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EdWorkingPaper No. 20-196

The Democratic Deficit in U.S. Education Governance

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Political scientists have largely overlooked the democratic challenges inherent in the governance of U.S. public education—despite profound implications for educational delivery and, ultimately, social mobility and economic growth. In this study, we consider whether the interests of adult voters who elect school boards in each community are likely to be aligned with the educational needs of local students. Specifically, we compare voters and students in four states on several policy-relevant dimensions. Using official voter turnout records and rich microtargeting data, we document considerable demographic differences between voters who participate in school board elections and the students attending the schools that boards oversee. These gaps are most pronounced in majority nonwhite jurisdictions and school districts with the largest racial achievement gaps. Our novel analysis provides important context for understanding the political pressures facing school boards and their likely role in perpetuating educational and, ultimately, societal inequality.

VERSION: January 2021

Suggested citation: Kogan, Vladimir, Stéphane Lavertu, and Zachary Peskowitz. (2021). The Democratic Deficit in U.S. Education Governance. (EdWorkingPaper: 21-196). Retrieved from Annenberg Institute at Brown University: https://doi.org/10.26300/2dqg-w009

The Democratic Deficit in U.S. Education Governance*

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December 30, 2020

*The Spencer Foundation supported this research with a Lyle Spencer Research Award (#201600072). We are grateful to Craig Burnett, Deven Carlson, Katie Einstein and Stephen Ross for their helpful comments on earlier drafts of the manuscript. Peskowitz thanks the Hoover Institution for supporting his research as a W. Glenn Campbell and Rita Ricardo-Campbell National Fellow and Starr Foundation Fellow.

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Abstract

Political scientists have largely overlooked the democratic challenges inherent in the governance of U.S. public education—despite profound implications for educational delivery and, ultimately, social mobility and economic growth. In this study, we consider whether the interests of adult voters who elect school boards in each community are likely to be aligned with the educational needs of local students. Specifically, we compare voters and students in four states on several policy-relevant dimensions. Using official voter turnout records and rich microtargeting data, we document considerable demographic differences between voters who participate in school board elections and the students attending the schools that boards oversee. These gaps are most pronounced in majority nonwhite jurisdictions and school districts with the largest racial achievement gaps. Our novel analysis provides important context for understanding the political pressures facing school boards and their likely role in perpetuating educational and, ultimately, societal inequality.

Keywords: K-12 governance, school board elections, achievement gaps

Word Count: 3,996

V.O. Key recognized more than 70 years ago that "politicians and officials are under no compulsion to pay much heed to classes and groups of citizens who do not vote" (1949, p. 527). This insight motivates the empirical literature on political participation and efforts to narrow gaps in turnout (Lijphart 1997). Yet, political scientists have largely overlooked the dynamics of democratic representation in the context of U.S. public education. America's schools are governed by 13,500 independent school districts that exercise considerable discretion over matters such as budgeting, staffing, curriculum, student discipline, and school attendance boundaries. In most districts, such policies are set by elected school boards and have profound implications for educational delivery and, ultimately, social mobility and economic growth (Chetty and Hendren 2018, Hanushek and Woessmann 2015).

What makes school governance unique is that the primary beneficiaries—school children—typically do not get to vote (Chubb and Moe 1990). Of course, parents participate in local elections and even childless voters have a stake in public education (Fischel 2005), but the incentives facing elected officials depend critically on the extent to which adults who vote in school board elections have children's educational interests in mind. For example, there is evidence that older and childless voters are reluctant to raise taxes to fund investments in public education—especially when the school-aged population looks quite different (in terms of race or ethnicity) than the electorate (e.g., see Brunner and Johnson 2016). Indeed, school tax referenda considered during off-cycle elections—when older and childless voters constitute a large share of voters relative to parents and racial minorities—are typically far more likely to fail (Kogan, Lavertu and Peskowitz 2018). In his classic study of New Haven, Dahl (1961) warned that high rates of private school enrollment in wealthier neighborhoods "generates latent opposition to increasing the outlays on public schools" and potentially lower expectations for educational excellence (p. 146). Tax rates, however, represent only one policy lever through which voters can influence local education.

The decision to delegate oversight of public schools in America to locally elected school boards is largely a historical accident. The Massachusetts Bay Colony tasked townships with providing public education in the 1600s (Danzberger 1992). When other colonies (and later, states) set up their own school systems, they borrowed heavily from Massachusetts. At various points in American history, however, education reformers recognized that this arrangement sometimes failed to serve the interests of students. The shift from one-room schoolhouses to larger grade-based schools in the first half of the 20th century led to substantial district consolidation—from over 200,000 school districts in 1910 to fewer than 20,000 by 1970—and a consequent loss of local control. During this period, school boards also increasingly ceded authority to oversee day-to-day school operations to professionally trained superintendents and teacher tenure and licensure laws curtailed the allocation of teaching jobs as political patronage. These reforms arguably contributed to the historic gains in educational attainment that were realized in the subsequent decades (Tyack 1974).

Today, America's education system faces potentially significant representational challenges that earlier waves of governance reform left unaddressed. For example, since 2014, racial and ethnic minorities have made up the majority of America's public school enrollments, with the white share projected to continue shrinking in the coming years. However, more than 80 percent of school board members remain white (Hess and Meeks 2010) and American schools have made only modest progress in closing sizeable racial achievement gaps. In this letter, we consider whether local democracy may exacerbate such educational and representational inequities. Specifically, we provide the first systematic examination of the voters who participate in local school board elections and assess how representative these electorates are of local student bodies. Our analysis combines two sources of administrative data—official voter files and information about the composition and achievement of students attending public schools in four states—to document a sharp demographic discon-

nect between the students public schools educate and the voters who select their governing boards.

We document three important patterns. First, the majority of voters who cast ballots in school board elections do not actually have children who attend local schools. Second, the voters in these elections often look very different from the students these schools serve. We show that the gap is most pronounced in terms of race and ethnicity, with majority-white electorates determining the outcome of school board elections in more than two-thirds of the majority-nonwhite school districts in our sample. Third, and perhaps most worrying, the magnitude of the representational gap is associated with disparities in student achievement. Specifically, the achievement gap between white and nonwhite students tends to be larger in districts where the electorate looks most dissimilar from the student population. Although we do not argue that these correlations are causal, they suggest that school board members likely face the least political pressure to close racial achievement gaps in precisely the districts where these gaps are largest. These results may help explain why many school board members report that voters do not hold them accountable for taking steps to narrow the gaps (Flavin and Hartney 2017). Overall, our findings suggest that local democratic processes may be ill equipped to serve the educational interests of many public school students.

Data Sources

To identify voters participating in local school board elections, we use validated turnout from official voter files. We obtained this information from Catalist, a national microtargeting vendor that works primarily with political campaigns.

We focus specifically on California, Illinois, Ohio, and Oklahoma, four large states with numerous school districts and, crucially, significant racial variation in the composition of

students. In the latter three states, local school board elections are held on uniform off-cycle dates, and we identify the individuals recorded as having voted on these dates. In California, school board election timing varies considerably across and within districts, so we identify the dates relevant for each district using election results maintained by the California Election Data Archive.

We also take advantage of additional demographic information recorded in the Catalist database. Specifically, we observe the predicted race of each voter, estimated using a Bayesian procedure that combines Census racial surname distributions with the demographic composition of the Census block in which each voter resides. This procedure is widely used by empirical researchers for similar applications (Imai and Khanna 2016) and has a 90 percent accuracy rate, according to several validation studies. While we feature the Catalist estimates in our analysis, we show in the Supplemental Appendix that even the most conservative adjustments for measurement error do not affect our key results. In addition, for each voter, we observe the estimated family income and the likelihood that at least one child under the age of 18 lives in the household. These variables were sourced from InfoUSA, a major vendor of consumer data.

The Catalist records are most complete starting in 2008, so we limit our sample to elections held in each state between 2008 and 2016. We calculate the racial and income breakdown in the electorate as well as the proportion of voters who may have children for each election, and then we average these compositional measures across all election dates observed for each school district to obtain one observation per district. Catalist updates its records in real time, which means we observe the school district in which each voter currently resides, as opposed to the school district of residence at the time of each election. As we discuss in the Supplemental Appendix, however, measurement error due to voter migration is unlikely to affect our estimates.

Using these data, we construct voter composition measures for at least 70 percent of the school districts in each of our four states.[1] To obtain information on students attending local schools, we rely on records from the Stanford Education Data Archive (SEDA) (Reardon et al. 2017). This collection includes student demographic data for each district compiled from federal sources as well as achievement estimates based on test scores states reported to the U.S. Department of Education. In the data, we observe the racial composition of students in each school district as well as the share of students who qualify for free and reduced-price lunch, which we use as a proxy for socioeconomic status. When examining achievement gaps between racial subgroups, we are limited to districts with at least 20 students in each student subgroup. We present a variety of descriptive statistics in the Supplemental Appendix.

Results

In the sections that follow, we describe the composition of the electorate in each school district in terms of race and how many voters have children in the household. We also compare the racial demographics of students to the demographics of the electorate in each district. We then calculate the differences between voters and students and examine how these are associated with racial achievement gaps.

Child in Household

As we noted earlier, evidence suggests that parents may have different educational policy preferences than childless voters. While we cannot observe parental status directly, we do observe an important proxy—the probability that each voter has a child in the household.

[1] We drop California districts with ward elections from our sample. For Oklahoma, we also limit our sample to districts for which we observe election results because school board elections may be cancelled in cases where too few candidates run.

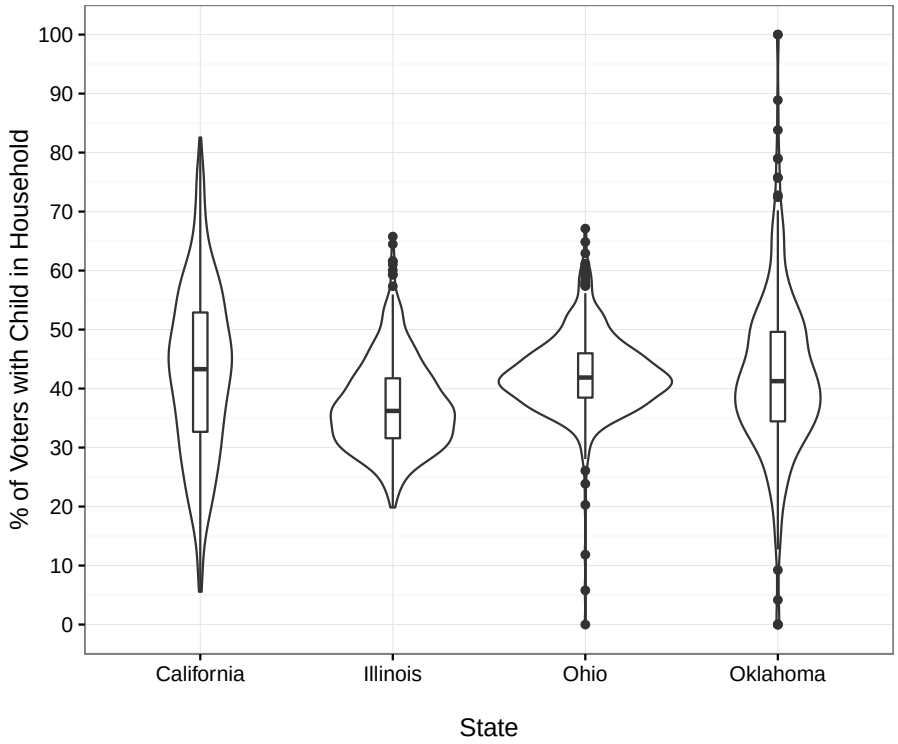


Figure 1: Percent of voters in each district whose likelihood of having a child is "possible" or "likely"

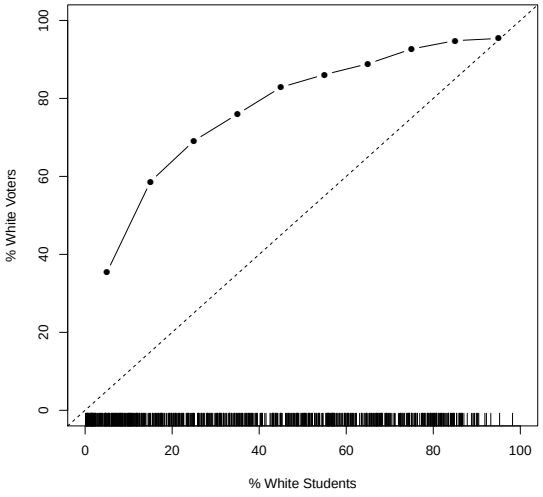
This probability is coded into one of three categories in the Catalist data: child "likely," "possible," and "unlikely." To err on the side of over-estimating the number of voters with children, we combine voters whose probability of having a child is classified as either "likely" or "possible" into a single category of potential parent-voters.

Figure 1 plots the distribution for the fraction of voters who fall into this combined category using violin plots. The plot for each state provides a visual representation of the distribution of observations, showing the median and interquartile range for the percent of voters in each district with children possibly present in the household, with a density plot overlayed on top. Strikingly, the figure shows that the majority of voters in a typical school board election in each of the four states we examine is "unlikely" to have children.

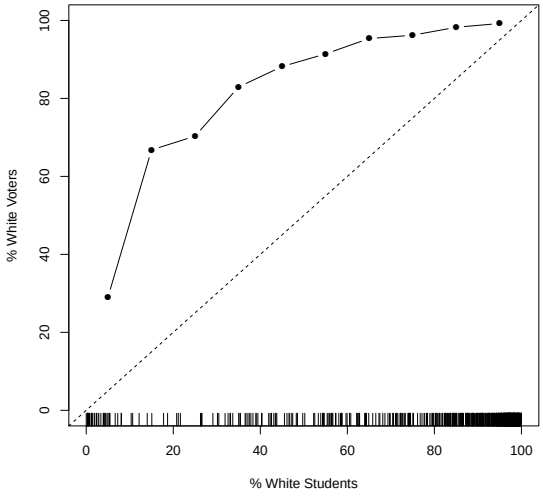
Voter Race

Of course, parents are not the only adults likely to have a significant personal stake in the performance of public schools, so the distributions in Figure 1 do not by themselves imply that voter and student interests are out of sync. We now turn to comparing and contrasting voters and students on other dimensions likely to be of particular consequence for local education policy. Race represents one such dimension, given the persistently high segregation of American schools. While much of the segregation is driven by racial disparities between school districts (Reardon, Yun and Eitle 2000), there is also evidence of considerable racial sorting within districts. Due both to high levels of housing segregation and intentional gerrymandering of school attendance boundaries, students of different races frequently attend different schools (Richards 2014). Because of the strong correlations between student race and school assignments, a systematic skew in the racial composition of the local electorate may have important downstream consequences (e.g., for how resources are allocated among school buildings within a district).

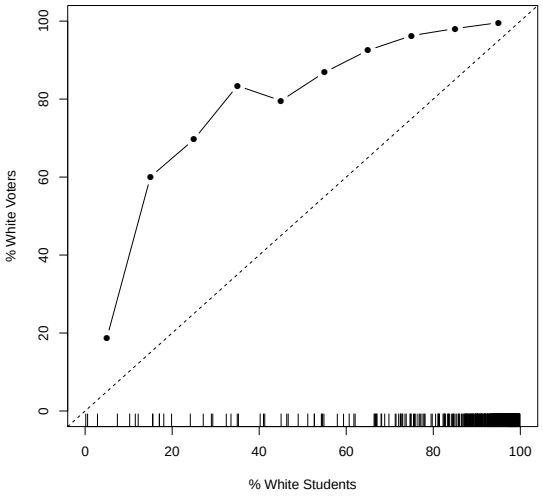
Figure 2 plots white students' share of overall enrollment in each school district on the x-axis against white voters' share of the electorate. The figure presents a binned scatter plot for each state, combining districts with similar student racial compositions and plotting the average voter composition for each group of districts on the y-axis. The bottom of each panel also includes a rug plot illustrating the distribution of student composition for the district sample in each state.



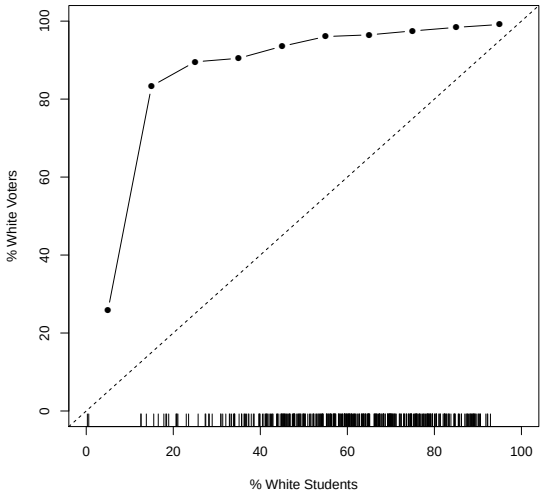
(a) California



(b) Illinois



(c) Ohio



(d) Oklahoma

Figure 2: Racial composition of school board electorate vs. students

Across all four states, the figure shows a pronounced racial incongruence, with a much whiter school board electorate than the corresponding student body. The magnitude of the skew is quite large—in each state, the electorate typically becomes majority-white when white student enrollment reaches just 20 percent of the district total. In Table 1 we focus on districts where the majority of students are nonwhite. Strikingly, we find that the typical electorate in these districts is, on average, at least 60 percent white. Indeed, at least two-thirds of the majority nonwhite districts in our sample are nevertheless governed by school boards chosen by majority-white electorates.

Table 1: Most majority-nonwhite school districts have majority-white electorates

	California	Illinois	Ohio	Oklahoma
Majority Nonwhite Districts	439	92	28	106
(% of all districts)	(58.8%)	(14.6%)	(5%)	(27.4%)
Average White Voter Share	59.2%	59.4%	63.7%	90.2%
White Voter Majority	68.4%	64.1%	78.6%	98.1%

We report comparable figures for socioeconomic status in the Supplemental Appendix.

Racial Achievement Gaps

If elected office holders respond to the preferences of the electorate, systematic political under-representation of some segments of the population could give rise to public policies that entrench inequities.

Given the over-representation of white voters in the electorate we document above, one area where these dynamics could prove consequential is in efforts to close academic achievement gaps between student subgroups. Although it is widely known that white students tend to out-perform their Black and Hispanic peers on average, recent research shows that racial achievement gaps vary considerably across geographic areas even after accounting for differences in economic resource disparities between groups (Reardon, Kalogrides and

Shores 2019).

In Figure 3 below, we examine whether the racial achievement gaps map onto representational shortfalls using California as an example. We continue to use a binned scatter plot for visual presentation, although the x-axis now corresponds to the shortfall in political participation—defined as the *difference* between the white share of the electorate and the white share of student enrollment. Thus, larger values correspond to a less representative voter population. On the y-axis, the figure plots the average white-Hispanic achievement gap for each district bin. We also overlay the predicted regression line, estimated using the raw (unbinned) data. The regression line has a significant positive slope, indicating that the gap between the achievement of white and Hispanic students is more pronounced in districts where white voters are most over-represented in the electorate.

While the figure depicts the simple bivariate relationships, we present full multivariate results in Table 2 that control for student socioeconomic status, student race, and district type. For each state, we also estimate specifications that include commuting zone fixed effects, essentially leveraging variation among geographically proximate school districts.[2] These additional controls do not change the substantive results, nor does the use of precision weights provided in the SEDA data. In each case, we find that increasing white over-representation in the electorate by one percentage point is associated with an increase in the white-Hispanic achievement gap on the order of between 0.005 and 0.01 standard deviations (although the effect is as large as 0.02 in Illinois in some specifications). We provide comparable estimates for the white-Black achievement gap in the Supplemental Appendix.[3]

These associations are substantively large. In the average California district, for exam-

[2]The table excludes Ohio because there are too few districts with a sufficient number of Hispanic students to be included in the SEDA data.

[3]Oklahoma is excluded from the white-Black achievement analysis from because few districts enroll enough Black students to be included in the SEDA data.

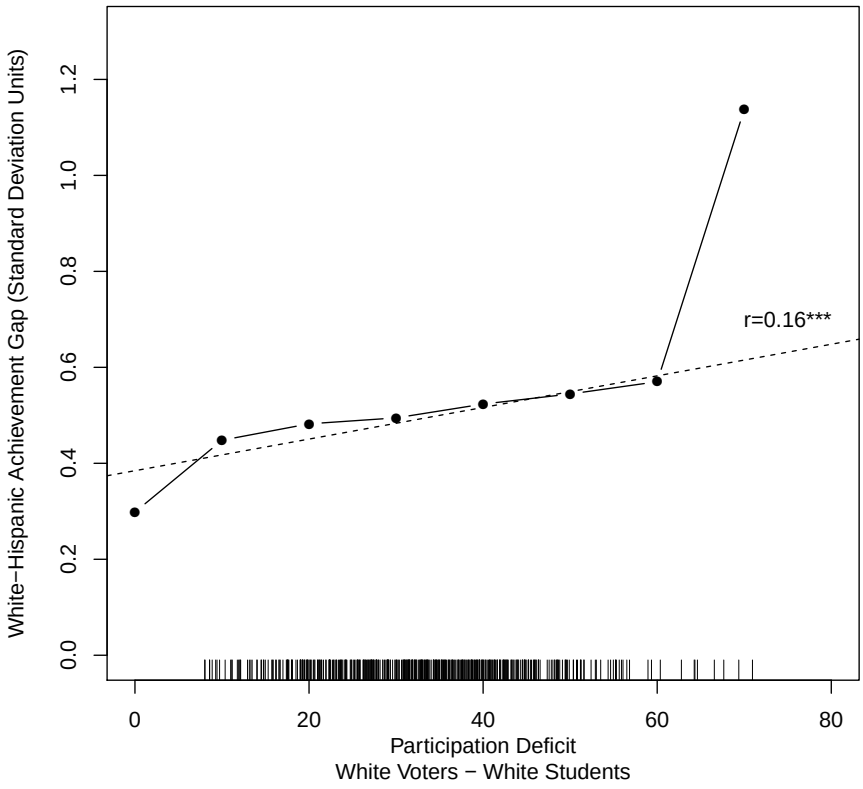


Figure 3: A whiter electorate, relative to student population, is associated with larger white-Hispanic achievement gaps in California

ple, the electorate is 30 percentage point whiter than the student body. That corresponds to a roughly 0.2 standard deviation white-Hispanic achievement gap—equivalent to more than half a year of learning (Hill et al. 2008) or about a third of the average difference in the performance of these two groups nationally (Reardon, Kalogrides and Shores 2019).

Of course, we do not claim that these correlations are causal. It is likely that a number of other variables simultaneously affect both political participation and student achievement. Nevertheless, we believe the associations are substantively and politically impor-

Table 2: Hispanic students most underperform whites in districts with least representative electorates

	White-Hispanic Achievement Gap (SDs)					
	(1)	(2)	(3)	(4)	(5)	(6)
California						
Representational Gap	0.003***	0.008***	0.007***	0.003***	0.009***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	422	422	422	422	422	422
R^2	0.027	0.330	0.426	0.024	0.341	0.456
Adjusted R^2	0.025	0.320	0.394	0.021	0.332	0.426
Illinois						
Representational Gap	0.001	0.009***	0.009***	0.002	0.021***	0.021***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	150	150	150	150	150	150
R^2	0.003	0.371	0.433	0.014	0.451	0.487
Adjusted R^2	−0.004	0.345	0.355	0.008	0.428	0.416
Oklahoma						
Representational Gap	0.001	0.004	0.006	0.003**	0.009***	0.008**
	(0.001)	(0.005)	(0.006)	(0.001)	(0.003)	(0.003)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	45	45	45	45	45	45
R^2	0.005	0.212	0.451	0.128	0.684	0.841
Adjusted R^2	−0.018	0.088	0.033	0.108	0.634	0.720

*p < .1; **p < .05; ***p < .01

Note: Dem. controls include % FRPL, % white student enrollment, and district type (urban, suburban, town, or rural).

tant. If elected officials are motivated to respond to voter preferences, our results suggest that school board members face the least political pressure to address persistent racial achievement gaps in precisely the districts where these gaps are largest because minority populations are most politically under-represented in these jurisdictions.

Conclusion

A growing body of research has documented troubling disparities in the governance of American public schools. School board members remain overwhelmingly white (Hess and Meeks 2010), reside disproportionately in more affluent and whiter neighborhoods (Bartanen et al. 2018), and do not believe they are held electorally responsible for closing racial achievement gaps (Flavin and Hartney 2017). Our analysis reveals the underlying electoral processes through which these disparities likely emerge. We show that most of those who cast ballots in school board elections do not have children enrolled in local schools and do not resemble the students schools educate. This demographic disconnect is most pronounced in terms of race, with most majority-nonwhite districts having a majority-white electorate. We also demonstrate that these representational deficits are most notable in districts with the largest racial achievement gaps.

While we do not examine the causes of these disparities in political participation, the Supplemental Appendix provides evidence that they are driven both by differences in voter eligibility among racial groups and shortfalls in turnout among eligible voters. Reforms such as moving school board elections to coincide with higher-turnout national elections would likely boost the political representation of households with children and increase the racial diversity of the electorate (Kogan, Lavertu and Peskowitz 2018). Nevertheless, significant disparities would almost certainly remain.

Taking these representational deficits into account is important for designing policy interventions that improve educational opportunity for all students. For example, recent research has shown that nearly 90 percent of the variation in racial achievement gaps is observed within states, suggesting that interventions designed to close these gaps should be targeted to address local needs. Although we do not argue that disparities in political participation are the cause of achievement shortfalls among nonwhite students, our findings

suggest that local school districts may not be politically motivated to address these gaps.

We close with an example that highlights the importance of accounting for these electoral realities, and the risk of ignoring participation disparities, when delegating authority to local school districts. In 2013, California overhauled its state school funding formula, consolidating a series of categorical programs into a single "local control funding formula" that directs more state money to districts enrolling larger numbers of English learners and impoverished students. Reflecting Gov. Jerry Brown's belief in the principle of "subsidiarity"—the idea that policy decisions are best made at the lowest level possible—the funds came with few strings attached and local districts had discretion in allocating these resources to serve high-need students. Although the reform was effective in channeling more state funds to districts serving larger disadvantaged student populations, recent analyses showed that only a fraction of these dollars ultimately reached schools enrolling the most disadvantaged students (Silberstein and Roza 2020). A state audit concluded that the new policy "has not ensured that funding is benefiting intended student groups and closing achievement gaps" (Auditor of the State of California 2019). Other independent evaluations also found little evidence that the extra money was effective in closing student achievement gaps (California Legislative Analyst's Office 2018).

The inequitable outcomes in California and the diversion of funds intended for high-need students likely would not have surprised V.O. Key. When disadvantaged groups are poorly represented in the political process, local elected officials may not have strong incentives to make decisions with their interests in mind.

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SUPPLEMENTAL APPENDIX

Descriptive Statistics

Table A.1: Descriptive statistics of analytic samples

	SEDA District Universe	Analytic Sample
California		
No. of Districts	973	718
Mean Student Enrollment	2897	3387
Urban	15.9%	17.3%
Rural	42%	33.9%
White	45.2%	41.4%
Special Ed	11.9%	9.4%
English Learners	17.1%	18.8%
Illinois		
No. of Districts	873	709
Mean Student Enrollment	1055	1001
Urban	4.7%	3.5%
Rural	40.9%	44%
White	77.8%	79.8%
Special Ed	16.2%	16.1%
English Learners	4%	3.9%
Ohio		
No. of Districts	617	562
Mean Student Enrollment	1275	1257
Urban	3.7%	3.6%
Rural	46.5%	45.4%
White	89.5%	89.4%
Special Ed	14.4%	14.4%
English Learners	1%	1%
Oklahoma		
No. of Districts	537	386
Mean Student Enrollment	537	580
Urban	1.5%	1.6%
Rural	78.6%	77.7%
White	59.7%	61.1%
Special Ed	15.2%	14.7%
English Learners	2.6%	2.4%

Voter Migration

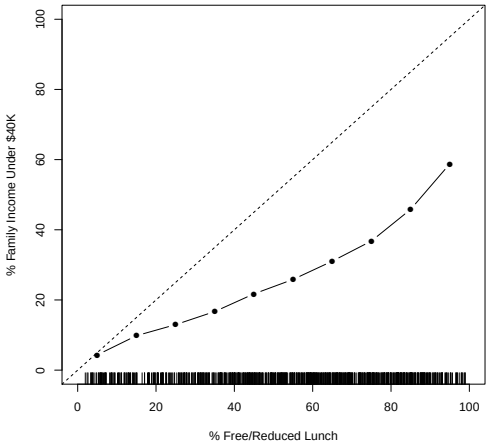
Our compositional measures are based on the current snapshot of the Catalist voter file. Unlike the official voter file, Catalist records are not "purged" as individuals become inactive or die, so the records should be complete for all elections held since 2008. However, the firm does update voter addresses as individuals change residences. Thus, a voter we observe today living in one school district may have lived in a different school district at the time of an earlier election. Since we have access only to current addresses, we match voters to their current jurisdictions.

Several published studies and one working paper examine the consequences of this kind of migration and show that it is unlikely to affect our estimates. For example, one study compares partisanship of voters based on current addresses with official 2008 presidential results and finds that they are correlated at $r > 0.9$ (Kogan, Lavertu and Peskowitz 2018). Another study compares the total vote count based on the 2016 Catalist snapshots and historical vote counts in Ohio school levy elections and finds that the two are correlated at $r = 0.98$ (Cook et al. 2020). A similar analysis comparing current Catalist voter counts with official California elections results over the same time period as our analysis reports a correlation of $r = 0.999$ (Hajnal, Kogan and Markarian 2020).

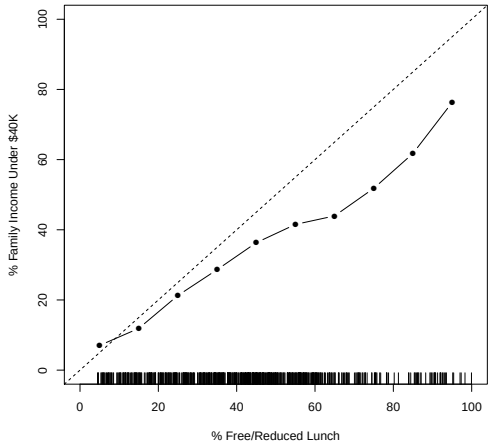
Voter Income

To examine disparities in socioeconomic status, we compare the share of students who qualify for free or reduced-priced lunch (FRPL) with the share of voters with family income under $40,000, the approximate income cutoff for reduced-price lunch eligibility for a family of typical size during the period we examine.[1] Admittedly, existing research suggests that FRPL status is an imperfect proxy for student family income, so some caution is warranted in drawing inferences from this comparison (Domina et al. 2018). Overall, however, the figures suggest that voters are typically wealthier than the student population, and that this gap is largest for the most economically disadvantaged districts. Interestingly, the disparities in socioeconomic status appear to be considerably smaller than the racial differences we document in our main analysis.

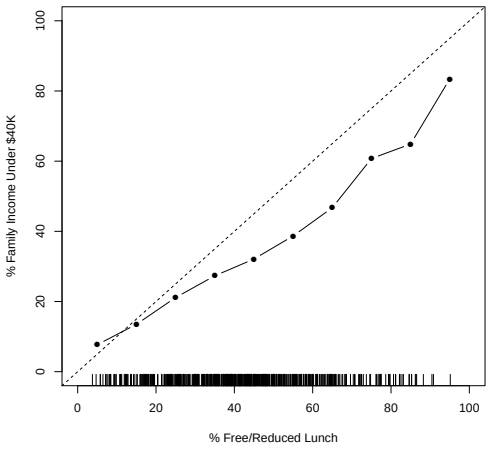
[1] Unfortunately, we are limited by the relatively broad income bands used in the Catalist data, so we cannot identify FRPL eligibility more precisely.



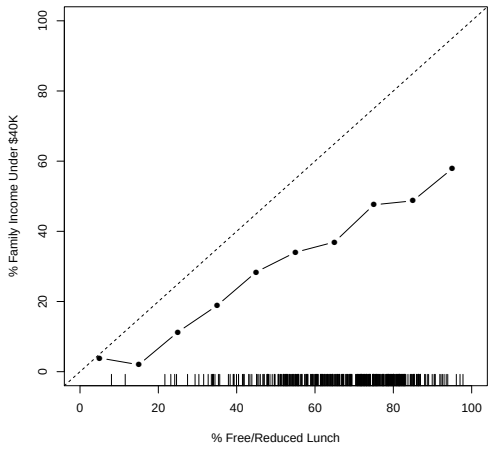
(a) California



(b) Illinois



(c) Ohio



(d) Oklahoma

Figure A.1: The electorate in school board elections is typically wealthier than the students attending local public schools.

White-Black Achievement Gaps

Table A.2: White-Black achievement gaps by state

	White-Black Achievement Gap (SDs)					
	(1)	(2)	(3)	(4)	(5)	(6)
California						
Representational Gap	0.002	0.005^{***}	0.005^{**}	0.004^{***}	0.004^{**}	0.005^{***}
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	190	190	190	190	190	190
R^2	0.010	0.167	0.287	0.036	0.176	0.395
Adjusted R^2	0.005	0.140	0.221	0.031	0.149	0.339
Illinois						
Representational Gap	0.0001	0.004^{*}	0.005^{*}	0.001	0.012^{***}	0.010^{***}
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.004)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	83	83	83	83	83	83
R^2	0.00002	0.272	0.371	0.007	0.262	0.377
Adjusted R^2	−0.012	0.215	0.181	−0.005	0.204	0.190
Ohio						
Representational Gap	0.001	0.003	0.0003	0.001	−0.0004	−0.004
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.004)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	101	101	101	101	101	101
R^2	0.004	0.387	0.521	0.002	0.358	0.521
Adjusted R^2	−0.006	0.348	0.423	−0.008	0.317	0.423

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Note: Dem. controls include % FRPL, % white student enrollment, and district type (urban, suburban, town, or rural).

Adjusting for Measurement Error in Catalist's Race Predictions

Our analysis relies on the voter race predictions created by Catalist. A recent study by Bernard Fraga compares Catalist's predictions with voter self-reports for respondents in the 2010 Cooperative Congressional Election Study. Overall, he finds that the Catalist predictions correctly identify 99% of white respondents, 97% of black respondents, and 80% of Latinos, for an overall accuracy of 91% (Fraga 2016). This is similar to the numbers in a validation study conducted by Catalist using official records from southern states that ask voters to identify their race on the voter registration forms. The Catalist study showed that predicted race matched the officially recorded race 90% of the time for white voters, 86% of the time for black voters, and 83% of the time for Latino voters.

Even with this relatively high predictive accuracy, one may worry that the residual measurement error may be correlated with student demographics in a way that biases our analyses and makes the representational gap look larger than it really is. For example, in overwhelmingly nonwhite districts, it is likely that there are more nonwhite voters who are misclassified as being white than there are white voters who are misclassified as minorities, exaggerating the extent to which nonwhite voters are under-represented in our data for these districts.

Ideally, we would adjust the Catalist estimates for these misclassifications directly. Unfortunately, we do not have all of the necessary parameters to implement such adjustments with precision. For example, although we know the percent of white voters who are correctly classified as white, we do not know what percent of those who are misclassified are mistakenly labeled as Black vs. Latino vs. Asian. Instead, we proceed with the most conservative assumptions possible—to ensure that our corrections, if anything, under-estimate

the true share of the electorate that is white.

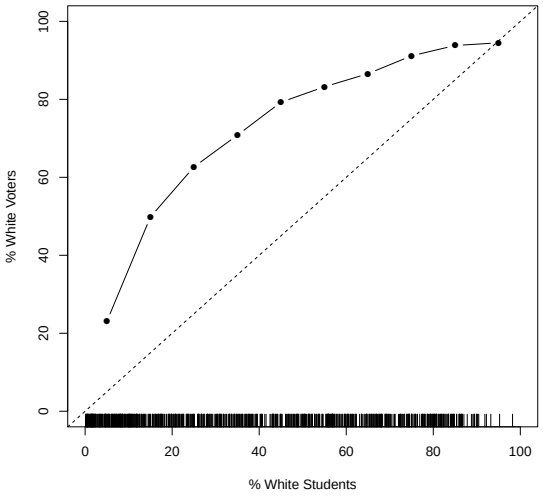
First, we assume that that minority voters may be misclassified as being white, but that no white voters are incorrectly flagged as nonwhite. Second, we use the information provided in the Catalist technical documentation (which is more conservative than Fraga's estimates) to back out the number of minority voters incorrectly predicted to be white and subtract them from our numerator.

Consider the following example. Suppose we observe a school district with 200 voters, 116 of whom are coded as white in the Catalist data and 84 of whom are coded as Black. Using the uncorrected Catalist data, we would calculate that the white share of the electorate is 58 percent (116 white voters ÷ 200 voters total). To implement our correction, we assume that all 84 Black voters are correctly classified (in fact, it is likely that this number includes some white voters incorrectly classified as Black). Second, we use the Catalist validation records, which show an 84 percent correct classification rate among Black voters, and assume that the remaining 16 percent of Black voters are all incorrectly classified as being white (in fact, some may instead be misclassified as members of another minority subgroup). In our simple example, this implies that 16 voters coded as white in the Catalist data are actually Black, so we manually subtract 16 from our white total and add it to our Black total. Using this procedure, our corrected data would now show that the white share of the electorate is only 50 percent (100 white voters ÷ 200 voters total).

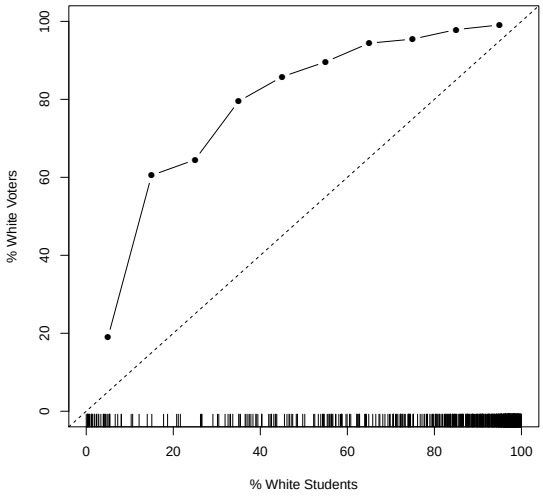
We should stress, as we note above, that this is is a very conservative approach. It almost certainly provides a *lower bound* for the white share of the electorate. If we find that white voters are still over-represented even after implementing this correction, we can be confident that the true representational gap is at least as large as what we find with the corrected data, and is probably even larger.

The tables and figures below replicate all of our analyses after implementing this con-

servative procedure to adjust for misclassification in the Catalist predictions of voter race. Overall, the corrections do not change any of our key results. We still find: (1) white voters are over-represented in school board elections, relative to the student populations; (2) most majority-nonwhite school districts have majority white electorates; and (3) the achievement gaps between white and nonwhite students tend to be larger in districts where voters look most dissimilar from the student population.



(a) California



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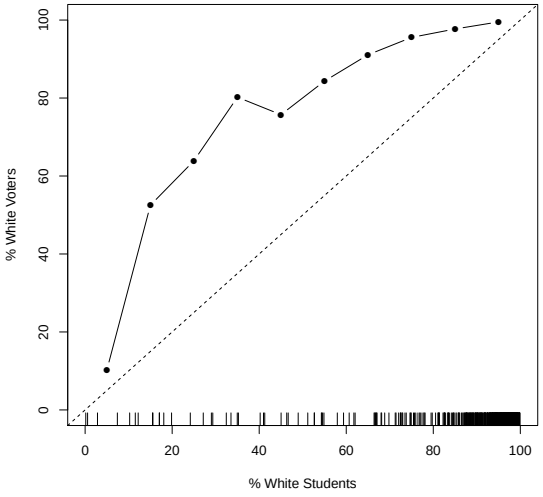
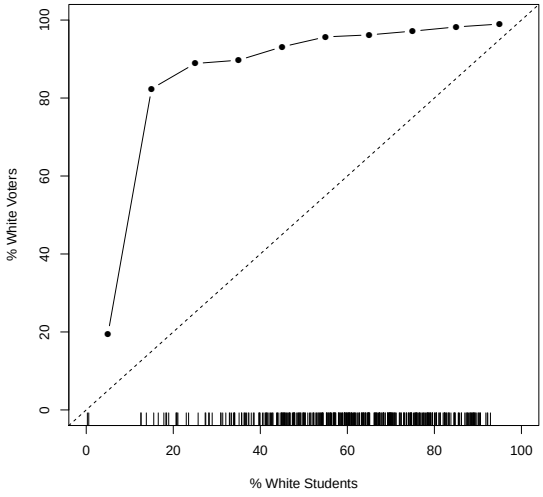


(c) Ohio



(d) Oklahoma

Figure A.2: Racial composition of school board electorate vs. students after correcting for potential misclassification in the Catalist data

Table A.3: Most majority-nonwhite school districts have majority-white electorates even after correcting Catalist data for potential miclassification of voter race

	California	Illinois	Ohio	Oklahoma
Majority Nonwhite Districts	439	92	28	106
(% of all districts)	(58.8%)	(14.6%)	(5%)	(27.4%)
Average White Voter Share	51%	53.2%	57.9%	89.5%
White Voter Majority	58.8%	62%	71.4%	98.1%

Table A.4: Hispanic students most underperform whites in districts with least representative electorates, correcting for potential miclassification of voter race in Catalist data

	White-Hispanic Achievement Gap (SDs)					
	(1)	(2)	(3)	(4)	(5)	(6)
California						
Representational Gap	0.004^{***}	0.007^{***}	0.006^{***}	0.004^{***}	0.007^{***}	0.006^{***}
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	422	422	422	422	422	422
R^2	0.037	0.328	0.424	0.035	0.339	0.454
Adjusted R^2	0.035	0.318	0.392	0.033	0.329	0.423
Illinois						
Representational Gap	0.002	0.008^{***}	0.007^{***}	0.003^{*}	0.018^{***}	0.018^{***}
	(0.001)	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	150	150	150	150	150	150
R^2	0.009	0.373	0.434	0.025	0.452	0.487
Adjusted R^2	0.002	0.346	0.356	0.019	0.429	0.417
Oklahoma						
Representational Gap	0.001	0.004	0.006	0.003^{**}	0.008^{***}	0.007^{**}
	(0.001)	(0.004)	(0.005)	(0.001)	(0.003)	(0.003)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	45	45	45	45	45	45
R^2	0.006	0.218	0.459	0.140	0.685	0.842
Adjusted R^2	−0.017	0.094	0.048	0.120	0.635	0.721

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Note: Dem. controls include % FRPL, % white student enrollment, and district type (urban, suburban, town, or rural).

Table A.5: White-Black achievement gaps by state, correcting for potential miclassification of voter race in Catalist data

	White-Black Achievement Gap (SDs)					
	(1)	(2)	(3)	(4)	(5)	(6)
California						
Representational Gap	0.002	0.004^{***}	0.004^{**}	0.004^{***}	0.004^{**}	0.004^{***}
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	190	190	190	190	190	190
R^2	0.012	0.167	0.286	0.040	0.178	0.396
Adjusted R^2	0.007	0.140	0.220	0.035	0.151	0.341
Illinois						
Representational Gap	0.001	0.004^{*}	0.004^{*}	0.002	0.010^{***}	0.009^{***}
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	83	83	83	83	83	83
R^2	0.006	0.273	0.372	0.016	0.263	0.378
Adjusted R^2	−0.007	0.216	0.182	0.004	0.205	0.190
Ohio						
Representational Gap	0.001	0.003	0.0003	0.001	−0.0003	−0.003
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Demographic Controls	N	Y	Y	N	Y	Y
Commute Zone FEs	N	N	Y	N	N	Y
Precision Weights	N	N	N	Y	Y	Y
Districts	101	101	101	101	101	101
R^2	0.004	0.388	0.521	0.001	0.358	0.521
Adjusted R^2	−0.006	0.348	0.423	−0.009	0.317	0.423

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Note: Dem. controls include % FRPL, % white student enrollment, and district type (urban, suburban, town, or rural).

Actual vs. Eligible Voters

One of our main contributions is to document and quantify the demographic disconnect between the voters who elect school boards and the students public schools educate. We do not, however, offer evidence on the underlying causes of this disconnect in the manuscript. This question deserves more careful treatment than we can offer here, although we provide some initial data that we hope can inform future research.

It is useful to separate possible explanations for the disparities we find into two broad categories. First, the population of adults who are actually eligible to vote may look different than the composition of enrolled students. For example, lower rates of citizenship among Latinos prevent a substantial fraction of Latino adults from voting (Highton and Burris 2002). White families are also twice as likely to enroll their children in private schools (Reardon and Yun 2002), suggesting that a larger fraction of white school-age children will not show up among the local public school student body. Although quite distinct, both of these processes would result in an eligible voter population that is whiter than the students. Other demographic factors—including variation in the ratio of children to adults per household and differences in the age distribution among racial and ethnic groups—could similarly make the *potential electorate* look whiter than the public school student population.

Second, the disparities may be at least partly a function of differences in political participation among racial and ethnic groups. An extensive body of research documents that nonwhite voters are less likely to turn out and examines the extent to which these gaps are driven by socioeconomic status, differences in political socialization, and other factors. Importantly, gaps in political participation among eligible voters are at least theoretically amenable to improvement via institutional reforms. For example, on-cycle elections have been shown to increase turnout disproportionately among nonwhite and disadvantaged vot-

ers (Kogan, Lavertu and Peskowitz 2018, Hajnal, Kogan and Markarian 2020). Similarly, research has found that minority voters have more success electing candidates of choice when local governments use by-district rather than at-large elections (Abott and Magazinnik 2020, Marschall, Ruhil and Shah 2010, Trounstine and Valdini 2008), especially when the minority population is sufficiently large and geographically concentrated.[2]

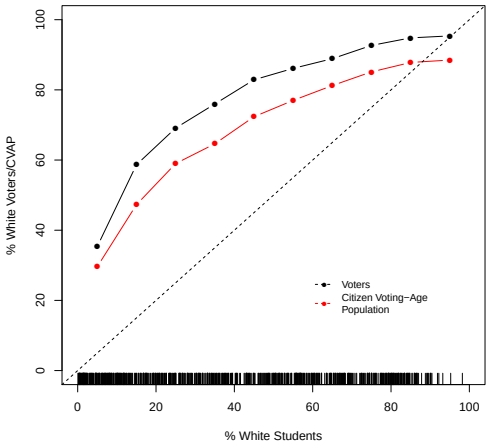
To disentangle these two sets of mechanism, Figure A.3 adds information on the racial and ethnic composition of the eligible electorate, which we measure as the citizen voting-age population (CVAP) in each school district.[3] Any difference between the dashed 45-degree line and the red CVAP binned scatter plot in each graph is the result of white voters being over-represented among the subset of the adult population that is eligible to vote. The remaining gaps between the black and red scatter plots are driven by unequal rates of participation in school board elections *among* eligible voters.

The figure reveals that lower rates of voter eligibility and lower turnout conditional on eligibility both contribute to the shortfalls we document—but also that the former mechanism is more important than the latter in most cases.[4] In other words, even in the unlikely scenario that political participation among all eligible voters could be equalized, the local electorate would continue to considerably whiter than the public student population in most communities. While reforms to political institutions may help close some of the gap in electoral participation on the margins, these findings suggest that such reforms are unlikely to fundamentally change the dynamics of school board elections or the incentives

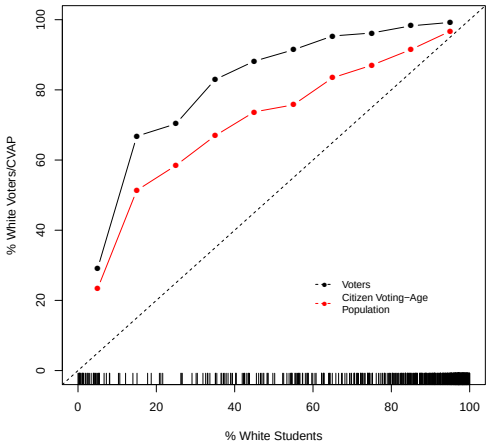
[2]Erie, Kogan and MacKenzie (2011) describe one mechanism that contributes to this finding: By limiting political competition to specific neighborhoods, district elections largely offset differences in average participation rates across neighborhoods. This reduces the number of votes necessary to prevail in a low-turnout district relative to a high-turnout district and increases the political influence of areas likely to be disadvantaged due to lower turnout in at-large elections.

[3]We rely on data from the 2010 Census and the 2008-2013 American Community Survey to construct these estimates.

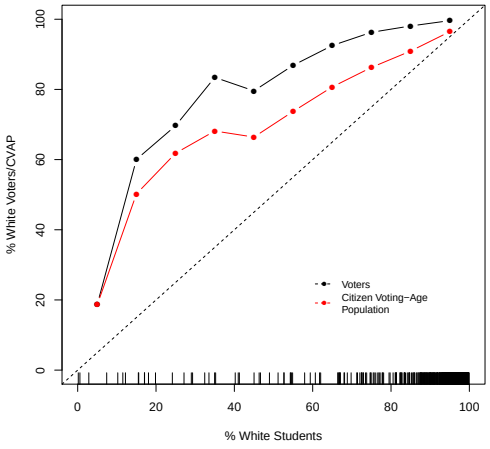
[4]In Oklahoma, the two mechanism appear to contribute roughly equally to the observed participation gap.



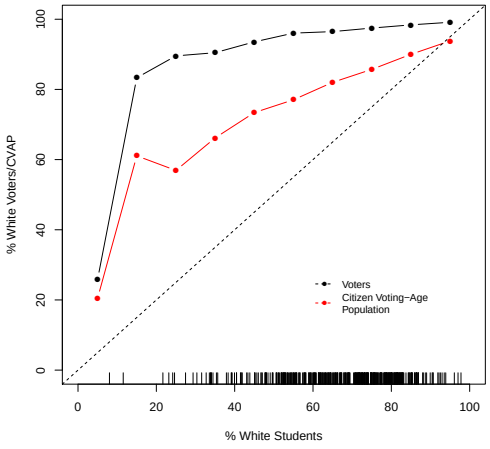
(a) California



(b) Illinois



(c) Ohio



(d) Oklahoma

Figure A.3: Comparison of student enrollment to eligible (citizen voting-age) and actual voters.

facing school board members.

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