be fixed and that shuttering them redirects scarce resources toward more effective alternatives while giving families better options. In contrast, advocates for investment contend that these schools fail because they have been systematically under-resourced, and that substantial, sustained funding can turn them around. While recent research demonstrates that increased school spending improves student outcomes on average (Jackson and Mackevicius, 2024), this evidence derives mainly from studies of general finance reforms or district-level policies rather than focused interventions in failing schools, making it unclear whether these positive effects extend to the most under-performing institutions.

This paper addresses this gap by examining how investment affects the lowest-performing schools. I study a natural experiment from a 2017 lawsuit settlement in LAUSD that delivered substantial resources to the district's most struggling schools. Fifty secondary schools that officials identified as the lowest-performing received approximately \$1,000 per student annually for over three years, representing roughly 40% of their existing budgets on average. This setting provides a rare opportunity with several advantages to study whether large increases in investing in failing schools can improve them, directly informing a key policy debate. First, it targets investment at failing schools rather than general school populations; second, it generates substantial school-specific funding variation where the selection of recipient schools was determined by legal settlement terms rather than district educational policy decisions; and third the money was for critical needs and high need students. In low performing schools this means addressing particular challenges like high suspension rates, poor school climate, and low-performance on standardized test scores.

Using a difference-in-differences design, I compare outcomes between fifty high-need secondary schools that received approximately \$1,000 per student annually for three years and nearby public,

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[1]U.S. Census Bureau, Public Education Finances: 2023, available online.

[2]Fordham Institute, "The Case for Closing Underenrolled, Low-Performing Schools," available online.

[3]National Center for Education Statistics, Fast Facts: School Closures, available available online.

non-charter secondary schools that did not. My analysis relies on two key assumptions to provide credible causal estimates. First, I assume that treated and control schools would have followed similar trajectories absent the intervention, the parallel trends assumption central to difference-in-differences estimation. I test this by examining pre-treatment trends in key outcomes and find no evidence of divergent trajectories between treated and control schools before the intervention. Second, I verify that schools actually spent the funding as intended by examining whether treated schools hired additional staff as the settlement required.

I examine multiple outcomes using administrative data from the California Department of Education and LAUSD, including student achievement in English and Mathematics, suspension rates, staffing levels, enrollment, and demographics. Crucially, to explore potential mechanisms, I take advantage rich school experience survey data, rarely available at this scale, that captures detailed perceptions of school climate from both students and staff. This comprehensive combination of administrative and survey data allows me to assess not only the direct effects of the intervention but also the underlying mechanisms driving observed changes.

The settlement required treated schools to improve or provide more services for high-need students, hire additional staff to improve school climate, and invest in teacher professional development. My results show that schools successfully implemented required changes, by increasing certified staff, like teachers, by around 3 per 1,000 students and support staff, like office staff, by almost 2 per 1,000 students, representing approximately 5% increases over baseline levels. These resource increases translated into substantial improvements in disciplinary climate. Schools improved their disciplinary climate, reducing suspension rates by 0.75 percentage points, a substantial 44% reduction from pre-treatment levels. This effect was more than double the magnitude of common school climate interventions, such as restorative justice (Adukia et al., 2025). While disciplinary improvements were substantial, academic outcomes showed more limited progress. Test score improvements were modest and statistically insignificant, though this likely understates actual academic progress given concurrent demographic changes.

A key empirical question is whether the settlement also affected enrollment and student composition, with theoretically ambiguous predictions. Additional resources might attract students seeking improved opportunities, while litigation stigma could signal poor performance and deter enrollment. In practice, treated schools lost 48 students on average (5.7% decline from baseline), experienced a 0.9 percentage point decrease in Black enrollment (6.2% decline), and saw free lunch eligibility increase by 3.6 percentage points (4.2% increase). These patterns suggest that families

with greater school choice options left treated schools, concentrating economic disadvantage.

These shifts in student composition raise questions about the interpretation of my main findings, particularly the reduction in suspension rates. If higher-risk students left treated schools, the drop in suspensions might reflect student turnover rather than better school practices. To address this concern, I implement a bounding exercise following Horowitz and Manski (2000) that assesses how sensitive my estimates are to different assumptions about the characteristics of students who left. I consider various scenarios regarding the suspension propensity of students who left, and across all reasonable bounding assumptions, I find that the sign and magnitude of the results remain substantively unchanged, with one scenario being statistically significant. This suggests that the observed improvements in disciplinary climate reflect genuine changes in school practices rather than simply a mechanical result of altered student composition.

To understand whether the observed reduction in suspension rates reflects behavioral improvements, shifts in educator responses, or changes in administrative practices, I examine rich school experience survey data from students and staff. My findings suggests that while students did not report significant changes in their direct experiences with bullying, they did perceive meaningful improvements in overall school climate (a 43% improvement from baseline, statistically significant at 5% level). More strikingly, teachers and staff reported substantial improvements across multiple dimensions of their work environment. They indicated that bullying incidents had become a less significant problem, that they address behavioral issues when they arose, and that they had received professional development on bullying. Additionally, staff reported greater agreement that disciplinary practices at their schools were both fair and effective, alongside notable improvements in their perceptions of overall school climate. These improvements were large in magnitudeâranging from 53% to 108% relative to baselineâand statistically significant at the 1% level. These patterns point toward a story where the intervention primarily operated through enhancing educators' capacity and approaches to discipline, rather than through direct changes in student behavior.

This research contributes to several strands of literature. First, it contributes to the school finance literature by addressing whether increased spending can improve the lowest-performing schools. While extensive research demonstrates that more school investments improves student outcomes, including test scores, graduation rates, college attendance, and adult earnings, with particularly strong effects for low-income students (Abott et al., 2020, Baron, 2022, Candelaria and Shores, 2019, Hyman, 2017, Jackson and Mackevicius, 2024, Jackson et al., 2016, Lafortune et al., 2018), these studies rarely examine failing schools directly. Most of them focus on broad expendi-

ture increases from school finance reforms or close elections that affect diverse school populations, not those that are failing. This distinction matters because low performing schools may respond differently to additional resources than average schools due to more severe baseline challenges, different organizational capacity, or distinct intervention needs. Moreover, spending effectiveness varies considerably by resource allocation, with researchers finding larger effects for operational spending on personnel than for capital expenditures (Abott et al., 2020, Baron, 2022, Biasi, 2024), suggesting that the specific nature of the investment and institutional context are crucial. My contribution is to provide direct evidence on whether targeted investment can improve outcomes specifically in failing schools, examining both student achievement and the mechanisms through which resources operate in these challenging contexts. This analysis is essential because demonstrating that "money matters" in general may not suffice to conclude that investment can help the schools that need it most.

The most direct evidence on improving failing schools comes from research on School Improvement Grants (SIG), which required chronically underperforming schools to implement federally prescribed turnaround models involving dramatic changes like replacing principals and at least 50% of staff. While recent meta-analytic evidence finds these interventions generated moderate positive gains in math achievement (Schueler et al., 2022), they differed fundamentally from resource-based investment by being highly prescriptive and disruptive. In contrast, I study a resource-based approach that preserves school autonomy, the Los Angeles settlement provided substantial funding while allowing schools considerable discretion in addressing their challenges. This distinction is important because local actors may better understand their specific problems and have greater buy-in for solutions they help design. My analysis addresses a critical gap by testing whether this gentler, resource-focused approach can achieve improvements without the disruption of mandated turnaround models.

Finally, this paper also contributes to the school accountability literature by examining whether investment based approaches ("carrot") can effectively improve low-performing schools, contrasting with the punishment-based mechanisms ("stick") that have dominated accountability policy. While extensive research documents how accountability pressure generates positive responses and problematic unintended consequences, including teaching to the test, strategic student exclusion, and gaming behaviors (Booher-Jennings, 2005, Cullen and Reback, 2006, Dee and Jacob, 2011, Figlio, 2006, Figlio and Rouse, 2006, Figlio and Getzler, 2006, Jacob, 2005, Jacob and Levitt, 2003, Neal and Schanzenbach, 2010, Reback, 2008, Reback et al., 2014), less is known about whether

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positive incentives can achieve improvements without these negative side effects. The Los Angeles settlement provides substantial resources to help schools improve rather than threatening sanctions, offering insights into whether "carrots" can succeed where "sticks" have shown mixed results.

This study contributes to the literature in several important ways that collectively advance our understanding of how to improve failing schools. First, it provides causal evidence on the effects of investment specifically in failing schools, bridging a critical gap between general school finance research and the policy question of whether targeted funding can help the lowest-performing institutions. Second, it demonstrates that resource-based approaches with school autonomy can improve disciplinary climate substantially even when academic gains are modest, suggesting that non-test outcomes may be important early indicators of school improvement. Finally, using rich survey data from both students and staff, it identifies that improvements operated primarily through enhanced educator capacity rather than direct student behavior changes, providing insights into the mechanisms through which investment affects school environments.

2   LAUSD Settlement: Community Coalition v. LAUSD

In July 2015, the Community Coalition of South Los Angeles and Reyna Frias filed a lawsuit against LAUSD, alleging the district had misspent approximately $2 billion in funds designated for high-need students. The lawsuit centered on California's Local Control Funding Formula (LCFF), enacted in 2013, which provides additional funding to districts serving large populations of low-income students, English Language Learners (ELLs), and foster youth. Under LCFF, funding is tied to the number of duplicated students, those who fall into one or more support categories (low-income, English learner, and/or foster youth).

The plaintiffs accused LAUSD of violating state funding requirements by improperly counting prior special education spending as expenditures for high-need students, thereby depriving these populations of resources intended for their educational support. LAUSD settled the lawsuit in July 2017 and finalized the agreement in September 2017 (see a detailed timeline in Figure 1). The district agreed to reallocate $171.6 million over three years (2017-18 through 2019-20) specifically for high-need student services, called the "School Innovation funds."

School Selection. The settlement identified 50 secondary low-performing schools (20 middle schools and 30 high schools) as the highest-priority recipients based on objective criteria, including unduplicated student percentage, math scores, suspension rates, foster youth rates, and homeless

student rates.

Funding Allocation. The 50 identified schools received funding allocated proportionally based on their "duplicated count" of high-need students, with a per-pupil rate of approximately $1,030 per duplicated student per year, roughly a 40% budget increase on average.

Implementation Requirements. The settlement established two mandatory requirements while preserving considerable school autonomy. First, schools had to implement tiered student support teams (Achievement through Support Teams) with more comprehensive services for larger schools, including restorative justice advisors, counselors, and psychiatric social workers. Second, schools had to allocate at least 10% of remaining funds to foundational professional development in mathematics or English Language Arts. Beyond these requirements, schools had discretion in spending within six broad categories focused on high-need student services (see Appendix A for detailed implementation requirements).

3 Data

My analysis draws on administrative data from the California Department of Education and LAUSD combined with information from the lawsuit settlement agreement.

3.1 Analysis sample

The sample includes schools that were operational in LAUSD in the academic year 2016/17, excluding charter schools. I impose the following restrictions to improve comparability between treatment and control schools: I exclude continuation and special education schools, retain only secondary schools in the same local districts than treated schools, and restrict the sample to schools that remained operational throughout 2014/15 to 2019/20. The end date avoids potential confounding from the COVID-19 pandemic, while the start date ensures all schools have pre-treatment data, as two beneficiary schools opened in August 2014. This yields a final sample of 170 schools (121 control, 49 treatment) observed over 6 academic years (2014/15 to 2019/20).[4]

3.2 Outcome data

I examine different outcomes to assess the implementation and the effects of the settlement. First, I analyze expenditure outcomes to understand how schools used the additional funds. Second, I

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[4]The settlement listed 50 schools and I have 49 in my analysis sample, this is because one school merged to another one after the settlement.

examine student outcomes, focusing on disciplinary, and academic measures. Third, I use student and staff answers to a school experience survey. All the data comes from the California Department of Education and LAUSD.

3.2.1 Expenditure outcomes

For expenditure outcomes, I examine two categories of staff data that capture different types of school employees.[5]

Certified employees. They are school staff required to hold valid teaching credentials or permits, including: (1) teachers who provide direct instruction, (2) administrative personnel in positions requiring certification but not providing direct instruction, and (3) pupil services staff such as counselors, librarians, and psychologists who hold specialized credentials. This data is available until academic year 2017/18.

Classified staff. They are employees in positions not requiring certification, including: (1) paraprofessionals who provide instructional support under teacher supervision (teaching assistants, aides, translators), (2) office/clerical staff supporting administration and business services, and (3) other support staff including health services, maintenance, food service, security, and transportation personnel.

3.2.2 Student outcomes

Given that the settlement mandated significant investments in high-need students, including academic support and mental health services, as well as school climate initiatives like restorative justice, I focus on outcome measures that directly reflect these intervention areas.

Suspensions. I measure suspension rates as the unduplicated count of students suspended divided by cumulative enrollment at the school level.

Test scores. Ideally, I would analyze raw test scores, but the California Department of Education only provides publicly available data in categorical performance levels: Percentage Standard Exceeded, Percentage Standard Met, Percentage Standard Met and Above, Percentage Standard Nearly Met, and Percentage Standard Not Met. I therefore focus on the percentage of students who met or nearly met standards as my measure of academic achievement. I use data from 2015/16 to 2018/19.

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[5]Complete school-level budget data for 2019 and 2020 were not publicly accessible. After multiple unsuccessful requests to the district, I focus on staffing data as the most reliable indicator of resource allocation changes.

3.2.3 School experince survey outcomes

To measure experiences and perceptions on school climate, I use data from the Los Angeles Unified School District's School Experience Survey (SES), an annual survey that captures comprehensive feedback from teachers, staff, students, and parents across all LAUSD schools. I examine survey responses for 2014/15 through 2019/20 academic years.

For students, I focus on measures of bullying experiences and overall school climate perceptions. The survey has high response rates, spanning 80% across years in my analysis sample. The bullying indicators assess four key forms of peer victimization occurring on school property: physical aggression (being pushed, shoved, slapped, hit, or kicked), relational aggression (having mean rumors or lies spread), sexual harassment (experiencing sexual jokes, comments, or gestures), and appearance-based teasing. The school climate measures capture students' perceptions across six dimensions of their school environment, including adult respect and help, feelings of safety and belonging, and overall satisfaction with their school experience.

The staff questionnaire captures responses from principals, other administrators (such as assistant principals), teachers, school administrative assistants, counselors, and other members of the school staff, providing comprehensive insights into educators' and staff members' experiences and perceptions of school climate, capturing their preparedness to address climate issues and their assessments of the school environment. The survey has a high response rates of 82% across years in my analysis sample. The survey measures several key dimensions of school climate, including professional development preparedness (specifically regarding anti-bullying training), engagement in addressing bullying incidents, and personal safety perceptions during school hours. Staff members also evaluate the school's disciplinary climate through their perceptions of adult respect toward students, and the fairness and effectiveness of the school's discipline. Additionally, staff assess the prevalence and severity of various climate challenges within their schools, including harassment and bullying among students, physical fighting, general disruptive behavior, racial or ethnic conflicts, and student respect toward staff members.

To analyze these multidimensional survey outcomes systematically, I construct summary indices following the methodology outlined in Anderson (2008). This approach creates weighted averages of related standardized outcomes, with weights calculated to maximize the information captured in each index. For example, the student bullying index combines responses across the four victimization categories (physical aggression, relational aggression, sexual harassment, and

appearance-based teasing), taking the proportion of students reporting each type of incident as "not a problem" and creating a summary measure using the Anderson procedure. Similarly, I construct indices for school climate, staff preparedness to handle bullying, perceptions of disciplinary effectiveness, and overall staff assessments of school climate. This indexing approach addresses multiple testing concerns while providing clear, interpretable measures of treatment effects across conceptually related outcomes.

3.3 Summary statistics

Table 1 compares pre-treatment characteristics between lawsuit beneficiary schools and similar LAUSD secondary schools in 2016/17. Beneficiary schools served more disadvantaged student populations and had significantly worse baseline performance across multiple dimensions: higher suspension rates, lower achievement on state standardized tests in Math and English Language Arts, and poorer school climate as measured by student and staff survey indices.

4 Empirical Framework

4.1 Estimation Strategy

My empirical approach uses a difference-in-differences design to estimate the causal effect of the funding intervention on school outcomes. The baseline specification is:

$$Y_{it} = \alpha_i + \lambda_t + \delta \cdot (\text{Lawsuit}_i \times \text{Post}_t) + \varepsilon_{it} \tag{1}$$

where Y_{it} is the outcome variable, e.g., suspension rate, for school i in year t, α_i are school fixed effects, λ_t are year fixed effects, Lawsuit_i is an indicator equal to 1 for schools that benefited from the lawsuit, Post_t is an indicator equal to 1 for years 2018 and after (post-settlement), $\text{Lawsuit}_i \times \text{Post}_t$ is the interaction term capturing the treatment effect, δ is the difference-in-differences estimator, and ε_{it} is the error term. For statistical inference, I cluster standard errors at the school level. This clustering approach is robust to arbitrary forms of correlation in the error terms within schools while maintaining the assumption that errors are independent across schools. The school-level clustering is appropriate given that the "treatment assignment" occurs at the school level and schools represent the primary unit of analysis.

The school fixed effects (α_i) control for time-invariant unobserved differences between treated

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and control schools. The parameter of primary interest is δ, which measures the average treatment effect of lawsuit settlement funding on school outcomes in the post-settlement period.

4.2 Identification Strategy

The validity of this difference-in-differences approach relies on the parallel trends assumption. In this case, it means that in the absence of the lawsuit, schools that benefited from it would have followed similar outcome trajectories compared to the schools that did not benefit from the lawsuit. To provide evidence that this assumption holds, I use an event study specification that estimates:

$$Y_{it} = \alpha_i + \lambda_t + \sum_{k=-3}^{2} \delta_k \cdot (\text{Lawsuit}_i \times \mathbf{1}_{t=2018+k}) + \varepsilon_{it} \qquad (2)$$

where Y_{it} is the outcome variable, e.g., suspension rate, for school i in year t, α_i are school fixed effects, λ_t are year fixed effects, Lawsuit_i is an indicator equal to 1 for schools that benefited from the lawsuit, $\mathbf{1}_{t=2018+k}$ are indicators for years relative to the 2017/18 settlement (where $k = -1$ is academic year 206/17 and omitted as reference), δ_k are the treatment effect coefficients for each year relative to settlement, and ε_{it} is the error term, clustered at the school level.

The event study specification allows me to provide support for the the parallel trends assumption by examining whether treated and control schools exhibited differential pre-treatment trends. Evidence of parallel pre-treatment trends would support the counterfactual assumption that treated schools would have evolved similarly to control schools in the absence of the intervention. The pre-treatment coefficients (δ_{-3} and δ_{-2}) test whether treated and control schools followed parallel trends before the intervention. These should be statistically insignificant, indicating that treated and control schools followed similar trajectories before the intervention.

5 Results

5.1 Effects on school spending

Following the lawsuit settlement, beneficiary schools received substantial funding. While certain expenditure categories were mandated by the settlement terms, schools retained considerable discretion over the allocation of remaining funds.

Table 2 presents the difference-in-differences estimates examining how lawsuit settlement funding affected school spending decisions. The results in Table 2 provide strong evidence that lawsuit

settlement schools used their additional funding to expand staffing capacity, confirming that the financial intervention translated into tangible resource improvements. Treated schools increased their certified staff by around 3 per 1,000 students relative to control schools, an effect that is statistically significant at the 1% level and represents a 4.9% increase relative to the baseline level of 63 certified staff per 1,000 students in treated schools. This substantial increase encompasses teachers providing direct instruction, administrative personnel in certified positions, and specialized pupil services staff such as counselors and psychologists, all critical components of school capacity that require specialized credentials. Additionally, treated schools expanded their classified staff by almost 2 per 1,000 students, significant at the 10% level, corresponding to a 4.8% increase from the baseline of 37 classified staff per 1,000 students. This category includes paraprofessionals, clerical staff, and other support personnel who do not require certification but provide essential operational and instructional assistance. The event study results presented in Panel (a) and (b) in Figure 2 confirm that treated and control schools followed similar pre-treatment trends for both staffing outcomes, supporting the parallel trends assumption underlying the difference-in-differences design. In summary, schools that received settlement funds meaningfully expanded their human capital resources rather than using the money for other purposes.

5.2 Effects on student outcomes and enrollment

Table 3 presents the estimated effects of lawsuit settlement funding on key measures of school climate and academic achievement, and figures 3 and 4 present event study analyses. Beginning with school climate, treated schools experienced a significant reduction in suspension rates of 0.75 percentage points, representing a 44% decrease relative to the baseline suspension rate of 1.7% in treated schools.

Turning to academic achievement, the results show mixed evidence of improvement in student performance on state assessments. In mathematics, treated schools increased the percentage of students who nearly met or met standards by 1.5 percentage points, though this effect is not statistically significant. In English Language Arts (ELA), treated schools achieved a statistically significant increase of 2.8 percentage points in the percentage of students meeting standards, significant at the 1% level and corresponding to a substantial 12.8% improvement from the baseline of 21.9%.

It is possible that the lawsuit settlement and money that schools received affected enrollment and the student body composition, though the direction of the effect is theoretically ambiguous.

The settlement may have generated two opposing forces: on one hand, additional resources and potentially improved school quality could attract new students to treated schools, while on the other hand, the fact that a school was identified as needing remedial funding through litigation could signal poor performance and deter enrollment.[6] Moreover, it is unclear which type of students may decide to move, if any.

If treated schools are perceived as improving due to additional resources, they could attract students of varying academic abilities, for example, high-achieving students seeking better opportunities, average students drawn to enhanced programs, or struggling students hoping for additional support. Each scenario would have a different effect: more high-achieving students would make outcomes like test scores and suspension rates appear better, while an influx of struggling students could make these same outcomes appear worse than the true treatment effect. Conversely, if the litigation stigma causes treated schools to be perceived as low-quality, high-achieving students might exit to other schools, leaving behind a more disadvantaged student body.

I examine whether the lawsuit settlement affected student enrollment patterns and demographic composition across treated and control schools. Table 4 presents the estimated effects on enrollment and student demographics, and figures 5, 6 and 7 the event study results. The results reveal changes in the size and composition of student bodies at treated schools. On average, treated schools experienced a decline of 48 students (approximately 5.7% from their baseline levels), suggesting that the intervention led to net outflows rather than increased enrollment. In terms of student body composition, treated schools experienced a 0.9 percentage point decrease in Black student enrollment and a 3.6 percentage point increase in students eligible for free lunch, indicating a concentration of economic disadvantage. Additionally, the share of students from other racial categories increased by 0.5 percentage points, a small change given these groups represent less than 2% of enrollment each. Hispanic, White, and Asian enrollment shares remained statistically unchanged. These patterns suggest that families with greater school choice options, likely those with more resources and flexibility, left treated schools following the settlement, while more economically disadvantaged families remained or were drawn to these schools.

These shifts in student composition could affect the interpretation of my main findings. If families who left treated schools included those with higher-suspension-risk students, the observed decline in disciplinary incidents might partly reflect changes in the student body rather than im-

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[6]The settlement received substantial news coverage. See, for example: Article 1; Article 2; Article 3; Article 4; Article 5.

provements in school practices alone. To address this concern, I implement a bounding exercise following Horowitz and Manski (2000) that assesses how sensitive my estimates are to different assumptions about the characteristics of students who left.

The bounding approach acknowledges that I cannot observe the counterfactual suspension outcomes for students who exited treated schools, creating a missing data problem that could bias my treatment effect estimates. To establish bounds around the true treatment effect, I consider three scenarios that span the range of plausible assumptions about departing students' suspension propensity.

In Scenario 1, I assume that well-behaved students left, that is, students who would not have been suspended under any circumstance. This represents the most optimistic assumption about student departure and would suggest that my estimated treatment effects understate the true policy impact, as the remaining student body would be more challenging to discipline. In Scenario 2, I assume that departing students had elevated suspension rates reflecting twice their baseline rate by race, with Hispanic students having a 2.19% suspension rate ($2 \times 1.10\%$) and Black students having a 9.34% suspension rate ($2 \times 4.67\%$). Under this assumption, approximately 3 of the 48 students who departed would have been suspended (1 Hispanic and 2 Black students). In Scenario 3, I consider the most conservative assumption that high-suspension-risk students left, that is, a group with a suspension rate five times the overall baseline ($5 \times 1.7\% = 8.5\%$), meaning approximately 4 of the 48 departing students would have been suspended.

For each scenario, I impute counterfactual suspension outcomes for the students who would have remained under the control condition, reconstructing what the treated schools' suspension rates would have looked like with their original student composition. I then recompute the treatment effects using these adjusted denominators and suspension counts. This exercise provides bounds on the true treatment effect under different assumptions about selection into departure.

The results have the same sign and similar magnitude across all scenarios (see Table 5). The original estimate shows a 0.75 percentage point reduction in suspension rates (significant at the 5% level). Under Scenario 1, where well-behaved students departed, the treatment effect increases to -0.82 percentage points (significant at the 1% level), suggesting even stronger policy impacts than initially estimated. Under Scenario 2, with moderately elevated departure rates among certain racial groups, the treatment effect remains substantial at -0.42 percentage points, though not statistically significant. Even under the most conservative Scenario 3, where the highest-risk students departed, the estimated reduction remains at -0.29 percentage points (not statistically significant).

Across all reasonable bounding assumptions, the direction of my main results do not change, and the magnitude remains similar. Even under the most conservative assumption that departing students would have had suspension rates substantially higher than the baseline average, the estimated reduction in suspension rates represents meaningful improvements in disciplinary climate (16.88% relative to treated schools baseline). This robustness suggests that the observed improvements reflect genuine changes in school practices rather than a mechanical result of altered student composition.

6   How are suspensions getting better?

The reduction in suspension rates following the funding intervention calls into question the underlying mechanisms driving this change. While the settlement aimed to improve school environments, the observed decrease in suspensions could reflect several pathways: genuine improvements in student behavior, shifts in how educators respond to disciplinary incidents, or changes in administrative practices around suspension decisions. Understanding these mechanisms is crucial for interpreting the policy's effectiveness and informing future interventions.

To disentangle these competing explanations, I leverage comprehensive survey data from both students and school staff collected through the LAUSD's School Experience Survey (SES). This annual survey captures feedback from teachers, staff, students, and parents across all LAUSD schools and provides detailed measures of school climate, bullying experiences, and disciplinary practices. The student survey assesses experiences with four key forms of peer victimization on school property (physical aggression, relational aggression, sexual harassment, and appearance-based teasing), alongside six dimensions of school climate including perceptions of adult respect, safety, belonging, and overall satisfaction.

The staff component of the survey provides equally comprehensive insights, capturing responses from principals, administrators, teachers, counselors, and support staff. The staff questionnaire measures preparedness to address climate issues through professional development indicators, engagement in addressing bullying incidents, personal safety perceptions, and assessments of disciplinary fairness and effectiveness. Staff also evaluate the prevalence of various climate challenges including harassment, bullying, physical fighting, disruptive behavior, racial conflicts, and student respect toward staff.

To analyze these outcomes, I build summary indices following the methodology outlined in

Anderson (2008). This indexing approach addresses multiple testing concerns while providing clear, interpretable measures of treatment effects across conceptually related outcomes. I create all indices so that higher positive values consistently indicate better outcomes: improved school climate, reduced bullying, enhanced safety, and more effective disciplinary practices. This uniform scaling allows for straightforward interpretation of treatment effects across all survey measures, where positive coefficients represent improvements in school environment and student experiences.

Tables 6 and 7 present the estimated treatment effects on student and staff survey outcomes, respectively, and Figures 8 and 9 show the event study analysis. The results reveal a striking pattern that helps illuminate the underlying mechanisms. From the student perspective, I find no significant changes in reported bullying experiences (coefficient of 0.12, statistically insignificant), suggesting that direct peer-to-peer victimization did not improve following the intervention. However, students did report meaningful improvements in overall school climate (coefficient of 0.147, significant at the 5% level), a 43% increase from baseline levels, indicating that students perceived enhanced school environments even though direct peer victimization experiences remained unchanged.

The staff results point toward changes in educator capacity and approach. Teachers and staff reported significant improvements across all measured dimensions. Staff indicated that bullying incidents had become a less significant problem, with a 53% decrease from baseline (0.26 standard deviations (SD)). More importantly, they reported substantial improvements in their ability to handle bullying incidents and received enhanced professional development on these issues, showing a 108% improvement from baseline (0.38 SD). Staff perceptions of disciplinary fairness and effectiveness improved by 88% from baseline (0.31 SD), while overall assessments of school climate increased by 61% from baseline (0.35 SD). All changes were statistically significant at the 1% level.

These patterns collectively point toward a story where the intervention primarily operated through enhancing educators' capacity and approaches to discipline, rather than through direct changes in student behavior. The lack of change in student-reported bullying experiences, combined with students' improved perceptions of overall school climate, suggests that while peer interactions remained relatively constant, the broader school environment became more supportive. Meanwhile, the substantial improvements in staff preparedness, confidence in handling disciplinary issues, and perceptions of disciplinary effectiveness indicate that the intervention successfully enhanced educators' tools and approaches for managing student behavior. This interpretation aligns with the settlement's emphasis on restorative justice training and suggests that reduced suspension rates reflect more thoughtful, effective disciplinary practices rather than simply more lenient enforcement

or fundamentally different student behavior.

7   Conclusion

This paper provides new evidence on a fundamental question in education policy: can investing in failing schools help them improve? Using a natural experiment from a 2017 lawsuit settlement in Los Angeles Unified School District, I examine the effects of substantial resource increases to the district's 50 lowest-performing secondary schools. The settlement provided approximately $1,000 per student annually for three years, a 40% budget increase on average.

The findings reveal a nuanced picture of how investment affects failing schools. On the positive side, schools successfully implemented the required changes and achieved meaningful improvements in disciplinary climate. They increased certified staff by around 3 per 1,000 students and support staff by almost 2 per 1,000 students, representing 5% increases over baseline levels. More importantly, suspension rates fell by 0.75 percentage points, a remarkable 44% reduction from pre-treatment levels. Survey evidence suggests this improvement reflects genuine changes in educator practices and school climate rather than administrative adjustments, with teachers reporting enhanced capacity to address behavioral issues and more effective disciplinary practices. However, treated schools also experienced demographic sorting, losing 48 students on average while concentrating economic disadvantage. A simple bounding exercise that accounts for demographic sorting indicates that the settlement had meaningful effects on school climate.

These findings extend the robust evidence that money matters for schools to the specific context of failing institutions, addressing a critical gap between general school spending research and policy debates about how to improve the lowest-performing schools. While previous studies demonstrate positive effects of increased spending across diverse school populations, this research shows that investment can meaningfully improve practices even in the most challenging educational environments.

The results highlight the importance of examining multiple outcomes beyond test scores when evaluating school interventions. Despite statistically insignificant changes in academic achievement, the substantial improvements in disciplinary climate represent meaningful progress in the non-cognitive dimensions of schooling that matter for students' long-term development. This finding underscores that school quality encompasses multiple dimensions and that interventions may succeed along some margins while showing limited effects on others.

8 Figures and Tables

Figure 1: Community Coalition v. LAUSD Timeline
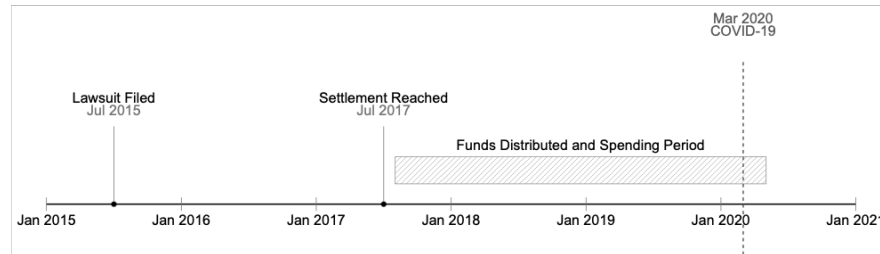
Notes: This figure illustrates the timeline of the LAUSD-ACLU settlement and its implementation. In July 2015, the American Civil Liberties Union (ACLU) and other advocacy organizations filed a lawsuit against the Los Angeles Unified School District (LAUSD) alleging improper use of hundreds of millions of dollars from the Local Control Funding Formula (LCFF). The lawsuit reached settlement in July 2017, with LAUSD agreeing to allocate $150 million specifically for high-need student services. The settlement funds were distributed over three academic years during the spending period from 2017-2018 through 2019-2020. Following the conclusion of the mandated spending period in 2020, the district retained discretionary authority over any remaining unspent funds. The figure shows the key phases of litigation, settlement negotiation, fund distribution, and post-settlement period that form the basis for the empirical analysis in this study.

Figure 2: Effects on spending outcomes
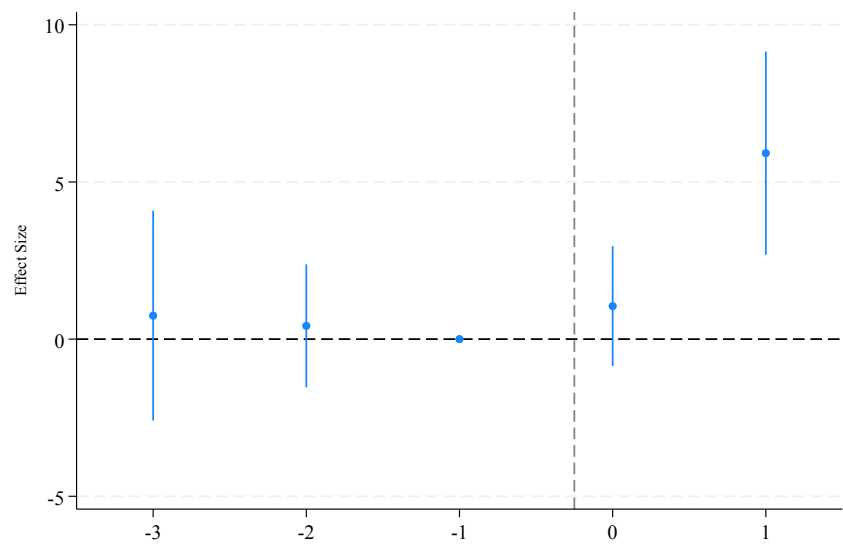
(a) Certified staff
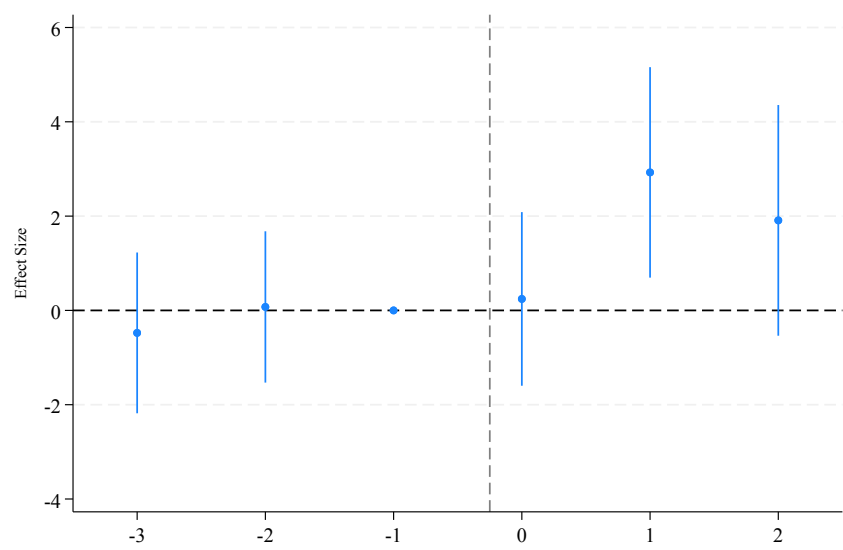
(b) Classified staff

Notes: This figure reports event study estimates of the settlement's effects on school staffing, Panel (a) for certified staff, which includes teachers, administrators, and pupil services personnel requiring credentials; and Panel (b) for classified staff, which includes paraprofessionals, clerical, and other support personnel. All regressions include school and year fixed effects and cluster standard errors at the school level. The x-axis shows years relative to the settlement implementation (year 0). The vertical dashed line indicates the start of the settlement period.

Figure 3: Effect on suspension rate
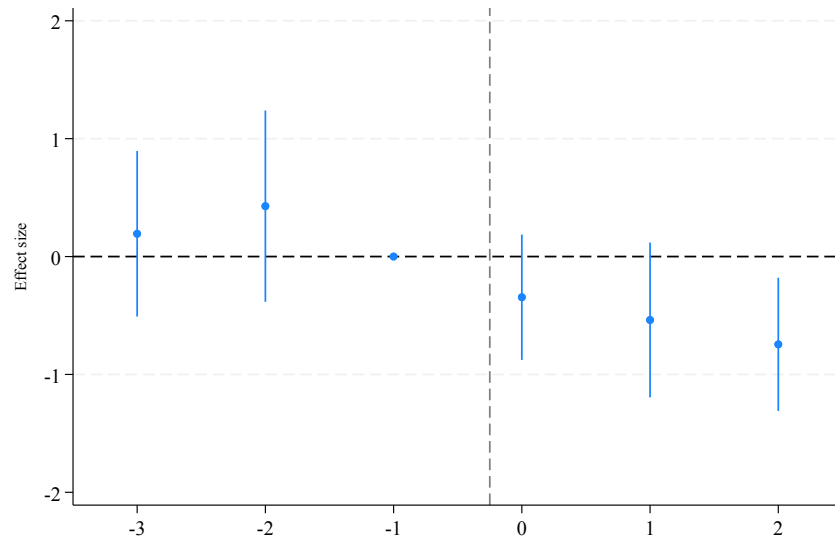
Notes: This figure reports event study estimates of the settlement's effects on student suspension rate. Suspension rate is measured as the percentage of students suspended at least once during the academic year. The regression includes school and year fixed effects and cluster standard errors at the school level. The x-axis shows years relative to the settlement implementation (year 0). The vertical dashed line indicates the start of the settlement period.

Figure 4: Effects on students' performance outcomes
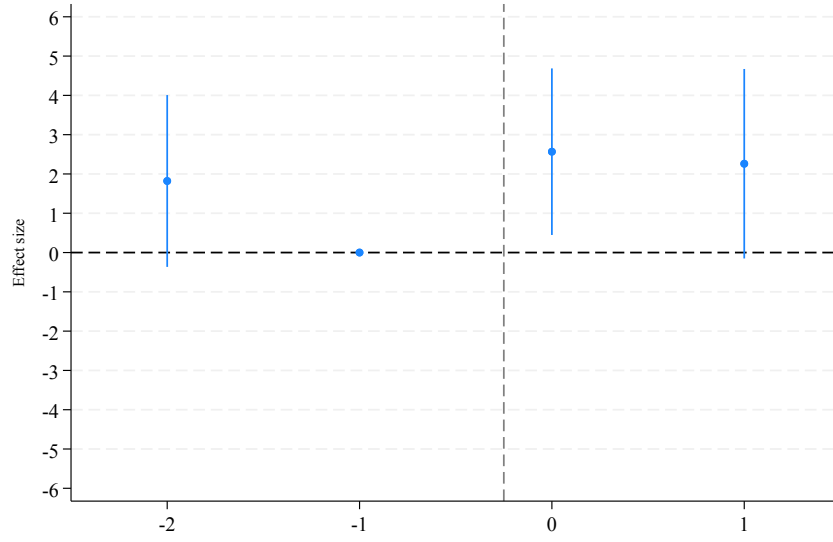
(a) Math

(b) ELA

Notes: This figure reports event study estimates of the settlement's effects on students' performance outcomes. The math and ELA outcomes are the percentage of students who met or nearly met the state standards for the math standardized test (Panel a), and the percentage of students who met the state standards for the English Language Arts standardized test (Panel b), respectively. The regressions include school and year fixed effects and cluster standard errors at the school level. The x-axis shows years relative to the settlement implementation (year 0). The vertical dashed line indicates the start of the settlement period.
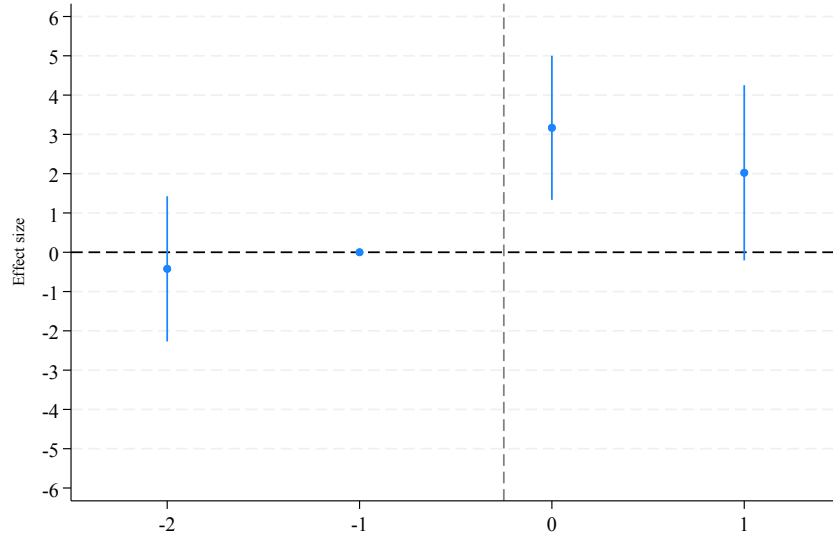
Figure 5: Effect on enrollment

Notes: This figure reports event study estimates of the settlement's effects on school enrollment. The regression includes school and year fixed effects and cluster standard errors at the school level. The x-axis shows years relative to the settlement implementation (year 0). The vertical dashed line indicates the start of the settlement period.

Figure 6: Effects on race composition

(a) % Hispanics

(b) % Blacks

(c) % Whites

(d) % Asian
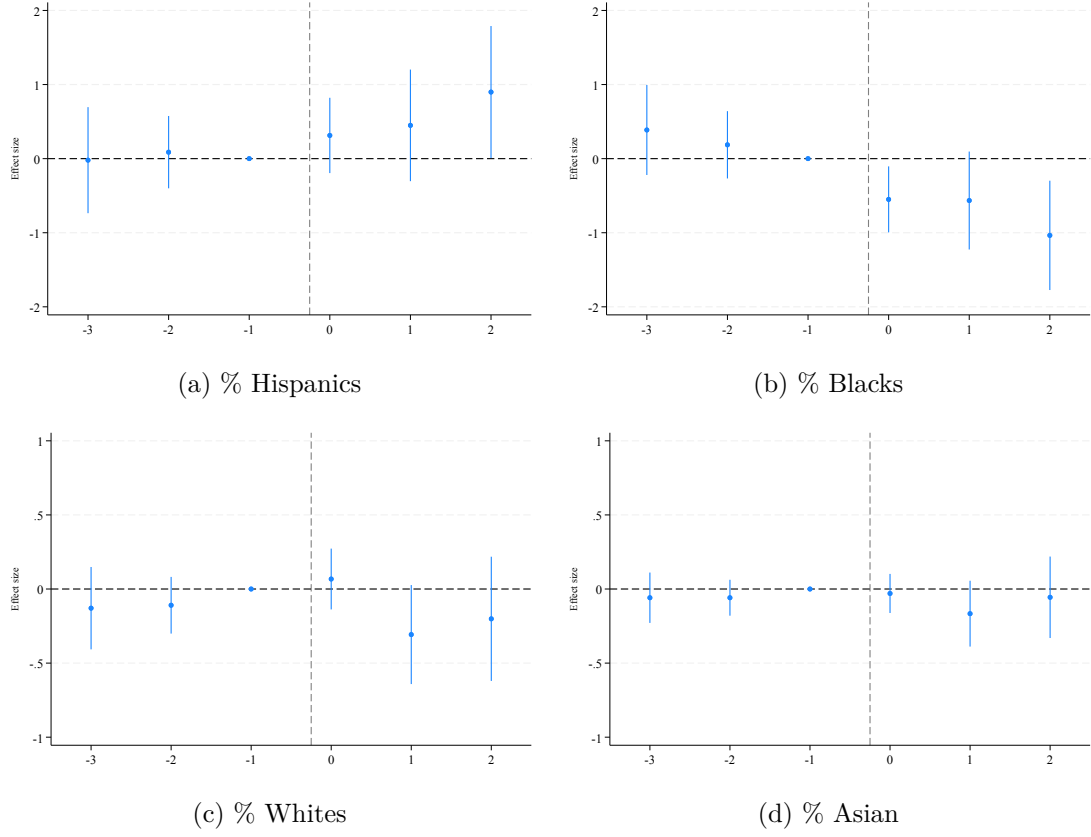
Notes: This figure reports event study estimates of the settlement's effects on racial composition. The regressions include school and year fixed effects and cluster standard errors at the school level. The x-axis shows years relative to the settlement implementation (year 0). The vertical dashed line indicates the start of the settlement period.

Figure 7: Effects on percentage of free lunch students
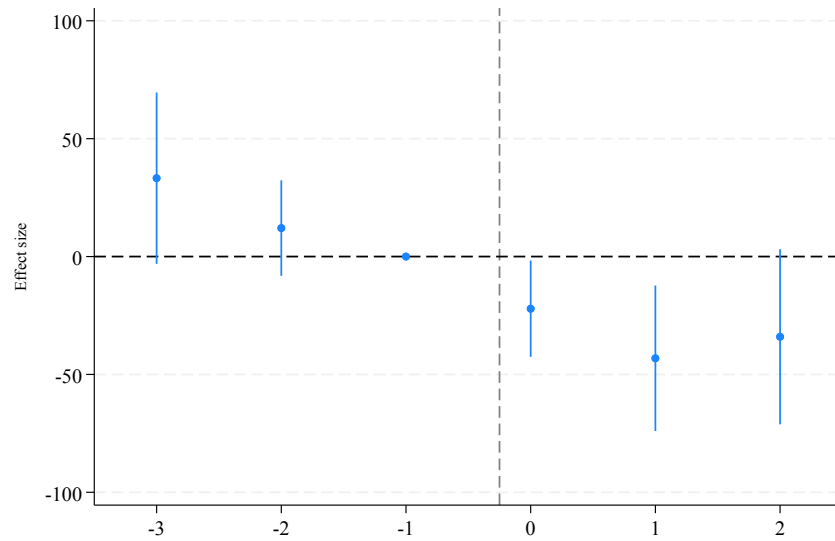

Notes: This figure reports event study estimates of the settlement's effects on the percentage of students classified for free lunch. The regressions include school and year fixed effects and cluster standard errors at the school level. The x-axis shows years relative to the settlement implementation (year 0). The vertical dashed line indicates the start of the settlement period.
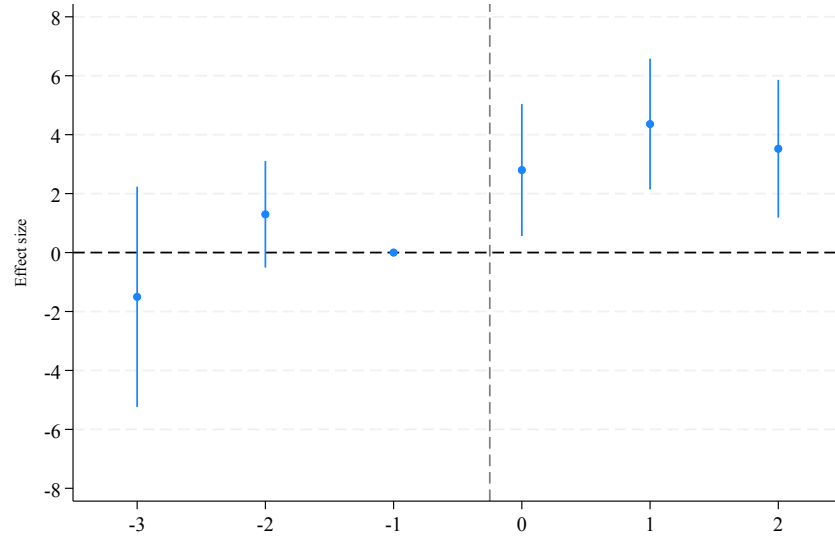
Figure 8: Effects on students' school experience indexes

(a) Bullying index

(b) School climate index

Notes: This figure reports event study estimates of the settlement's effects on students' school experience survey outcomes. The regressions include school and year fixed effects and cluster standard errors at the school level. The x-axis shows years relative to the settlement implementation (year 0). The vertical dashed line indicates the start of the settlement period. I construct survey indices following Anderson (2008) and they are normalize to have mean zero and standard deviation one. The bullying index in Panel a combines four survey questions about students' experiences with physical aggression (being pushed, shoved, slapped, hit, or kicked), relational aggression (having mean rumors or lies spread), sexual harassment (experiencing sexual jokes, comments, or gestures), and appearance-based teasing. The school climate index in panel b includes six survey questions on adult respect and help, feelings of safety and belonging at the school, and overall satisfaction with their school experience.

Figure 9: Effects on staff's school experience indexes

(a) Bullying index

(b) Handling bullying index

(c) Discipline index

(d) School climate index

Notes: This figure reports event study estimates of the settlement's effects on staff's school experience survey outcomes. The regressions include school and year fixed effects and cluster standard errors at the school level. The x-axis shows years relative to the settlement implementation (year 0). The vertical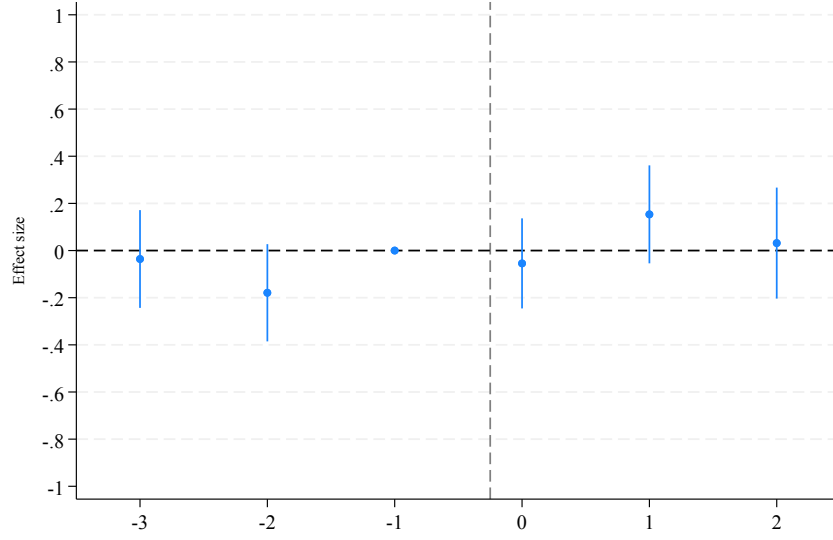 dashed line 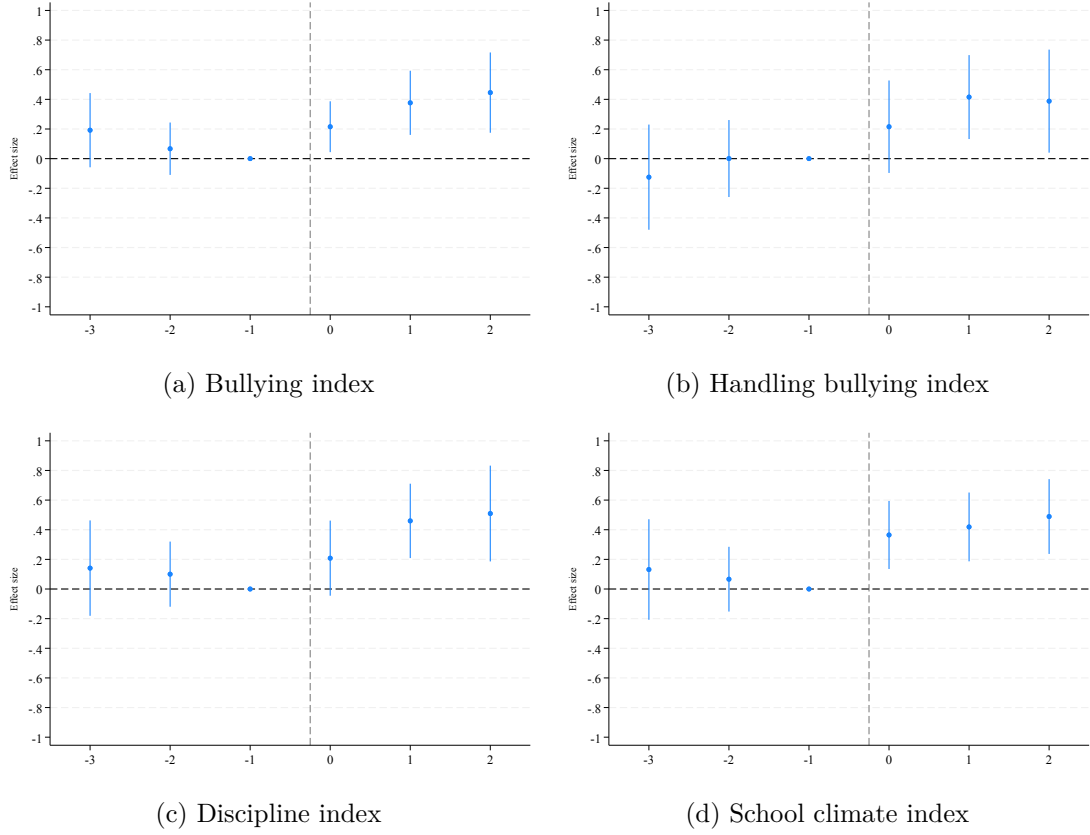indicates the start of the settlement period. I construct survey indices following Anderson (2008) and they are normalize to have mean zero and standard deviation one. In all indexes a higher value means a better outcome. The Bullying index in Panel (a) includes three questions on how much of a problem staff thinks bullying, physical fighting, and discrimination is among students. The Handling bullying index in Panel (B) contains two survey questions related to receiving professional development on preventing bullying and if they address bullying. The Discipline index in Panel (c) includes two questions about the fairness and effectiveness of discipline at school. The school climate index in Panel (d) has four questions on safety, respect, and disruptive behavior. Staff includes teachers, administrators, counselors, and other school personnel.

Table 1: Summary Statistics

	Lawsuit beneficiary					Comparison group				
	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N
Demographics										
N of students enrolled	833.59	407.55	288	1961	49	1187.20	682.70	189	2953	121
% Hispanic	82.09	16.16	28	99	49	80.42	19.17	20	99	121
% Black	14.42	16.39	0	69	49	7.51	12.19	0	71	121
% White	1.21	0.89	0	5	49	4.98	7.32	0	35	121
% Asian	0.89	2.18	0	14	49	3.20	5.16	0	26	121
% less than 2% races	1.39	1.39	0	5	49	3.90	6.06	0	45	121
% free lunch	87.41	5.42	74	99	49	83.61	7.85	53	97	121
% english learner	26.35	6.93	9	42	49	15.12	8.49	0	41	121
% Homeless	4.21	1.88	1	10	49	3.03	1.98	0	12	121
% Foster	1.29	1.02	0	4	49	0.56	0.40	0	2	121
Employees										
Certified staff per 1,000 st	63.56	11.90	48	99	49	54.81	6.47	44	77	121
Classified staff per 1,000 st	37.80	14.54	16	83	49	27.58	9.65	6	61	121
Main outcomes										
Suspension rate	1.70	2.11	0	12	49	0.64	1.11	0	9	121
% near or met math standard	28.30	8.89	9	48	49	44.64	8.41	25	77	121
% met ELA standard	21.90	8.42	5	41	49	32.48	7.61	18	50	121
% not meet ELA standard	44.37	16.40	8	78	49	25.65	13.03	0	55	121
% not meet math standard	69.56	9.94	45	91	49	46.88	12.40	2	71	121
Survey indexes outcomes: students										
Bullying experiences	-0.51	1.11	-2.71	1.42	44	-0.42	1.04	-2.85	2.00	116
School climate	-0.73	0.68	-2.01	1.02	44	-0.21	0.94	-1.88	3.95	116
Survey indexes outcomes: staff										
Handling bullying	-0.35	1.06	-1.96	3.09	45	0.43	1.02	-1.86	3.34	107
Bullying among students	-0.49	1.12	-1.97	2.02	45	0.36	0.98	-1.42	2.91	107
Discipline	-0.35	0.82	-1.65	2.70	45	0.53	1.11	-1.41	3.79	107
School climate	-0.57	0.83	-1.91	1.47	45	0.47	1.03	-1.40	3.70	107
N Schools			49					121		

Notes: Summary statistics correspond to the academic year 2016/17. The comparison group includes all public, non-charter, secondary schools in Los Angeles Unified School District outside of North West district. I construct survey indices following Anderson (2008) and they are normalize to have mean zero and standard deviation one. In all indexes a higher value means a better outcome. For students, the bullying index combines four survey questions about students' experiences with physical aggression (being pushed, shoved, slapped, hit, or kicked), relational aggression (having mean rumors or lies spread), sexual harassment (experiencing sexual jokes, comments, or gestures), and appearance-based teasing. The school climate index includes six survey questions on adult respect and help, feelings of safety and belonging at the school, and overall satisfaction with their school experience. For staff, the Handling bullying index contains two survey questions related to receiving professional development on preventing bullying and if they address bullying. The Bullying index includes three questions on how much of a problem staff thinks bullying, physical fighting, and discrimination is among students. The Discipline index includes two questions about the fairness and effectiveness of discipline at school. The school climate index has four questions on safety, respect, and disruptive behavior.

Table 2: Effects on school spending outcomes

	(1)	N
Certified staff per 1,000 st	3.093**	850
	(1.199)	
Classified staff per 1,000 st	1.828*	1020
	(0.942)	

Notes: Certified staff includes teachers, administrators, and pupil services personnel requiring credentials. Certified staff data is available until academic year 2018/19. Classified staff includes paraprofessionals, clerical, and other support personnel not requiring certification. All regressions include school and year fixed effects. Standard errors are clustered at the school level. * p < 0.10, ** p < 0.05, *** p < 0.01.

Table 3: Effects on students' outcomes

	(1)	N
Suspension rate	-0.750**	1020
	(0.313)	
% Math nearly met or met	1.512	679
	(1.033)	
% ELA met	2.804***	679
	(0.867)	

Notes: All regressions include school and year fixed effects and cluster standard errors at the school level. Suspension rate is measured as the percentage of students suspended at least once during the academic year. The math and ELA outcomes are the percentage of students who met or nearly met the state standards for the math standardized test, and the percentage of students who met the state standards for the English Language Arts standardized test. * p < 0.10, ** p < 0.05, *** p < 0.01.

Table 4: Effects on enrollment and student body composition

	(1)	N
N of students enrolled	-48.203**	1020
	(19.001)	
% Hispanics	0.531	1020
	(0.344)	
% Blacks	-0.908***	1020
	(0.285)	
% Whites	-0.067	1020
	(0.145)	
% Asian	-0.045	1020
	(0.116)	
% Other less 2% races	0.489***	1020
	(0.117)	
% Free lunch	3.629***	1020
	(0.827)	

Notes: All regressions include school and year fixed effects. Standard errors are clustered at the school level. Demographic variables are measured as percentages of total enrollment. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Robustness of treatment effects to student departure assumptions, bounding exercise results

Variable	Original	Scenario 1	Scenario 2	Scenario 3
Treatment Effect	-0.750**	-0.815***	-0.419	-0.287
	(0.313)	(0.308)	(0.307)	(0.308)
Observations	1020	1020	1020	1020

Notes: This table presents treatment effect estimates from difference-in-differences regressions under different assumptions about the characteristics of students who departed treated schools. The dependent variable is the suspension rate. Original shows the baseline estimates. Scenario 1 assumes departed students were well-behaved (zero suspension probability). Scenario 2 assumes departed students had suspension rates five times their racial baseline (2.19% for Hispanic, 9.34% for Black students). Scenario 3 assumes departed students were high-risk with suspension rates five times the treated schools baseline (8.5%). All regressions include school and year fixed effects. Standard errors clustered at the school level are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Effects on students' school experience indexes

	(1)	N
Bullying index	0.115	960
	(0.077)	
School climate index	0.147**	960
	(0.071)	

Notes: All regressions include school and year fixed effects. Standard errors are clustered at the school level. I construct survey indices following Anderson (2008) and they are normalize to have mean zero and standard deviation one. The bullying index in Panel a combines four survey questions about students' experiences with physical aggression (being pushed, shoved, slapped, hit, or kicked), relational aggression (having mean rumors or lies spread), sexual harassment (experiencing sexual jokes, comments, or gestures), and appearance-based teasing. The school climate index in panel b includes six survey questions on adult respect and help, feelings of safety and belonging at the school, and overall satisfaction with their school experience. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Effects on staff's school experience indexes

	(1)	N
Bullying index	0.260***	912
	(0.082)	
Handling bullyng index	0.381***	911
	(0.113)	
Discipline index	0.312***	912
	(0.106)	
School climate index	0.358***	912
	(0.095)	

Notes: All regressions include school and year fixed
effects. Standard errors are clustered at the school
level. I construct survey indices following Anderson
(2008) and they are normalize to have mean zero and
standard deviation one. In all indexes a higher value
means a better outcome. The Bullying index in Panel
(a) includes three questions on how much of a prob-
lem staff thinks bullying, physical fighting, and dis-
crimination is among students. The Handling bully-
ing index in Panel (B) contains two survey questions
related to receiving professional development on pre-
venting bullying and if they address bullying. The
Discipline index in Panel (c) includes two questions
about the fairness and effectiveness of discipline at
school. The school climate index in Panel (d) has four
questions on safety, respect, and disruptive behavior.
Staff includes teachers, administrators, counselors,
and other school personnel. Staff includes teachers,
administrators, counselors, and other school person-
nel. * p $<$ 0.10, ** p $<$ 0.05, *** p $<$ 0.01.

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Online Appendix for:

The effects of investing in failing schools: evidence from Los Angeles Unified School District

Antonia Vazquez

A   Settlement Implementation Requirements

Authorized Expenditure Categories. Schools could spend additional funds on six types of services for high-need students: (1) significant increased investments in high-need students, including academic support and mental health and social-emotional support; (2) increasing A-G and Advanced Placement course access for high school students; (3) Linked Learning (an approach that incorporates rigorous academics, career and technical education, work-based learning, and student supports); (4) school climate initiatives, including restorative justice; (5) high school graduation and student recovery for drop-out prevention; and (6) parent and community engagement.

Tiered Support Structure. School tiers were determined by the total funding amount each school received, calculated using the school's duplicated student count and roughly corresponding to enrollment size. These tiered school climate bundles, known as Achievement through Support Teams (ATS), provide wellness, restorative, child welfare and attendance, dropout prevention, intervention, and recovery, and trauma-informed supports to schools.

Tier 1 schools needed to hire one Restorative Justice Teacher Advisor. Tier 2-3 schools needed either a Pupil Services and Attendance Counselor or a Psychiatric Social Worker plus a Restorative Justice advisor (with schools choosing the Psychiatric Social Worker also receiving Resilience Classroom Curriculum). Tier 4 schools required all three positions (PSA Counselor, Psychiatric Social Worker, and Restorative Justice advisor) plus the mandatory Resilience Classroom Curriculum. The Resilience Classroom Curriculum includes resiliency screenings, trauma-informed teacher professional development, and after-school family resiliency education.