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Inequality in the Classroom: Electoral Incentives and the Distribution of Local Education Spending*

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September 12, 2023

Abstract

Locally-elected school boards have wide discretion over allocating money among the schools in their district, yet we know relatively little about how they decide "which schools get what." I argue that electoral incentives are one factor that can influence the distribution of resources: board members will direct spending toward schools located in neighborhoods of their district where spending will be most electorally beneficial in the next election. I test this argument using data from a discretionary school modernization program in the Los Angeles Unified School District, and find that board members distribute resources primarily to schools in competitive and moderately supportive neighborhoods, especially when running in an on-cycle election where parents make-up a larger share of the electorate and where student performance affects election outcomes. By comparison, schools in overwhelmingly opposed and supportive areas are excluded. These results suggest that local democratic control of school boards can hinder educational equality.

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Universal access and equal opportunity are cornerstones of K-12 public education in the U.S., yet they have often been in tension with the way schools are funded. Historically, public schools were funded primarily by local property tax revenue. As a result, wealthier school districts typically spent more money than poorer districts simply because they were able to raise more revenue (Hoxby 1998). Since the 1970s, however, the school finance landscape has changed dramatically as federal and especially state reform efforts have poured additional money into poorer school districts, effectively closing the spending gap between rich and poor districts in the same state (Card and Payne 2002; Lafortune, Rothstein, and Schanzenbach 2018; Murray, Evans, and Schwab 1998).

At the same time, locally-elected school boards have maintained control over allocating that money among the schools in their district, meaning that there may be spending disparities *within* districts even as each district is spending roughly the same amount overall. And in fact, new descriptive research shows that such intra-district resource imbalances are common (Roza and Anderson 2020; Shores and Ejdemyr 2017). School-level spending may differ for any number of reasons. For one, school boards may assign more teachers and administrators to some schools in their district than others. Likewise, they may fund specialized programming (e.g., after-school reading programs), provide students with laptops or new textbooks, or upgrade facilities at some schools but not others. To date, however, there have been relatively few systematic analyses of how local board members make spending decisions; i.e., what factors influence how a local board decides which schools get more staff, or new furniture and textbooks?

I argue that politics may be one such factor — at least on the margins. My argument draws on an extensive, cross-national theoretical and empirical literature on distributive politics (Cox 2010; Golden and Min 2013), which posits that incumbents can reap electoral rewards by delivering government spending to voters. However, since elected officials have finite resources at their disposal, they are expected to allocate these resources strategically to specific constituencies, prioritizing those voters seen as most likely to respond favorably to such transfers (e.g., swing voters; see Dixit and Londregan 1996). In simpler terms, incumbents are anticipated to spend in a manner that optimizes their chances of securing a higher vote share in the next election. Applying these insights to the school board context, I expect local elected school board members to allocate more resources to schools located in these "politically-valuable" neighborhoods than others, all else equal.

I test this argument using data from a discretionary school modernization program in the Los Angeles Unified School District (LAUSD), the second largest public school system in the country.[1] Since 1997, voters in the LAUSD have passed over $20 billion in bonds to repair and upgrade public schools in the district. While most of these funds are allocated to schools on a formula-basis, elected LAUSD board members also set aside a portion of these funds to distribute to schools of their own choosing. Under this program — known as the Board Member Priority (BMP) Projects program — school board members have purchased laptops for students, upgraded classroom internet access and furniture, built new stadiums and auditoriums, installed new roofing, and more. Over the nine academic years included in my analysis, board members spent $21 million in BMP funds. The BMP program is well-suited to test my argument because I can observe how individual board members choose to distribute resources when given the chance to do so.

My analyses combine data on BMP spending from 2011 to 2020 with precinct-level school board election returns aggregated to school attendance zones. Using both within-district and within-school regressions, I consistently find a concave relationship between voter support and BMP spending. School board members are especially likely to award funding to schools located in electorally competitive and moderately supportive neighborhoods of their district, suggesting that they use school spending as a way to persuade "on-the-fence" voters and to solidify support among those previously weakly-aligned. Schools in areas overwhelmingly opposed or supportive of the board member are much less likely to receive funding. These results affirm the expectation that school board members will allocate resources unequally for electoral reasons, leaving some schools and students with more resources than others. I also report suggestive evidence that these allocation patterns reflect efforts by board members to improve (some) student outcomes — and in turn, win votes. Most notably, I find that the effects are concentrated among board members whose

[1] In 2021-2022, the LAUSD's $20 billion budget was larger than 18 state budgets.

next election will be held on-cycle, where parents make-up a larger share of the electorate (Kogan, Lavertu, and Peskowitz 2018) and where student performance tends to affect election outcomes (Payson 2017).

These results suggest that local democratic control of school boards can hinder educational equality. Because school spending tends to improve student learning outcomes (e.g., Abott et al. 2020; Holden 2016; Hyman 2017; see Jackson and Mackevicius 2023 for a meta-analysis), if some schools are better funded than others, then some students will have greater opportunity for academic success than others. Of course, I am not arguing that electoral considerations fully explain intra-district spending disparities, or even that they are the most powerful predictor of "which schools get what." While my own supplemental descriptive analysis of total school spending in the LAUSD reinforces the BMP program findings, research in contexts outside of the LAUSD is needed. Still, this paper provides the first robust empirical evidence to date that politics can affect the distribution of local education spending.

Inequalities in School Spending

In 1647, the Massachusetts Bay Colony mandated that every town support a public school. In doing so, they provided the foundation for a public school system in America and established two key tenets of that system: (1) governing and operating public schools rests with local officials; and relatedly (2) local schools were to be funded by local dollars. The latter meant that wealthier communities would spend more on public education than poorer communities simply because they could raise more revenue. Indeed, between 1900 and 1970, local per capita income explains a substantial amount of the variation in per pupil school spending (Hoxby 1998).

Between 1971 and 2010, however, 28 states revised their school funding formula to provide additional funds to low-income school districts, thereby weakening the relationship between local income and district spending by decreasing the share of spending contributed by local sources

(Card and Payne 2002; Murray, Evans, and Schwab 1998).[2][3] Analyzing changes from 1990 to 2012, Lafortune, Rothstein, and Schanzenbach (2018) show that low-income districts collected about 20 percent less revenue than same-state, high-income districts in 1990. Since 2001, however, low- and high-income districts have spent about the same amount of money.

But *district* spending and *school* spending are not one and the same. Recent events in California illustrate this point. In 2013, California revised its funding formula to provide additional funding to high-need districts. The legislation also gave districts the flexibility to use these funds as they see fit, and local districts appear to have taken advantage of that freedom: post-reform analyses show that many high-need districts receiving extra state funds did not actually distribute that money to their high-need schools (Silberstein and Roza 2020). In the end, high-need districts in Los Angeles, San Diego, and Sacramento continued to spend more on the lowest-need schools. The California case underscores an important reality about K-12 education finance: even as federal and state governments have increased their contributions, local control has largely persisted. Indeed, locally-elected school boards everywhere have wide discretion over the distribution of spending — staff, instructional supplies and materials, facility upgrades, transportation, and more — to specific schools in their district. Some schools may therefore have more resources than others even as they spend roughly the same amount of money as other same-state districts in the aggregate.

There are a variety of ways that within-district spending gaps may emerge. The most obvious is that experienced, and therefore higher paid, teachers or administrators may be concentrated in certain schools (Lankford, Loeb, and Wyckoff 2002; Rubenstein et al. 2007). But school boards also have discretion over *how many* teachers and administrators work at each school, which can independently affect school resource levels. The most common district-level approach to funding schools is a centralized staffing model whereby local boards apportion staff positions to individual

[2] These reforms were trigged by *Serrano v. Priest*, in which the California Supreme Court held that financing education entirely through local property wealth "invidiously discriminates against the poor because it makes the quality of a child's education a function of the wealth of his parents and neighbors." https://scocal.stanford.edu/opinion/serrano-v-priest-27628

[3] The federal government increased its investment in education as well, primarily through targeted spending to low-income districts (e.g., Title I, as well as bilingual and special education aid). Federal spending, however, has never accounted for more than 10% of education spending.

schools with money to follow.[4] As a result, budget discussions often circle around whether to create or cut positions at specific schools. In Cambridge, Massachusetts, for instance, the school board recently approved a budget cutting four staff positions and two classrooms at one of its most under-privileged elementary schools, despite no expected change in enrollment.[5] School boards can also offer new programs or services, or expand, reduce, or eliminate existing ones, at particular schools: officials in Worcester County, Maryland recently eliminated after-school and summer programs at five of its 12 schools.[6] Notably, the COVID-19 pandemic put the discretionary power of local school boards in distributing resources under even brighter lights. Since 2021, the federal government has provided nearly $190 billion in stimulus money to local districts to spend as they wish. In Dearborn, Michigan, the local board allocated $40 million of its $140 million allotment to install air-conditioning at eight of its 30 schools — leaving 12 schools still without.[7]

How prevalent are school-level spending inequalities, and what explains them? Research on these questions has come in two waves. The first was limited to studies of individual jurisdictions (e.g., states or districts) where school-level spending data was readily available (Condron and Roscigno 2003; Roza et al. 2007; Owens and Maiden 1999; Rubenstein et al. 2007). Each finds evidence of school-level inequalities and most often, demographic inequities as well. In Columbus, Ohio, for instance, elementary schools with few poor students receive nearly $800 more per student than those with many poor students (Condron and Roscigno 2003). The second wave draws on new nationwide data courtesy of the Civil Rights Data Collection (CRDC) and the Every Student Succeeds Act (ESSA). Like earlier work, analyses of these data suggest that intra-district inequalities are widespread across the country (Roza and Anderson 2020). On average, however, schools attended primarily by poor, non-white students receive about $65 *more* per pupil than schools in the same district attended by wealthy, white students (Shores and Ejdemyr 2017). At the same time, between 29% to 44% of districts under-allocate resources to schools attended by poor, non-white

[4] As of 2020, 90% of students are served by districts taking this approach to allocating resources to individual schools. The remaining students are educated in districts where funds are allocated by a local formula. https://edunomicslab.org/wp-content/uploads/2020/11/WSF-Lessons-Learned.pdf

[5] https://www.thecrimson.com/article/2023/3/31/cps-budget-backlash/

[6] https://mdcoastdispatch.com/2023/06/13/school-board-cuts-1-7m-budget-after-county-reduction-compens

[7] https://firstbell.dearbornschools.org/2022/12/22/december-facilities-update-info-at-january-meeting-

students.

Factors beyond demographics could also plausibly contribute to intra-district disparities. Along these lines, Fischer (2023) finds that California schools with many Hispanic students receive more capital funding when there are more Hispanics on the local school board than schools in the same district with fewer Hispanic students, suggesting that the personal characteristics and circumstances of local board members can shape spending. I build upon Roza and Anderson (2020)'s conjecture that spending gaps reflect a school system's "policy, historical, and *political* context" (emphasis added) and offer another possible explanation for how local school boards distribute resources: re-election demands lead board members to prioritize schools located in neighborhoods where spending is likely to net the greatest number of votes in the next election.

Distributive Politics on School Boards

Political scientists have long theorized that "bringing home the bacon" can help politicians cultivate a personal vote based on their performance in office rather than their partisanship (Cain, Ferejohn, and Fiorina 1987; Mayhew 1974). Empirical research has confirmed these expectations using data on government spending and incumbent vote shares in the U.S. federal elections (Grimmer, Messing, and Westwood 2012; Kriner and Reeves 2012; Levitt and Snyder 1997). While no study shows that school spending increases vote shares for incumbent school board members, below I detail a few reasons why it might.

First, school spending is widely popular among the American public: about 72% support increasing education spending, higher than support for increased spending in any other policy area (Pew Research Center 2019). Voters could reward board members with their support simply because they increase investment in their neighborhood schools, assuming they are aware of those investments. Perhaps more likely, they could also reward school board members for the *effects* of school spending, as theorized in models of retrospective voting (e.g., Kiewiet and Rivers 1984). That is, school board members may benefit from investing in schools even if voters do not reward them for spending itself, but instead evaluate them on outcomes affected by school spending. The literature points to two ways that school spending may influence election outcomes indirectly: student test scores and home values.

Most obviously, incumbents may be rewarded electorally because student test scores often increase in response to greater school spending. As noted earlier, contemporary research on the effects of school spending on student performances tends to show that spending improves performance (Gigliotti and Sorensen 2018; Holden 2016; Jackson, Wigger, and Xiong 2021; Kreisman and Steinberg 2019). Increases in spending need not necessarily be large, as even $96.90 per student in textbook funding has been shown to increase test scores (Holden 2016). Increases in spending do not typically bear fruit immediately, however; for example, Great-Recession era cuts to school funding show a noticeable decrease in test scores beginning in 2013 (Jackson, Wigger, and Xiong 2021; see also Abott et al. 2020; Rauscher 2020).

Yet there are also reasons to doubt that improvement in student performance will help an incumbent win re-election. In fact, school board members are rarely punished at the polls for poor student performance (Berry and Howell 2007; Kogan, Lavertu, and Peskowitz 2016; but see Holbein 2016). This lack of electoral accountability may reflect the composition of the electorate: students cannot vote, and those that do tend to be highly unrepresentative of students. Most notably, parents typically make-up just 40-45% of the electorate in school board races (Kogan, Lavertu, and Peskowitz 2021). Student outcomes may be orthogonal to election outcomes simply because parents — those most directly affected by and informed about the quality of neighborhood schools (Chingos, Henderson, and West 2012) — are not the pivotal voting bloc in these elections.

But student outcomes *can* affect election outcomes when students are better represented among voters, primarily via increased parent participation. While the average effects of test scores on school board voting behavior may be null, test scores do affect support for incumbent school board members when the election is held alongside a November presidential election (Payson 2017), a setting where parents comprise a larger share of the electorate (Kogan, Lavertu, and Peskowitz 2018). Board members may therefore be best able to translate spending into votes via improved student achievement in on-cycle elections.

School spending can also have downstream impacts that could impact voting behavior. Property values are one especially salient issue in local electoral politics (Brunner and Sonstelie 2003; Einstein, Glick, and Palmer 2019; Fischel 2001), and several studies show that school spending tends to increase neighborhood home values (Cellini, Ferreira, and Rothstein 2010; Lafortune and Schönholzer 2021; Neilson and Zimmerman 2014). As with spending's effects on student achievement, the effects also unfold gradually. For instance, one estimate suggests that capital spending increases home values by about 6% after three years, with effects continuing to grow in size before peaking in magnitude five and six years later (Cellini, Ferreira, and Rothstein 2010). At least partially, these gradual effects likely reflect the fact that spending increases home values *through* its effects on student performance and school quality (Black 1999; Figlio and Lucas 2004). Spending-induced improvements in home values may thus allow board members to benefit from school spending in the ballot box even if the median school-board voter cares little about student outcomes.

Taken together, there are reasons to expect school spending to improve an incumbent board members' re-election chances. The challenge facing school board members, however, is that they do not have a unlimited amount of money to distribute. Moreover, not every voter may be responsive to school spending: some voters may reward them for spending with their vote, while others may not. For example, some citizens may be strongly ideologically predisposed to oppose the incumbent (e.g., the voter is an opponent of school choice, while the incumbent is not). In such cases, no amount of spending is likely to change their mind. Thus, electorally-motivated school board members should direct their finite budget where it will be most effective at increasing support. But beyond seeing steadfast opposition voters as inefficient targets for spending, scholars disagree on exactly how reelection-minded incumbents should allocate spending.

One perspective suggests that incumbents should prioritize swing voters (Dixit and Londregan 1996; Lindbeck and Weibull 1987; Stokes 2005). These voters have weak ideological or partisan attachments. For this reason, they may be most inclined to vote on the basis of incumbent deliverables, and they are also likely much "cheaper" to persuade than a voter with strong attachments to the opposition candidate or party. Elected officials therefore use government spending to persuade swing voters and expand their electoral coalition. An alternative point of view, however, predicts that elected officials will direct benefits toward their core supporters (Cox and McCubbins 1986). Here, government spending is seen as a way of retaining existing support. The model considers targeting fickle swing voters as too risky because it may often result in wasting resources on unresponsive voters. Additionally, spending can also motivate participation among those ideologically predisposed to back the incumbent (Chen 2013; Cox 2010; Nichter 2008).

Whether incumbents pursue electorally-motivated targeted spending could also depend on when the next election is. Voters are known to care most about recent performance (Huber, Hill, and Lenz 2012). Consequently, elected officials tend to increase government spending during an election year (Persson and Tabellini 2003; Tufte 1978). Moreover, *when* elected officials target swing or core voters also appears to be conditioned by the electoral calendar. Kriner and Reeves (2015), for instance, find that presidents are especially likely to distribute federal spending to swing voters during election years.

If, however, spending primarily affects voting behavior through its effects on observable conditions (e.g., student achievement and home values), then whether election-year investments will prove electorally useful will hinge on those investments meaningfully impacting those conditions before the election (Drazen 2008). Since the effects of school spending on achievement and consequently home values are not immediately observable, and grow in size over time, election-year investments may pay few electoral dividends. If school board members aim to maximize support via improved outcomes, then they will likely pursue targeted spending strategies several years prior to the next election.

My analysis tests whether school board members target swing voters, core voters, or opposition voters with school spending. Later in the manuscript, I also assess whether these effects depend on election timing (e.g, on- vs. off-cycle) and the electoral timeline (e.g., the amount of time till the next election). These two analyses of heterogenous effects will address *why* board members behave in the way that they do — or put another way, how board members perceive spending translating into votes. Before proceeding, however, I detail the empirical context of my study: the LAUSD Board Member Priority Project program.

LAUSD Board Member Priority Projects

Public elementary and secondary schools in the U.S. are in poor physical condition. More than half of all public schools in the U.S. need at least one major facility repair (Alexander and Lewis 2014), and in 2017, the American Society of Civil Engineers gave public K-12 infrastructure a quality grade of D+ (American Society of Civil Engineers 2017). Public schools in LAUSD — the second largest public school system in the country — are particularly run-down. LAUSD students currently attend schools that are almost 70 years old on average; nationally, the average school is about 45 years old (National Center for Education Statistics 2014). Classrooms are often overcrowded, with double the number of students to desks; many facilities lack adequate restrooms, and classroom temperatures often exceed 90 degrees Fahrenheit (Terzian 1990).

In response, LAUSD voters have passed a series of board-proposed bond measures to repair and modernize public schools. The bonds provide for capital spending to build new schools, and upgrade existing schools by addressing deteriorating and outdated conditions.[8] Bond efforts to modernize existing schools are focused primarily on schools that are at least 50 years old. In total, over $20 billion has been approved and spent since 1997. Most of these funds are allocated by unelected district administrators on a formula-basis, but elected LAUSD board members also set aside a small portion of the bond money to spend at their own discretion. These projects — called the Board Member Priority (BMP) Projects — are meant to address school needs that would otherwise go unaddressed.[9] Two board members echo these goals in public comments about the BMP program (Clough 2014):

[8] Thus far, research suggests that bond spending devoted to building new schools effectively reduced overcrowding and improved student learning outcomes (Lafortune and Schönholzer 2021).

[9] Funds are divided to board districts by student enrollment. Funds are assigned to the district, not particular board members.

> "The projects that we have funded for my board district are primarily projects that would never get funded otherwise." -Tamar Galatzan, Board District 3, 2007-2015

> "I would trade in my [priority funds] if the district would give me the needs of all my schools." -Mónica García, Board District 2, 2006-2022

Board members have complete control over how their BMP funds are spent, and the process in place for spending those funds allows board members to "cut through red tape and directly help a school fast" (Clough 2014).[10] While the citizen-run Bond Oversight Committee (BOC) provides feedback on proposed BMP projects, they are unable to unilaterally prevent a board member from distributing BMP funds. Furthermore, proposed projects are rarely if ever discussed or debated among school board members. Indeed, as one board member put it, "board members respect the process that has been created" (Clough 2014). Given these features, the BMP program is an ideal testing-ground for my argument because it is an entirely discretionary program where board members can allocate funds to whichever schools they would like, independent of the preferences of other actors.

Readers, however, may worry about external validity. The amount of money distributed via the BMP program is small relative to what the LAUSD spends in total; how BMP funds are distributed may not be representative of how the great majority other funds are allocated. In addition, the behavior of LAUSD school board members may not generalize to the modal school board member in the U.S. Each are valid concerns, and I address them in the conclusion. I also present results using data on total LAUSD school spending that corroborate my findings about the BMP program.

Data

Election Results

I collected precinct-level LAUSD school board elections results for all elections from 2009 through 2019. LAUSD elections are non-partisan, and held every two years for a subset of districts, mean-

[10] Funds may be awarded following an open call for applications from district schools, but board members may also initiate projects on their own. Unfortunately, data on how projects originate is not available.

ing that board members serve four-year terms.[11] Board members are eligible to serve up to three terms. From 2009 through 2019, 19 individuals were elected to the school board, and 87% of the 15 members eligible to seek re-election did so. Board members are elected via a multi-candidate primary election held in March, with elections where no candidate receives at least 50% of the vote moving to a June run-off featuring the top two candidates from the March primary. Throughout the paper, I use election returns from the March primary because every board member participates in the March election.[12] Support in the March primary election also offers a measure of the board member's "true" support level. In other words, the March primary results give elected officials the strongest indication of their level of support and opposition throughout their district as it stands before many voters are forced into supporting their second, third, or even fourth choice candidate.

Of interest in this paper is whether school board members deliver BMP funds to particular *schools* on the basis of their past electoral support. Though schools do not vote, citizens residing near schools do. I therefore place each voting precinct into a school attendance zone using the 2011-2012 boundaries, and combine votes cast across precincts but within school zone boundaries.[13] School attendance zones are the geographic boundaries that define that set of students who can attend each school, and so votes cast within each school attendance zone represent the votes of those living within that school zone.[14] Where precincts cross several school zone boundaries (but not school board districts), I allocate precinct votes to school areas by the share of the precinct land area that overlaps with the school zone land area. Figure A1 illustrates this process.

I calculate the board member's vote share at each school as the board member's share of votes cast between the board member and the largest, or next largest, vote-getter at the school. That is, if the board member finished third in particular school zone, I divide their vote count by the sum of their vote count and the first place candidate at that school. I do this because vote shares decrease mechanically as the number of candidates increases; receiving 30% of the vote in a two-candidate

[11] Districts 2, 4, and 6 voted in 2009, 2013, and 2017. Districts 1, 3, 5, and 7 voted in 2011 and 2015. Special elections in Districts 1 and 5 were held in 2014 and 2019, respectively.

[12] About half of LAUSD board elections during this time period advanced to a run-off.

[13] I use the boundaries from 2011-2012 because school zone boundaries are post-treatment.

[14] Excluded from this study are charter schools (LAUSD-affiliated and LAUSD-unaffiliated) and magnet schools. These schools do not have geographic-based restrictions on attendance.

race reflects an uncompetitive race and a poor electoral performance, while the same 30% in a four-candidate race likely signals a much more competitive election. On average over this time period, elections featured four candidates. The two-candidate vote share measure therefore ensures comparability across districts even as districts vary in the number of candidates on the ballot. On average, candidates received about 61% support districtwide; the average within-district standard deviation in voter support, however, is about 8 percentage points, suggesting that board members often fare better in some parts of their district than others. My analysis leverages this variation.

BMP Spending

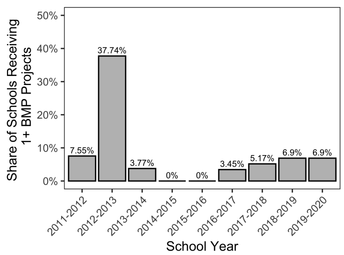
I collected information on every BMP award made between the 2011-2012 through 2019-2020 school years from the LAUSD BOC. For each project, the BOC reports the name of the school receiving the project, a brief description of the project, and the amount of money allocated by the board member for the project. I aggregate BMP spending by school and school year, summing the amount of BMP funds allocated when schools received more than one project in a given school year.[15] Schools that received no BMP spending in a given school year were coded as such.

From 2011-2012 to 2019-2020, $21 million across 533 projects was spent. After dropping those made to schools not included in the election dataset (i.e., charter and magnet schools that lack attendance boundaries, as well as schools not yet opened as of the 2011-2012 academic year), I am left with 407 projects summing to $16.27 million. Among schools receiving BMP spending, the average school received about $42,000 in a given school year, which is about $71 per pupil on average. As noted, projects are meant to upgrade or renovate school facilities or otherwise improve the classroom and learning experience for students. Projects address a range of school needs. For descriptive purposes, I categorize each project into either (1) technology; (2) interior;

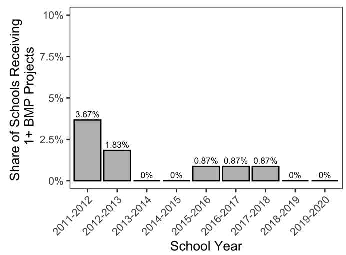
[15] Some BMP projects are joint-funded with other programs, such as the LDP program described at the end of the paper. In these cases, the data fortunately always report how much of the total funding amount came from each program. Other projects were reported as omnibus allocations, with one dollar amount covering several schools. In these cases, I divide the dollar amount by the number of schools. Table A1 reports the main results with joint-funded projects excluded, and in models with the amount of BMP spending as the outcome variable, with projects with estimated budgets excluded. The results do not change.

(3) exterior; and (4) other upgrades. As shown in Figure A2, over two-thirds of funds went to computing/technology and exterior facility upgrades, such as new computers, a new electronic marquee sign, and new lunch area shade structures or playground equipment.

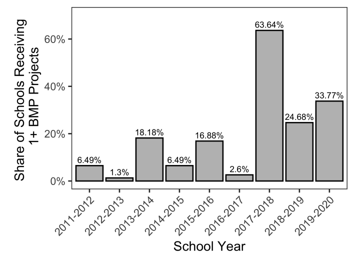
Figure 1: **Share of Schools Receiving BMP Projects by District and School Year**



(a) District 1



(b) District 2



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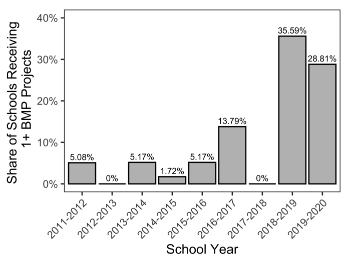

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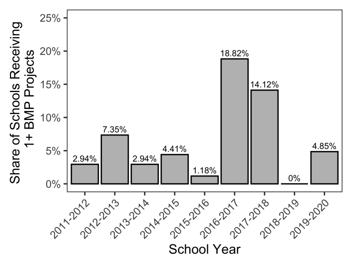
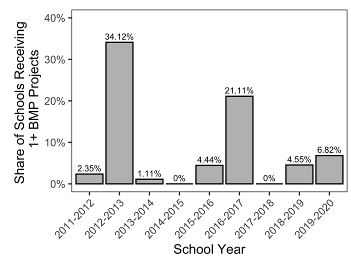
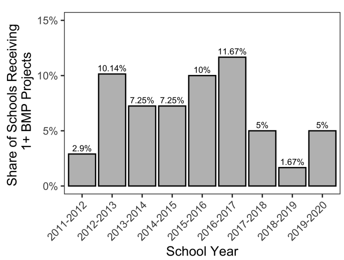


(e) District 5



(f) District 6



(g) District 7

Only about 43% schools received BMP money over nine academic years under study. Put another way, over an almost decade long period, more than half of all LAUSD public schools *never* received a dollar in BMP funds from their board member. Further, there is considerable variation within districts from school year to school year. Figure 1 plots the share of schools receiving at least one project by school year and district. A handful of exceptions notwithstanding (e.g., District 3, 2017-2018), it is much more common that very few schools, or sometimes *no* schools, receive a project than it is for most schools to receive a project. Aggregating these shares across districts, just 8% of schools received at least one project in a given school year on average. School board members clearly do not distribute BMP spending universally to schools in their district. My argument predicts that variation in voter support explains which schools do and do not receive funding.

Additional Variables

Electoral politics may not not be the only explanation for how BMP funds are allocated, and I control for several in my analysis. For starters, as noted before, the BMP program is part of modernization efforts focused on the oldest schools in the district, and especially those at least 50 years old. BMP funds should therefore go to the oldest schools, all else equal. I test this possibility with the age of each school in years as of each academic year, and its squared term.

As mentioned, the BMP program was one subset of a much larger bond program. About $4.33 billion in non-BMP bond funds was spent from 2011 to 2020, and of those schools receiving money, the average received about $3.1 million in non-BMP bond funds in a given year. Non-BMP funds are typically allocated to schools by district administrators based on needs. Board members could use BMP funds to support schools that are left out of formula spending, or they could supplement formula funds with BMP funds. Non-discretionary bond spending is reported annually in the LAUSD Facilities Services Division's *Strategic Execution Plan*. The reports details each of the *ongoing* modernization projects as of the end of the academic year. Using these reports, I identified projects new in each year, and created two school-school year variables: (1) an indicator for whether the school received *no* formula money in that year; and (2) conditional on having received formula money, the per pupil amount that the school received that year pooled across individual projects (with those receiving no funds coded as such). Combined, these two variables allow me to simultaneously assess the effect of receiving no non-discretionary funding on BMP allocations and the effect of each percent increase in formula money on BMP spending among those receiving funds.

School board members could also use these funds to help the most socioeconomically disadvantaged students. I measure the demographic profile of each school using annual data from the California Department of Education.[16] I create five measures: (1) the percentage of students in each of three racial and ethnic categories (non-Hispanic white, non-Hispanic Black, and Hispanic); (2) percentage of students who are English learners; and (3) the percentage of students eligible for free and reduced lunch.

Finally, school board members may also pursue *private* interests — i.e., benefit schools in their own neighborhood — while awarding BMP funds (Billings et al. 2022). To account for this possibility, I collected home addresses for each school board member and identified which school zones they themselves reside in, as well as each neighboring school zone. These variables also help to rule out alternative explanations for the effects of vote share on BMP spending. For instance, if I find evidence of core voter targeting, this could simply reflect board members pursuing private interests rather than their electoral interests since candidates for office tend to fare best in and around their place of residence (Key 1949).

Research Design

I estimate two equations using ordinary least squares regression. The first and primary specification is:

$$BMP_{ijk} = \beta_1 Vote\ Share_{ijl} + \beta_2 Vote\ Share^2{}_{ijl} + \beta_3 X_{ijk} + \theta_{jl} + \alpha_k + \varepsilon_{ijk} \quad (1)$$

where BMP_{ijk} is either (1) an indicator for whether school i in district j received at least one BMP project in school year k; or (2) the per pupil amount of BMP funds school i in district j received in school year k.[17] $Vote\ Share_{ijl}$ is the board member's share of vote at school i in district

[16] https://www.cde.ca.gov/ds/ad/downloadabledata.asp

[17] I take the inverse hyperbolic spline of per pupil BMP spending and formula spending, the latter of which is included in X_{ijk}. The inverse hyperbolic spline of spending has the same interpretation as the log of spending, but is

j in election l. $\textit{Vote Share}^2{}_{ijl}$ is the board member's *squared* share of vote at school i in district j in election l. X_{ijk} includes the additional variables described above, as well as indicators for school i's grade-level (elementary, middle, or high school).

Significant coefficients on β_1 and β_2 would suggest that school board members allocate resources strategically on the basis of voter support, and therefore that some schools and students receive more investment from the board member than others. The direction and size of the coefficients indicate whether schools in core, swing, or opposition neighborhoods are the primary beneficiaries of this targeting. For instance, a positive β_1 and a negative β_2 would suggest that board members allocate BMP spending to more supportive schools, but that these positive effects attenuate at particularly high levels of support. The size of the coefficients reveal where exactly (e.g., at 50% or 55%, etc.) the propensity to allocate spending begins to decrease. On the other hand, positive β_1 and β_2 terms would suggest that board members are particularly likely to allocate BMP projects to the *most* supportive schools, indicating support for the core voter model.

θ_{jl} are district-election year fixed effects. The estimates therefore indicate whether schools that gave more support to the board member received more BMP dollars relative to schools in the *same* district that gave less support to the *same* board member in the *same* election cycle, net of the control variables. The benefit of this approach is that it holds the incumbent constant, estimating how they "divide-the-dollar" within their own district based on their level of electoral support in the previous election. For the estimates to be biased, there must be school-level confounders not captured by X_{ijk}. α_k are school year fixed effects.[18]

As a robustness check, I also present results from a second specification:

$$BMP_{ijk} = \beta_1 \textit{Vote Share}_{ijl} + \beta_2 \textit{Vote Share}^2{}_{ijl} + \beta_3 X_{ijk} + \theta_i + \alpha_{jk} + \varepsilon_{ijk} \tag{2}$$

Equation 2 replicates Equation 1 exactly but replaces district-election and school year fixed effects with school and district-school year fixed effects, given by θ_i and α_{jk}, respectively.[19] This

not undefined for zero.

[18]Standard errors are also clustered by school-election.

[19]School age and grade-level are excluded from X_{ijk} in this specification because the former is a linear function of

approach leverages changes over-time in incumbent support within schools. In other words, rather than use variation in support within a district for a given incumbent at one point in time (Equation 1), the model estimates how BMP allocations change when school support for the incumbent changes from one cycle to the next, either because there is a new incumbent or because support for the same incumbent increased or decreased. District-school year fixed effects restrict counterfactual comparisons to schools within the same district.

Results

Table 1 presents the main results. Columns (1) and (3) show the results for each dependent variable using Equation 1, while Columns (2) and (4) report the results using Equation 2. Across both outcomes and specifications, I find a concave relationship between vote share and BMP spending. That is, board members reward schools that provided greater electoral support in the previous election *to a point*. Indeed, the negative quadratic vote share coefficient suggests that the positive effect of vote share on BMP spending attenuates in substantive magnitude as vote share increases and reverses at especially high values of support. More concretely, the coefficients in Column (1) suggest that after 56.14% support, BMP spending decreases as voter support increases.[20]

Figure 2 uses the estimates from Column (1) in Table 1 and plots the predicted probability of receiving a BMP project across values of vote share from the minimum to maximum values in the data (15% to 100% at 1-point increments). The probabilities confirm that most of the increase in the likelihood of receiving a BMP project occurs as schools move from opposition schools to swing schools. Specifically, at 25% support, the model predicts a 6.7% chance of receiving a project. As vote share increases from 25% to 50% support, the likelihood of receiving BMP spending jumps to 10.7% ($p = 0.011$). Because the relationship between vote share and spending reverses after 56%, we even see no difference between core and opposition schools ($\Delta = 0.026$ and $p = 0.207$ when vote share is set to 75% vs. 25%).

time for each school, and the latter is time invariant.

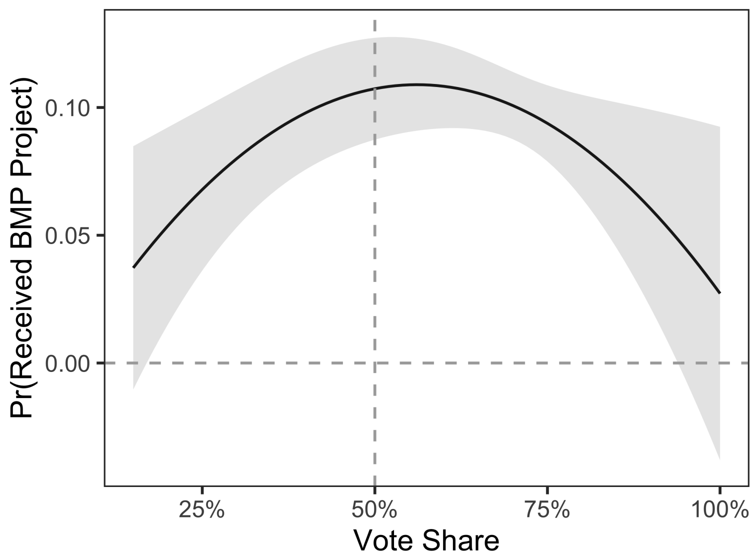
[20]Calculated by $(-0.0047603)/(2\times-.0000424)$.

Table 1: **Effects of Vote Share on BMP Spending**

	DV: Received BMP Project		*DV: asinh(BMP Amount)*	
	(1)	(2)	(3)	(4)
Vote Share	0.005**	0.005*	0.022**	0.021*
	(0.002)	(0.002)	(0.008)	(0.009)
Vote Share^2	-0.00004**	-0.00005*	-0.0002**	-0.0002*
	(0.00002)	(0.00002)	(0.0001)	(0.0001)
No Formula	-0.089**	-0.061+	-0.356**	-0.299*
	(0.031)	(0.034)	(0.128)	(0.142)
1 × asinh(Formula Amount)	-0.012**	-0.008+	-0.046**	-0.036+
	(0.004)	(0.005)	(0.017)	(0.019)
% White	0.0002	-0.001	0.0003	-0.001
	(0.001)	(0.003)	(0.002)	(0.013)
% Black	-0.001+	-0.002	-0.003	-0.004
	(0.001)	(0.003)	(0.002)	(0.016)
% Hispanic	0.0004	0.002	0.001	0.007
	(0.0004)	(0.002)	(0.002)	(0.010)
% English Learners	-0.0002	-0.001	-0.001	-0.002
	(0.0003)	(0.001)	(0.002)	(0.004)
% Free/Reduced Lunch	-0.00002	0.001	0.0004	0.006+
	(0.001)	(0.001)	(0.002)	(0.003)
Zone Resident	0.046+	0.042	0.132	0.137
	(0.025)	(0.026)	(0.097)	(0.111)
Zone Neighbor	0.0001	0.001	-0.011	0.0004
	(0.012)	(0.019)	(0.051)	(0.079)
School Age	0.001**		0.005**	
	(0.0004)		(0.002)	
School Age^2	-0.00001**		-0.00004**	
	(0.000003)		(0.00001)	
High School	-0.016		-0.098	
	(0.015)		(0.062)	
Middle School	-0.032**		-0.146**	
	(0.011)		(0.049)	
District-Election FE	✓	✗	✓	✗
School FE	✗	✓	✗	✓
School Year FE	✓	✗	✓	✗
District-School Year FE	✗	✓	✗	✓
Observations	4,844	4,844	4,844	4,844
R^2	0.107	0.290	0.086	0.248

Notes: Standard errors clustered by school-election. $^+p<0.10$; $^*p<0.05$; $^{**}p<0.01$

Figure 2: **Probability of Receiving BMP Spending by Vote Share**



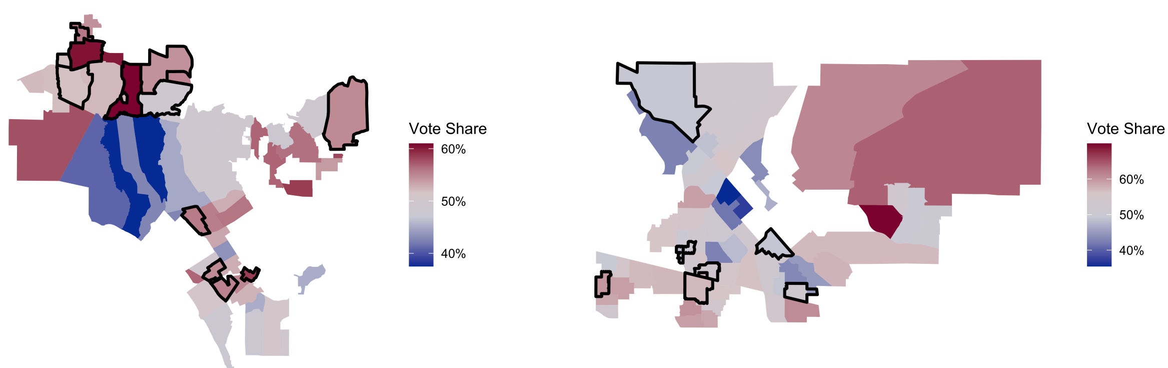
We can observe these patterns in specific districts.[21] Figure 3 maps BMP allocations to elementary schools by two board members, Steve Zimmer in District 4 from 2013-2017 and Kelly Gonez in District 6 from 2017-2020. Schools are shaded from blue to red by their level of support for the board member, and schools receiving at least one BMP project from the board member have a black border. The maps show that Zimmer excluded schools in opposition neighborhoods of his district. Strikingly, over his entire four-year term in office, *none* of the five elementary schools in neighborhoods where Zimmer lost by more than 10 percentage points received BMP money. Likewise, Gonez focused BMP spending on elementary schools in the most competitive neighborhoods of her district, while the most opposed and supportive areas were excluded.

The results support the claim that school board members invest in some schools and students more than others as a function of electoral incentives, leading to within-district inequalities in spending. In particular, students who attend schools in neighborhoods where school board members can either gain support among pivotal voters or shore-up existing support are prioritized and

[21] I repeat the pooled analysis in Column 1 of Table 1 19 times, leaving out one district-election each time. The results are presented in Figure A4. This analysis shows that it is not the case that only one or two aggressively strategic and electorally-minded board members drive the aggregate results.

rewarded — with new laptops, new classroom furniture, and new playground equipment.[22] In contrast, those students attending schools in overwhelmingly opposed or supportive areas are excluded, relatively speaking. This suggests that school board members ignore those areas where spending may have limited electoral impact. They seem to recognize that opposition strongholds are "gone" — no amount of spending is going to turn them into supporters. In a similar way, the most ardent supporters who nearly universally support the board member are also excluded, perhaps because school board members see diminishing returns to spending: in core neighborhoods, there is little to gain in terms of additional votes. Based on the estimates, it appears that board members see a margin of 10% as safe enough such that they no longer see investing in these areas as electorally necessary or beneficial.

Figure 3: **Examples of Findings: Steve Zimmer (BD4) and Kelly Gonez (BD6)**



(a) District 4, Elementary Schools, 2013-2017

(b) District 6, Elementary Schools, 2017-2020

Table 1 also reveals mixed evidence that school needs drive spending patterns. On the one hand, demographic characteristics appear to have no influence whatsoever: along race and economic status, school board members are no more likely to support the most disadvantaged schools in their district than they are the most advantaged.[23] Board members do, however, focus on older

[22]Scholars have also argued that turnout can influence the distribution of government resources (Martin 2003), though effects may also depend on voter turnout (Cox 2010; Dynes 2020; Nichter 2008). Table A2 replicates Table 1 but includes turnout (the share of votes cast as a share of registered voters) as an additional regressor, while Table A3 also includes an interaction between turnout and vote share. I find no direct effects of turnout, but schools in high turnout opposition neighborhoods appear least likely to receive BMP spending (see Figure A3).

[23]I also estimate models replacing the three race/ethnicity variables with the percentage of students that are the same

schools, though the impact of school age is non-linear such that the likelihood of receiving a project decreases after 67 years old. The size of the effect of school age is notably much smaller than that of vote share. The estimates in Column 1 suggest that a two standard deviation change in school age from the minimum to maximum value in the data (0 to 73 years) increases the likelihood of receiving a project by 4 percentage points. In contrast, the same two standard deviation change in vote share (from 15% to 56%) increases the probability of receiving a project by 7.2 percentage points. Finally, there is some evidence that board members "filled in gaps" in spending as intended. They appear to have focused primarily on those schools also benefitting from the formula funds, conceivably because the formula is unable to address *every* pressing need in the district's most dilapidated schools. Accordingly, conditional on having received formula dollars, formula money is negatively related to BMP money. That is, board members focused on formula-funded schools that received the least amount of money.

The results presented thus far aggregate across time and electoral contexts. Next, I explore heterogeneity in the effects of electoral incentives on the allocation of BMP spending by (1) the electoral calendar; and (2) election timing. Though suggestive, these analyses speak to *why* board members behave the way that they do and how they perceive school spending translating into votes. As discussed, spending has gradual effects on student performance and consequently home values, such that positive effects are only observable after four years. Thus, if board members are trying to improve observable conditions in time for the next election, they would likely distribute money to politically-valuable neighborhoods well in advance of the next election. Conversely, if board members believe that they will rewarded simply for investing in schools, they would likely focus on election-year investments that myopic voters may be most cognizant of.

Table 2 replicates the main analysis using Equation 1 but includes an interaction between vote share with the number of years till the board member's next election.[24] The coefficients on the interaction terms can be interpreted as the effects of vote share on allocative decisions in the given

race or ethnicity as the incumbent school board members. These results are in Table A4. Board members do not direct funds to co-racial/co-ethnic students.

[24]The direct effects of the number of years to the next election were estimated but excluded from Table 2 to preserve space.

Table 2: **Effects of Vote Share on BMP Spending by Years to Next Election**

	DV: Received BMP Project	*DV: asinh(BMP Amount)*
	(1)	(2)
Vote Share	-0.001	-0.004
	(0.003)	(0.016)
Vote Share^2	-0.00001	-0.00003
	(0.00003)	(0.0001)
Vote Share × 1	0.003	0.013
	(0.003)	(0.015)
Vote Share^2 × 1	-0.000003	-0.00001
	(0.00002)	(0.0001)
Vote Share × 2	0.003	0.016
	(0.004)	(0.019)
Vote Share^2 × 2	-0.00002	-0.0001
	(0.00003)	(0.0001)
Vote Share × 3	0.011**	0.052**
	(0.004)	(0.018)
Vote Share^2 × 3	-0.0001*	-0.0003*
	(0.00003)	(0.0001)
Vote Share × 4	0.018***	0.069***
	(0.004)	(0.019)
Vote Share^2 × 4	-0.0001***	-0.0005***
	(0.00003)	(0.0001)
Controls	✓	✓
District-Election FE	✓	✓
School Year FE	✓	✓
Observations	4,844	4,844
R^2	0.129	0.101

Notes: Standard errors clustered by school-election.*p<0.05; **p<0.01; ***p<0.001

number of years away from the election, relative to the effects of vote share in the election year. The effects of vote share in the election year are given by the base terms for vote share. The estimates suggest that board members do not appear to pursue electorally-motivated spending strategies just prior to the election: in the election year and in the year just prior, there is no relationship between election returns and BMP spending. Instead, the general patterns of strategic distribution are concentrated three and four years prior to the next election.

While these findings are most consistent with school board members using school spending to improve outcomes, they may not necessarily mean that board members are trying to improve *student* outcomes in politically-consequential neighborhoods, but rather home values. This behavior would be consistent with research suggesting that school board members are electorally incentivized to prioritize adults interests over students (Chubb and Moe 1990; Kogan 2022). The expressed and revealed priorities of school board members even reflect this view. In California, just 30% of school board members rank improving student learning as their first priority (Flavin and Hartney 2017). Similarly, the school board in Arlington, VA spent just 10% of their meeting time in 2021-2022 discussing student achievement (Arlington Parents for Education 2022).

My second analysis addresses this possibility by testing if the effects of electoral incentives on spending depend on whether the board member's *next* election will be held on- or off-cycle (see Anzia 2012 for a similar analysis). If board members are trying to win votes by improving student outcomes in particular neighborhoods, we should observe electoral effects primarily among members facing an on-cycle electorate, where more parents vote and where student performance affects voting behavior. As it happens, in 2015 LAUSD voters overwhelmingly approved a ballot measure to move LAUSD elections on-cycle beginning in 2020. Board members elected in 2015, 2017, and 2019 would therefore seek re-election on-cycle (with a presidential race also on the ballot), while those elected in 2009, 2011, and 2013 would run off-cycle again.

Table 3 shows that the effects of electoral incentives are concentrated among board members whose next election will be held on-cycle.[25] The results in Column (1) indicate that, in on-cycle

[25]The base effect of on-cycle elections is subsumed by the district-school year fixed effects.

Table 3: **Effects of Vote Share on BMP Spending by Election Timing**

	DV: Received BMP Project	*DV: asinh(BMP Amount)*
	(1)	(2)
Vote Share	0.001	0.005
	(0.002)	(0.009)
Vote Share^2	-0.000002	-0.00001
	(0.00002)	(0.0001)
Vote Share × On-Cycle	0.009**	0.045**
	(0.003)	(0.014)
Vote Share^2 × On-Cycle	-0.0001***	-0.0005***
	(0.00003)	(0.0001)
Controls	✓	✓
District-Election FE	✓	✓
School Year FE	✓	✓
Observations	4,844	4,844
R^2	0.108	0.088

Notes: Standard errors clustered by school-election.**p<0.01; ***p<0.001

elections, shifting from 25% to 50% support increases the likelihood of receiving at least one BMP project by just over 7 percentage points (p = 0.001). All told, these results — coupled with those in Table 2 — suggest that board members appear to be using spending to improve outcomes, and especially to improve (some) student outcomes, as a way to win votes.[26] Of course, these patterns are only suggestive of board member motivations. Moreover, we cannot conclude from this study that the decisions of these boards members actually did improve student learning outcomes. These limitations aside, the findings shed some light on when school board members may be most susceptible to distributive politics.

[26]I also disaggregate the results into the four BMP spending categories used in Figure A2. These results are in Table A5. I find that voting patterns mostly strongly predict the allocation of technology spending (e.g., new laptops for students and SMART Boards for classrooms). Of all types of BMP spending, technology spending most directly deals with classroom instruction and student learning.

Falsification Test: LAUSD Local District Priority Projects

I also conducted a falsification test using spending data that should be unaffected by voting patterns. The LAUSD is divided into six local districts, which administer the policies and procedures set by the elected school board among schools in their specified geographic region. Each local district is managed by an unelected superintendent. Like board districts, each local district was also allocated a portion of bond money to use at their own discretion. Decisions about how to spend these funds are made independently of the school board by the local superintendent and other local district bureaucrats.[27]

Figure 4: **Probability of Receiving LDP Spending by Vote Share**

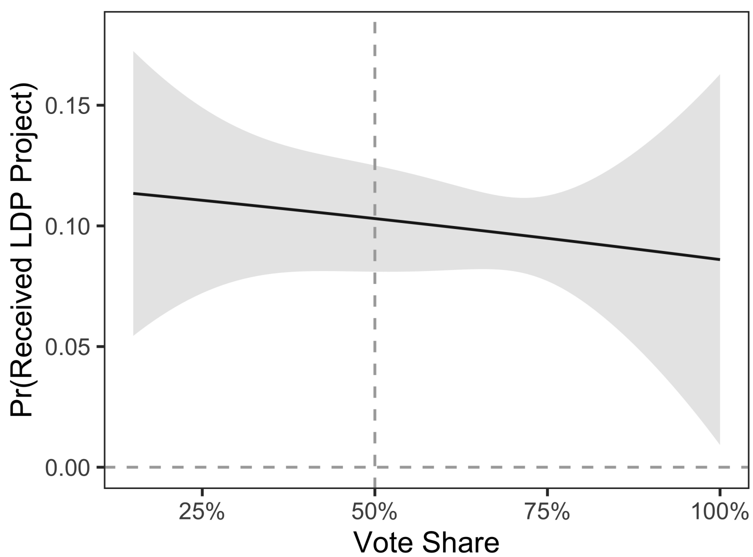


Figure 4 replicates Figure 2, but predicts LDP spending rather than BMP spending. As expected, there is no substantive or statistical relationship between support for the incumbent school board member and LDP spending. Moreover, I find a larger effect of school age on LDP allocations than BMP allocations (see the full regression results in Table A6). These null findings

[27]The LDP and BMP programs are remarkably comparable over the period under study. They distributed roughly the same amount of money ($19 million versus $16 million) and awarded the same number of projects (427 versus 407). They also addressed the same kinds of school needs as the BDP program (see Figure A5), and like the BMP program, most schools never any money at all: just 49% of schools received at least one LDP project over this time period. Figure A6 shows the distribution of LDP allocations by district and school year.

provide additional confidence that my analysis of the BMP program is picking up the effects of electoral incentives on spending, while also highlighting how greater control of school resources by unelected bureaucrats can potentially divorce school spending from politics and promote equity.

Discussion and Conclusion

Most of the education finance literature in the U.S has ignored — in part due to a lack of data — the critical role that locally-elected school boards play in allocating school resources among the schools in their district. While newly-available data suggest that intra-district spending disparities are common, few studies focus on exactly why some schools get more money than others. This paper shows that electoral incentives may be one reason why. Analyzing a large discretionary school modernization program in the second largest school system in the country, I find that local school board members funnel school resources toward schools located in competitive and moderately supportive areas of their district at the expense of those in solidly opposed and supportive neighborhoods. In this empirical setting, whether students have laptops, functional classroom furniture, access to high-speed internet, and attend a safe and secure school appears conditional on whether they live in an electorally-pivotal neighborhood.

To be clear, this paper should not be taken to mean that electoral considerations are the sole or even primary predictor of how local school boards allocate money. Even my results show that some need-based factors (i.e., school age) can matter. And as with any case study, one may question whether the findings are externally valid. To be sure, single-city studies are the norm in local politics research, typically because of data limitations. In my case, national school-level spending data is only recently available, and while precinct-level electoral returns are readily available in a city like Los Angeles, the same cannot be said for the vast majority of local jurisdictions. Nevertheless, discussions of generalizability are crucial for evaluating the the scope and significance of the analysis.

The biggest concern may be that the BMP program is not reflective of broader school spending. The BMP program is valuable as a test case because it affords a window into how school board members allocate spending when they have complete discretion over doing so. It offers a clean first-cut at assessing what factors lead to inequality within districts using data over a long time-series. The amount of money distributed through the program, though, pales in comparison to the amount of money that the district spends overall. If the patterns I report are confined to the BMP program, we may ultimately worry less about the degree to which politics affects governance. Using the early ESSA data, however, we can extend the analysis to total school spending. Table A7 estimates the effects of vote share on logged per capita school spending in the LAUSD using data from 2019-2020, the most recently available year of ESSA data within the period of my BMP analysis.[28] As with BMP spending, I find a concave relationship between votes and spending, where once again the greatest gains in spending are found moving from opposition to swing neighborhoods. While descriptive and limited to one academic year, these results give at least some reassurance that electoral considerations may also shape broader district budget debates and ultimately the allocation of school spending in the LAUSD more generally.

There is, however, a second kind of generalizability concern: LAUSD board members, and the LAUSD itself, may be an anomaly. As a result, the conclusions drawn may be limited to the LAUSD, BMP program or not. To be sure, the LAUSD is the second largest school district in the country, educating about 550,000 students and employing 25,000 teachers a year. In this way, how the LAUSD distributes resources is important in its own right. Still, the policy implications of the paper change if the findings do not travel beyond the LAUSD's borders. One reason the role of electoral incentives may be different outside of the LAUSD is because LAUSD officials could have greater incentive to get re-elected than the average school board member. For starters, LAUSD board members can earn up to $125,000 per year in salary if they are not employed elsewhere. In contrast, most local school board members receive no salary at all, meaning that losing re-election will have little material consequence. In addition, LAUSD board members are likely much closer to a "career politician" than most school board members, and winning re-election to the school

[28]See: `https://edunomicslab.org/nerds/`

board may help further consolidate a personal base of support that can form the foundation of a campaign for the City Council or state legislature.

The literature on municipal elected officials suggests that the uniqueness of LAUSD board members as political actors is unlikely to drive the results. Indeed, even unpaid local elected officials with low political ambition often want to stay in office because they are intrinsically-motivated by, among other things, a desire to positively impact their community (Lascher 1993; Sokolow 1989). In the end, they often behave in the same way as someone for whom politics is a career: in his experimental study, Dynes (2020) shows that ambitious municipal officials target swing voters with distributive spending to about the same degree as less ambitious officials. Having said that, the LAUSD itself may more easily facilitate the strategic distribution of school spending. The size of the district means that there is potentially more geographic variation in voting behavior, and more schools to either aid or exclude. A potential scope condition on these effects then is that they could be concentrated in larger districts. One feasible way to test this claim may be with a survey experiment of local school board members where officials are presented with two schools of varying political, economic, and demographic profiles, and are forced to choose one to receive more spending. Including board members from different types of districts in the sample would allow for tests of heterogeneity by jurisdiction size.

What policy reforms can address the distortion of school spending by politics and ensure equal educational opportunity? The results do not point toward abolishing school boards or ridding school governance of local democracy completely, as these reforms would likely bring about other negative consequences (Collins 2023). And reforming school board elections could make matters worse. One of the most commonly proposed reforms to K-12 governance is to move elections on-cycle to coincide with November presidential and midterm congressional elections (Blackwell 2022; Eden 2021; Hartney 2016; Kogan 2022). While on-cycle elections are thought to shift board members' attention toward student interests by increasing turnout among parents, I show a down-side to this: greater parental and student influence in elections appear to make local board members especially sensitive to electoral politics, which schools and students they invest in, and to how those choices might affect their ability to stay in office. One could interpret this finding with optimism. The fact that just 25% of school board elections are currently held on-cycle could limit the likelihood of similar politicking in other contexts. Another interpretation is that these results provide an additional consideration for those calling for reforms to school board election timing.

The results do signal, however, for greater attention to *how* local boards distribute resources. Currently, just 10% of students are served by local districts that use a weighted student-based funding formula to distribute money to schools. Rather than allocate positions and programs to schools, these districts allocate money to schools based on the characteristics of the student population (e.g., income level, racial/ethnic composition, etc.), which school administrators then spend autonomously. In effect, this approach weakens the discretionary power of school board members to prioritize some schools over others for political reasons. Importantly though, formula districts tend to allocate only about 30-50% of their funds using the formula, leaving the rest to be divided at the board's discretion. In addition, even formula funds may not be divorced from politics entirely. Scholars of congressional politics have demonstrated that elected officials can structure formulas to benefit their electoral pursuits, either by changing the inputs or the weight placed on each input (Rosenstiel 2022). At the very least, though, allocating more of the district budget pie via formula would improve transparency while reducing, even marginally, the potential for politically-motivated spending.

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Supplementary Appendix for "Inequality in the Classroom: Electoral Incentives and the Distribution of Local Education Spending"

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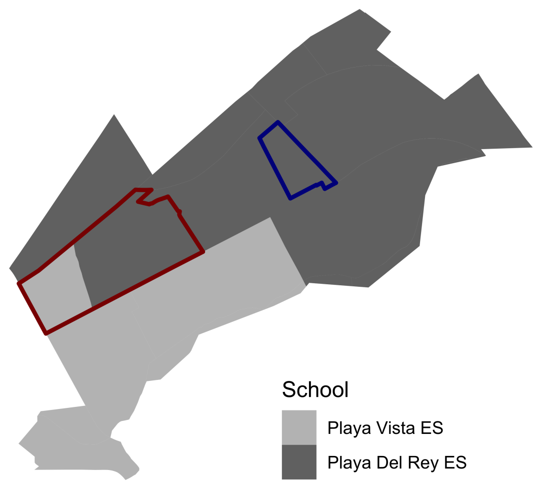


Figure A1 plots the attendance zones for two schools in Board District 4, Playa Vista Elementary School and Playa Del Rey Elementary School. Two precincts are used to illustrate the merging process. One precinct, outlined in blue, falls entirely within Playa Del Rey's attendance zone. Thus, all votes cast in that precinct are allocated to Playa Del Rey. Another (red border) is split across the two schools. Because about 70% of the precinct falls within Playa Del Rey's boundaries, 70% of each candidate's raw vote count in the precinct is allocated to Playa Del Rey with the remaining 30% allocated to Playa Vista.

Figure A2: **Share of BMP Projects and Funds by Project Type**

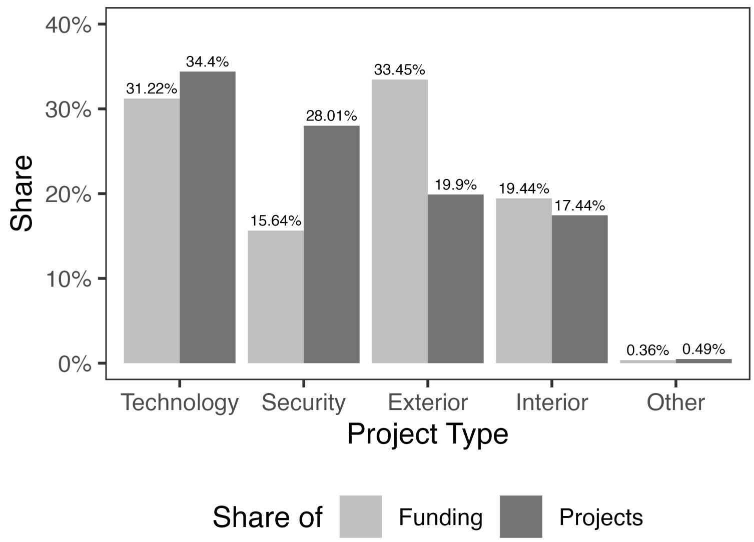


Table A1: **Effects of Vote Share on BMP Spending: Exclude Joint-Funded and Projects with Estimated Budgets**

	DV: Received BMP Project		*DV: asinh(BMP Amount)*	
	(1)	(2)	(3)	(4)
Vote Share	0.005**	0.005*	0.020**	0.022*
	(0.002)	(0.002)	(0.007)	(0.009)
Vote Share^2	-0.00004**	-0.00005*	-0.0002**	-0.0002*
	(0.00002)	(0.00002)	(0.0001)	(0.0001)
No Formula	-0.083**	-0.056+	-0.304*	-0.297*
	(0.031)	(0.033)	(0.125)	(0.135)
1 × asinh(Formula Amount)	-0.011**	-0.007	-0.037*	-0.034+
	(0.004)	(0.004)	(0.017)	(0.019)
% White	0.0003	-0.001	0.0002	0.005
	(0.001)	(0.003)	(0.002)	(0.013)
% Black	-0.001	-0.002	-0.002	0.004
	(0.001)	(0.003)	(0.002)	(0.015)
% Hispanic	0.0003	0.0004	0.001	-0.001
	(0.0004)	(0.002)	(0.002)	(0.010)
% English Learners	-0.0001	-0.001	0.001	-0.002
	(0.0003)	(0.001)	(0.001)	(0.004)
% Free/Reduced Lunch	0.0001	0.001	0.001	0.005
	(0.0005)	(0.001)	(0.002)	(0.003)
Zone Resident	0.026	0.011	0.058	-0.0003
	(0.023)	(0.024)	(0.089)	(0.104)
Zone Neighbor	0.001	0.003	-0.006	-0.002
	(0.012)	(0.019)	(0.049)	(0.075)
School Age	0.001**		0.005**	
	(0.0003)		(0.002)	
School Age^2	-0.00001**		-0.00003**	
	(0.000003)		(0.00001)	
High School	-0.017		-0.043	
	(0.014)		(0.056)	
Middle School	-0.031**		-0.077+	
	(0.010)		(0.046)	
District-Election FE	✓	✗	✓	✗
School FE	✗	✓	✗	✓
School Year FE	✓	✗	✓	✗
District-School Year FE	✗	✓	✗	✓
Observations	4,844	4,844	4,844	4,844
R^2	0.100	0.290	0.061	0.217

Notes: Standard errors clustered by school-election. $^+p<0.10$; $^*p<0.05$; $^{**}p<0.01$

Table A2: **Effects of Turnout on BMP Spending**

	DV: Received BMP Project		*DV: asinh(BMP Amount)*	
	(1)	(2)	(3)	(4)
Turnout	-0.001	0.00005	-0.002	0.006
	(0.001)	(0.002)	(0.004)	(0.009)
Vote Share	0.005^{**}	0.005^{*}	0.023^{**}	0.020^{*}
	(0.002)	(0.002)	(0.008)	(0.009)
Vote Share^2	-0.00005^{**}	-0.00005^{*}	-0.0002^{**}	-0.0002^{*}
	(0.00002)	(0.00002)	(0.0001)	(0.0001)
No Formula	-0.088^{**}	-0.061^{+}	-0.353^{**}	-0.299^{*}
	(0.031)	(0.034)	(0.129)	(0.142)
1 × asinh(Formula Amount)	-0.012^{**}	-0.008^{+}	-0.046^{**}	-0.036^{+}
	(0.004)	(0.005)	(0.017)	(0.019)
% White	0.0002	-0.001	0.0002	-0.002
	(0.001)	(0.003)	(0.002)	(0.013)
% Black	-0.001^{+}	-0.002	-0.003	-0.004
	(0.001)	(0.003)	(0.002)	(0.016)
% Hispanic	0.0003	0.002	0.001	0.007
	(0.0004)	(0.002)	(0.002)	(0.011)
% English Learners	-0.0002	-0.001	-0.001	-0.002
	(0.0003)	(0.001)	(0.002)	(0.004)
% Free/Reduced Lunch	-0.00005	0.001	0.0003	0.006^{+}
	(0.001)	(0.001)	(0.002)	(0.003)
Zone Resident	0.047^{+}	0.042	0.136	0.141
	(0.025)	(0.026)	(0.097)	(0.111)
Zone Neighbor	0.0004	0.001	-0.010	0.006
	(0.012)	(0.019)	(0.051)	(0.079)
School Age	0.001^{**}		0.005^{**}	
	(0.0004)		(0.002)	
School Age^2	-0.00001^{**}		-0.00004^{**}	
	(0.000003)		(0.00001)	
High School	-0.017		-0.100	
	(0.015)		(0.062)	
Middle School	-0.033^{**}		-0.147^{**}	
	(0.011)		(0.049)	
District-Election FE	✓	✗	✓	✗
School FE	✗	✓	✗	✓
School Year FE	✓	✗	✓	✗
District-School Year FE	✗	✓	✗	✓
Observations	4,844	4,844	4,844	4,844
R^2	0.107	0.290	0.086	0.248

Notes: Standard errors clustered by school-election. $^{+}p<0.10$; $^{*}p<0.05$; $^{**}p<0.01$

Table A3: **Interactive Effects of Vote Share and Turnout on BMP Spending**

	DV: Received BMP Project		*DV: asinh(BMP Amount)*	
	(1)	(2)	(3)	(4)
Vote Share	0.0003	-0.001	0.001	-0.009
	(0.003)	(0.003)	(0.014)	(0.014)
Vote Share^2	-0.00002	-0.00002	-0.0001	-0.00004
	(0.00003)	(0.00003)	(0.0001)	(0.0001)
Turnout	-0.017**	-0.019**	-0.076**	-0.094**
	(0.006)	(0.007)	(0.029)	(0.031)
Vote Share × Turnout	0.0004*	0.0005*	0.002*	0.003**
	(0.0002)	(0.0002)	(0.001)	(0.001)
Vote Share^2 × Turnout	-0.000002	-0.000003	-0.00001	-0.00002*
	(0.000002)	(0.000002)	(0.00001)	(0.00001)
No Formula	-0.089**	-0.060+	-0.349**	-0.295*
	(0.031)	(0.034)	(0.129)	(0.142)
1 × asinh(Formula Amount)	-0.012**	-0.008+	-0.045**	-0.035+
	(0.004)	(0.005)	(0.017)	(0.019)
% White	0.0003	-0.002	0.001	-0.003
	(0.001)	(0.003)	(0.002)	(0.013)
% Black	-0.001+	-0.002	-0.003	-0.002
	(0.001)	(0.003)	(0.002)	(0.016)
% Hispanic	0.0004	0.002	0.001	0.006
	(0.0004)	(0.002)	(0.002)	(0.011)
% English Learners	-0.0003	-0.001	-0.001	-0.002
	(0.0003)	(0.001)	(0.002)	(0.004)
% Free/Reduced Lunch	-0.0001	0.001	0.0001	0.006+
	(0.001)	(0.001)	(0.002)	(0.003)
Zone Resident	0.042+	0.031	0.108	0.086
	(0.025)	(0.026)	(0.098)	(0.113)
Zone Neighbor	0.0003	-0.004	-0.011	-0.019
	(0.012)	(0.019)	(0.050)	(0.079)
School Age	0.001**		0.006**	
	(0.0004)		(0.002)	
School Age^2	-0.00001**		-0.00004**	
	(0.000002)		(0.00001)	
High School	-0.017		-0.099	
	(0.015)		(0.062)	
Middle School	-0.033**		-0.148**	
	(0.011)		(0.048)	
District-Election FE	✓	✗	✓	✗
School FE	✗	✓	✗	✓
School Year FE	✓	✗	✓	✗
District-School Year FE	✗	✓	✗	✓
Observations	4,844	4,844	4,844	4,844
R^2	0.108	0.292	0.088	0.249

Notes: Standard errors clustered by school-election. $^+p<0.10$; $^*p<0.05$; $^{**}p<0.01$

Figure A3: **Probability of Receiving BMP Spending by Vote Share and Turnout**

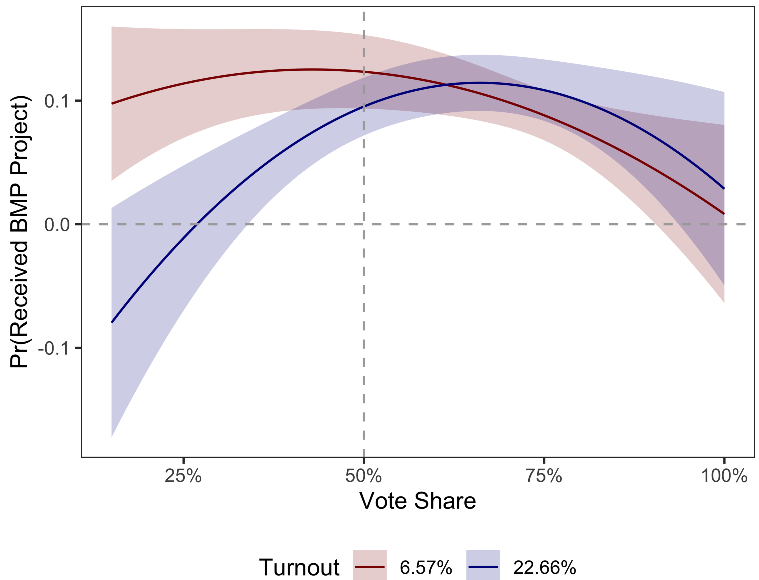
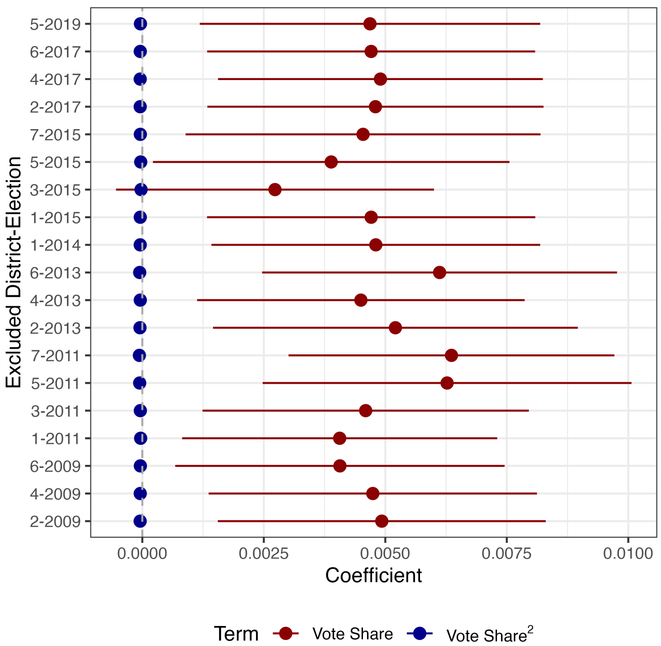
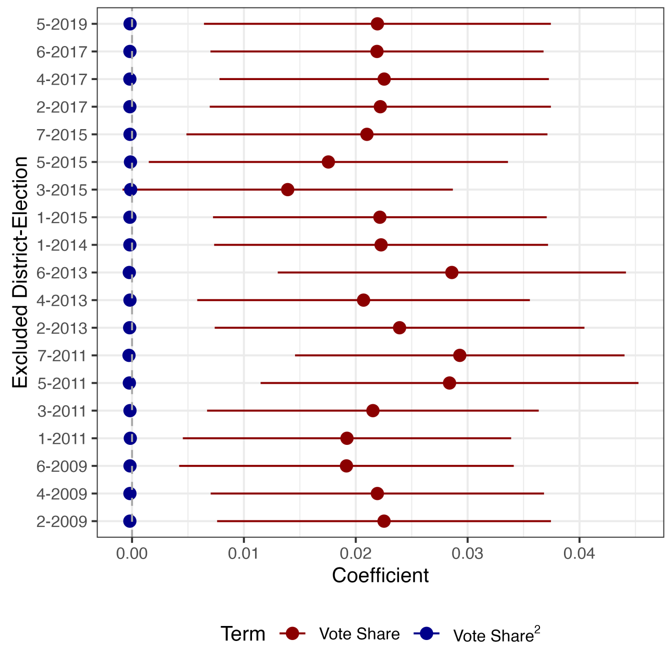


Figure A4: **Effects of Vote Share on BMP Spending: "Leave-One-Out"**



(a) DV: Received BMP Project



(b) DV: ln(BMP Amount + 1)

Table A4: **Effects of Vote Share on BMP Spending: Control for Share of Co-Racial/Ethnic Students**

	DV: Received BMP Project		*DV: ln(BMP Amount + 1)*	
	(1)	(2)	(3)	(4)
Vote Share	0.005^{**}	0.005^{*}	0.023^{**}	0.020^{*}
	(0.002)	(0.002)	(0.007)	(0.009)
Vote Share^2	-0.00004^{**}	-0.00004^{*}	-0.0002^{**}	-0.0002^{*}
	(0.00002)	(0.00002)	(0.0001)	(0.0001)
No Formula	-0.091^{**}	-0.061^{+}	-0.362^{**}	-0.299^{*}
	(0.031)	(0.034)	(0.129)	(0.142)
1 × asinh(Formula Amount)	-0.012^{**}	-0.008^{+}	-0.047^{**}	-0.036^{+}
	(0.004)	(0.005)	(0.018)	(0.019)
% Co-Racial/Ethnic	0.0002	-0.001	0.001	-0.005
	(0.0002)	(0.0004)	(0.001)	(0.002)
% English Learners	0.0002	-0.0004	0.001	-0.001
	(0.0003)	(0.001)	(0.001)	(0.004)
% Free/Reduced Lunch	0.00004	0.001	0.001	0.007^{*}
	(0.0003)	(0.001)	(0.001)	(0.003)
Zone Resident	0.046^{+}	0.035	0.133	0.107
	(0.025)	(0.027)	(0.098)	(0.115)
Zone Neighbor	0.003	0.001	-0.002	-0.002
	(0.012)	(0.019)	(0.052)	(0.079)
School Age	0.001^{**}		0.005^{**}	
	(0.0004)		(0.002)	
School Age^2	-0.00001^{**}		-0.00004^{**}	
	(0.000003)		(0.00001)	
High School	-0.009		-0.072	
	(0.015)		(0.062)	
Middle School	-0.027^{*}		-0.125^{**}	
	(0.011)		(0.048)	
District-Election FE	✓	✗	✓	✗
School FE	✗	✓	✗	✓
School Year FE	✓	✗	✓	✗
District-School Year FE	✗	✓	✗	✓
Observations	4,844	4,844	4,844	4,844
R^2	0.105	0.291	0.086	0.248

Notes: Standard errors clustered by school-election. $^{+}p<0.10$; $^{*}p<0.05$; $^{**}p<0.01$;

Table A5: **Effects of Vote Share on BMP Spending by Project Type**

	DV: Received BMP Project				*DV: asinh(BMP Amount)*			
	Tech.	**Security**	**Exterior**	**Interior**	**Tech.**	**Security**	**Exterior**	**Interior**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Vote Share	0.004***	0.00002	-0.0001	0.001	0.018***	0.0003	0.0004	0.004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.005)	(0.004)	(0.004)	(0.003)
Vote Share^2	-0.00004**	-0.000001	0.000003	-0.00001	-0.0002***	-0.00001	0.00001	-0.00003
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00005)	(0.00003)	(0.00004)	(0.00003)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
District-Election FE	✓	✓	✓	✓	✓	✓	✓	✓
School Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	4,844	4,844	4,844	4,844	4,844	4,844	4,844	4,844
R^2	0.063	0.125	0.029	0.034	0.57	0.076	0.030	0.035

Notes: Standard errors clustered by school-election. **p<0.01; ***p<0.001

Figure A5: **Share of LDP Projects and Funds by Project Type**

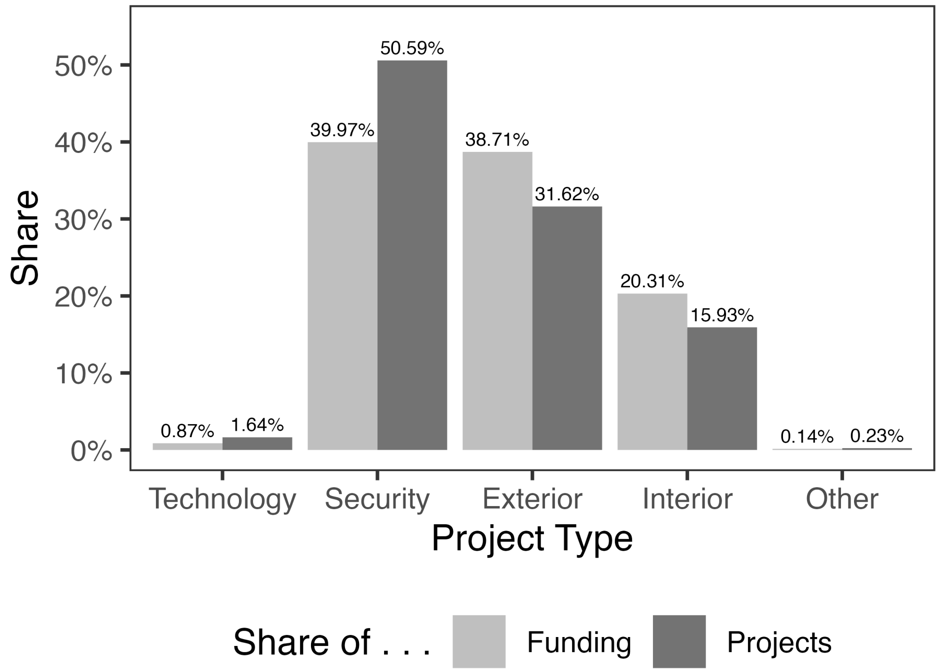
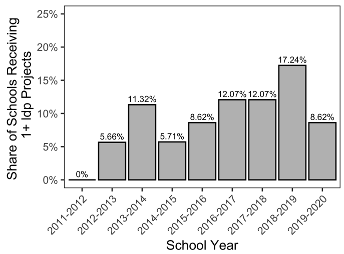
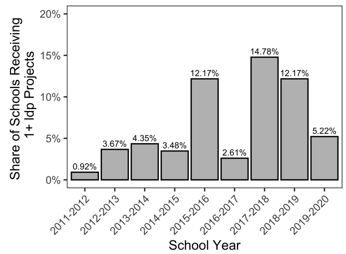


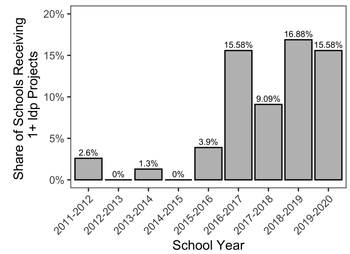
Figure A6: **Share of Schools Receiving LDP Projects by District and School Year**



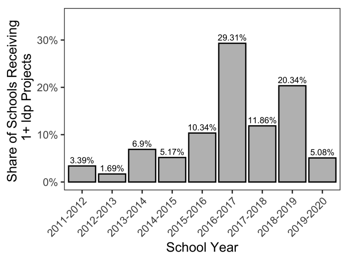
(a) District 1



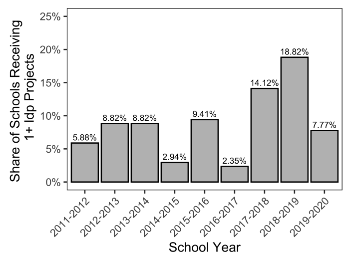
(b) District 2



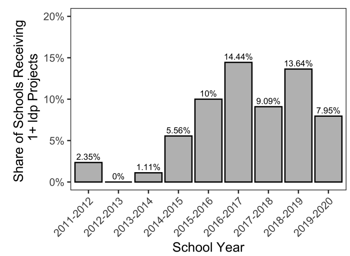
(c) District 3



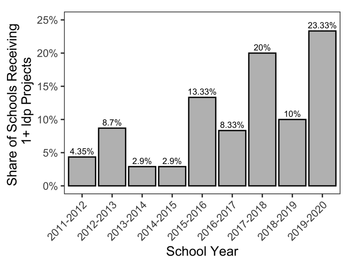
(d) District 4



(e) District 5



(f) District 6



(g) District 7

Table A6: **Effects of Vote Share on LDP Spending**

	DV: Received LDP Project		*DV: asinh(LDP Amount)*	
	(1)	(2)	(3)	(4)
Vote Share	-0.0003	-0.001	0.003	-0.004
	(0.002)	(0.002)	(0.009)	(0.011)
Vote Share^2	-0.0000005	0.00001	-0.00003	0.00005
	(0.00002)	(0.00002)	(0.0001)	(0.0001)
No Formula	-0.017	-0.015	-0.063	-0.066
	(0.029)	(0.032)	(0.140)	(0.149)
1 × asinh(Formula Amount)	-0.0002	-0.0004	0.004	0.0003
	(0.004)	(0.005)	(0.020)	(0.022)
% White	-0.0002	0.001	-0.001	0.006
	(0.001)	(0.003)	(0.003)	(0.016)
% Black	0.001	-0.003	0.003	-0.022
	(0.001)	(0.004)	(0.003)	(0.021)
% Hispanic	0.001^{+}	-0.001	0.004^{+}	-0.004
	(0.0005)	(0.003)	(0.002)	(0.013)
% English Learners	0.0003	-0.001	0.001	-0.008
	(0.0004)	(0.001)	(0.002)	(0.005)
% Free/Reduced Lunch	-0.001*	-0.001	-0.005*	-0.003
	(0.001)	(0.001)	(0.003)	(0.004)
Zone Resident	0.014	0.058**	0.019	0.261**
	(0.024)	(0.021)	(0.102)	(0.095)
Zone Neighbor	-0.025*	-0.002	-0.128**	-0.027
	(0.010)	(0.016)	(0.049)	(0.078)
School Age	0.002***		0.008***	
	(0.0004)		(0.002)	
School Age^2	-0.00001***		-0.0001***	
	(0.000003)		(0.00002)	
High School	-0.006		-0.092	
	(0.016)		(0.072)	
Middle School	-0.029*		-0.179**	
	(0.012)		(0.059)	
District-Election FE	✓	✗	✓	✗
School FE	✗	✓	✗	✓
School Year FE	✓	✗	✓	✗
District-School Year FE	✗	✓	✗	✓
Observations	4,844	4,844	4,844	4,844
R^2	0.040	0.156	0.042	0.158

Notes: Standard errors clustered by school-election. $^{+}$p<0.10; *p<0.05; **p<0.01; ***p<0.001

Table A7: **Effects of Vote Share on LAUSD School Spending, 2019-2020**

	DV: log(Spending)
	(1)
Vote Share	0.005*
	(0.002)
Vote $Share^2$	-0.00003+
	(0.00002)
% White	0.0001
	(0.001)
% Black	0.003**
	(0.001)
% Hispanic	0.0004
	(0.001)
% English Learners	0.001
	(0.001)
% Free/Reduced Lunch	0.002+
	(0.001)
Zone Resident	-0.002
	(0.051)
Zone Neighbor	-0.001
	(0.022)
School Age	-0.0004
	(0.001)
School Age^2	0.00001
	(0.00001)
High School	-0.051*
	(0.025)
Middle School	-0.041+
	(0.024)
Observations	560
R^2	0.205

Notes: Standard errors clustered by school. $^+p<0.10$; $^*p<0.05$; $^{**}p<0.01$