How Wealthy Are Local Elected Officials?
Evidence from Candidates’ Housing Wealth*

Jesse Yoder†
Department of Political Science
Stanford University
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Abstract
How much wealthier are local elected officials in the United States than those they represent, and why? I create a new dataset on candidate wealth by linking candidates for state and local offices in California from 2007-2018 to their housing records. Candidates for nearly all local offices live in higher-value homes than their constituents. While most previous work on candidate wealth focuses on the U.S. Congress, here I show that because wealth disparities appear even at the earliest stages of the candidate pipeline to higher office, policies designed to increase economic representativeness should start at the local level. Next, I show that this wealth gap cannot be entirely explained by constraints on the supply of potentially qualified, lower-wealth candidates: the wealth gap remains large even when comparing candidates to non-candidates with similar backgrounds, like candidates for judicial positions to similarly aged lawyers who attended the same law school, for example. Finally, I show that the wealthy are over-represented in local offices in part because elections favor them over lower-wealth candidates. I show that local-level reforms to campaign finance and to at-large election systems, which seem to especially favor wealthy candidates, may increase economic representativeness across many levels of government.

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†Jesse Yoder is a Ph.D. Candidate in the Department of Political Science at Stanford University (yoderj@stanford.edu; 616 Jane Stanford Way, Stanford, CA 94305).
1 Introduction

Members of Congress in the United States are much wealthier than the citizens they represent, on average (Carnes 2013, 2018; Thompson et al. 2019). In addition to concerns that it skews policymaking in favor of the wealthy (Eggers and Klašnja 2019), this fact raises important questions about the role of candidate wealth in state and local offices, which are important stepping stones for running for higher office in the United States (e.g. Thomsen 2014; McCrain and O’Connell 2020). In this paper, I answer three questions. First, at what stage in the candidate pipeline to Congress do these wealth gaps appear? Second, do local elections favor wealthier candidates, and if so, why? Finally, what electoral reforms might exacerbate or mitigate wealth gaps between elected officials and those they represent?

To answer the first question, I estimate wealth differences between elected officials and the constituencies they represent across a variety of state and local offices. Characterizing these differences is challenging because no public, centralized repository of data on the wealth of state and local elected officials exists. To overcome this, I link candidates for state and local offices in the entire state of California from 2007-2018 to their publicly available housing records. Comparing the housing wealth of candidates for local offices to those of their constituents, I find enormous gaps in wealth status between elected officials and the public at the local level. These differences appear even at the earliest stages in the candidate pipeline to higher office, and they grow substantially for higher-level offices. Candidates for school board races in California have about 11% higher home values than the average homeowner in the county they run in. Candidates for city-level offices live in homes about 17% higher in value than the average homeowner in their city. Candidates for state legislative offices in California, meanwhile, have home values about 53% higher than the average homeowner in their county. Benchmarking these gaps against candidates from California for the U.S. House of Representatives, I find that U.S. House candidates live in homes about 60% higher in value than the average homeowner in their county.
Measuring these wealth gaps for state and local offices is important for three main reasons. First, as mentioned earlier, state and local offices are important early stages of the candidate pipeline to running for higher office: nearly half of the U.S. Congress consists of former state legislators,¹ and many state legislators first serve in local elected office. Observing wealth disparities early in the candidate pipeline to higher office suggests that policies designed to increase economic representativeness across elected offices should start at the local level. While most previous work on candidate wealth focuses on national offices, and often suggests national or party-level reforms to encourage more representative sets of candidates to run (e.g., Thomsen 2014; Carnes 2018), here I identify that national-level reforms aimed at making candidates more economically representative may themselves be hampered by the fact that much of the prospective candidate pool — those who serve in state and local government — is already quite unrepresentative.

Second, local offices in the U.S. are important to study in their own right, given their prominent policymaking role in education, law enforcement, land use, public health, and many basic services. Recent work illustrates how the personal characteristics of elected officials inform their policy priorities in office (e.g., Burden 2007; Washington 2008; Broockman 2014). And an emerging literature hypothesizes that wealth status may inform policy priorities for state and local officials as well, whether it be state legislators pursuing favorable tax policy (Carnes 2016), or wealthy, homeowning city council members working to maintain exclusionary land use policies and limit the development of new housing (Einstein, Ornstein, and Palmer 2020). This paper provides empirical grounding for future work on the relationship between politicians’ wealth and policymaking across a variety of elected offices.

Third, and more prosaically, contributing to the empirical record on how economically unrepresentative local officials are in the United States is important because its answer was not obvious ex ante. On the one hand, we might expect the wealth gap between elected officials and their constituents to appear across local offices, given how vast the observed

¹https://www.ncsl.org/blog/2017/01/05/majority-of-us-congress-is-former-state-legislators.aspx
wealth disparities are for federal offices. On the other hand, local offices in the U.S. differ from federal ones in many ways: local officials are often elected in lower salience, lower turnout elections (e.g., Anzia 2013; Kogan, Lavertu, and Peskowitz 2018) where voters have less information (Hopkins 2018; Rogers 2018). Local offices are often less ideological (Oliver, Ha, and Callen 2012; Thompson 2020), less professionalized, and lower paid than state or federal offices, casting doubt on whether local offices would attract wealthy candidates.²

Next, I show that candidates for local office are wealthier than their constituents in part because they are often drawn from a limited set of occupations. To demonstrate this, I use a topic model to infer candidates’ backgrounds from their ballot designations, a unique feature of California ballot design where candidates include a few short words on their qualifications. I show that constraints on occupational backgrounds of those who run for office may explain much of the wealth disparity. The largest wealth gaps exist for positions that specifically require legal experience — district attorneys and superior court judges.³ The wealth gap is considerably smaller for city council candidates and even for mayors, and I show that part of the reason for this could be because these offices do not have occupational pre-requisites to run for office.

However, these occupational barriers to entry can explain some, but not all, of the wealth gap. To compare candidates’ housing wealth to the wealth of non-candidates with similar backgrounds, I gather data on every lawyer admitted to the State Bar of California and link

²A long history of American political thought analyzing the US federalist system of government has described how state and local elected officials will be more representative and more attuned to the will of its citizens than officials for national offices (see James Madison’s Federalist No. 10 or Alexis de Tocqueville’s Democracy in America, for example.) Relatedly, a theoretical literature in political economy predicts that “low-quality” potential candidates have a comparative advantage in pursuing elected office because their private market wages will be lower than high-quality candidates (e.g. Caselli and Morelli 2004; Messner and Polborn 2004) — a prediction that may be especially true for low-paying local offices (Ferraz and Finan 2009) — and explores electoral rules that might attract high-quality candidates (e.g. Persson, Tabellini, and Trebbi 2003; Gagliarducci, Nannicini, and Naticchioni 2011; Galasso and Nannicini 2017). More generally, a large literature in political economy has suggested earnings ability or economic status as a potential indicator of a candidate’s competence (e.g., Besley 2005; Dal Bó, Dal Bó, and Snyder 2009; Galasso and Nannicini 2011; Besley et al. 2017; Dal Bó et al. 2017).

³For a description of candidate qualification requirements in California, see https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=GOV&division=2.&title=3.&part=1.&chapter=1. &article=
them to their housing records. I find that wealth gaps between those who do and not not run for office remain large even after adjusting for education and professional background. Candidates for positions that explicitly require legal experience in order to seek office — district attorney and superior court judges — live in homes about 22% higher in value than non-candidate lawyers who were admitted to the Bar in the same year and who attended the same law school. In addition to being the first work of its kind to estimate such a wealth gap across local offices in the United States, this paper is the first to explicitly compare local representatives’ wealth status to other members of the public in a plausible potential candidate pool: those with similar education and professional backgrounds. This within-occupation wealth gap has two main interpretations: on the one hand, we might find within-occupation wealth gaps encouraging if — as an important strand of literature in political economy suggests — earnings ability and economic status signal an individual’s qualifications, competence, or ability to perform well in office (e.g. Galasso and Nannicini 2011; Besley et al. 2017; Dal Bó et al. 2017). On the other hand, the presence of a within-occupation wealth gap suggests that constraints on the supply of potentially qualified, lower-wealth candidates cannot explain the entire observed wealth gap. In other words, there may be ample room to increase economic representativeness without sacrificing on the baseline professional qualifications that are required for holding some offices.

More broadly, these wealth gap patterns illustrate a possible trade-off between electing individuals with relevant qualifications and prioritizing economic representativeness, at least for some offices. On the one hand, if economic status correlates with political ability, it may be important to prioritize these traits at the cost of economic representativeness. If, on the other hand, wealth status has no relationship with ability to perform well in office, it may be especially worthwhile to consider electoral reforms that increase the economic representativeness of elected officials. How to balance the possible trade-off between qualifications and economic representativeness depends in part on one’s views about what makes an individual

\footnote{Carnes and Lupu (e.g., 2016b) argues that officeholders with more formal education, a trait that correlates highly with wealth status, do not perform better in office than candidates with less formal education.}
able to perform well in elected office. And even if candidate wealth did correlate with political ability, we may still prefer trading off these qualities in service of a more representative democracy. How to resolve this potential trade-off is a difficult theoretical question, and one whose answer lies beyond the evidence in this paper. But by measuring the extent of the wealth gap between politicians and those they represent, I offer a useful data point for such a debate.

Do elections favor wealthy candidates, and if so, why? To answer this, I gather information on all candidates who run for state and local offices in California, which allows me to estimate the differences in economic status between candidates who do and do not win office. I find that elections advantage higher-wealth candidates: the pool of candidates who win election are much wealthier than those who lose elections, on average. These differences are large, and this pattern holds across virtually every state and local office I study. For example, state legislative candidates who run and win elected office live in homes about 13% higher in value than those who run but lose. This shows how part of the wealth gap between officeholders and their constituents can be attributed to who runs for office, but another large driver of the gap happens at the election stage, where voters tend to select candidates with higher wealth.

Finally, why do elections advantage wealthier candidates, and what electoral reforms might increase or decrease these wealth disparities? I identify two features of elections that seem to favor wealthy candidates. First, campaign finance systems in the U.S. seem to advantage personally wealthy candidates. Linking state legislative candidates to the total amount of contributions to their campaigns, I find that wealthy candidates may win elections at higher rates because of their fundraising advantages over their lower-wealth opponents. A candidate’s wealth is correlated with winning an election only insofar as wealth proxies for the ability to fundraise. In other words, wealthier candidates perform similarly in elections to less wealthy candidates after adjusting for campaign fundraising. While this pattern certainly does not prove that campaign fundraising is the only avenue
through which wealthier candidates are favored in elections (I am neither randomizing a candidate’s wealth status nor their fundraising totals), it is consistent with the possibility that campaign finance reforms that equalize candidates’ fundraising abilities may increase the economic representativeness of elected officials.

Second, at-large election systems used by many U.S. localities — where voters across an entire constituency select candidates for each available seat — seem to advantage higher-wealth candidates. Leveraging court-induced electoral reforms from at-large to single member district systems for California city council and school board positions, I find that moving from at-large to district-based elections nearly eliminated the entire 15% wealth gap between those elected to school board positions and their constituents, likely because the reform’s downsizing of districts reduces the costs of campaigning. Despite the evidence being more mixed for city council races, the overall findings suggest that at-large elections may contribute to disparities in economic representation, in addition to previous work showing that at-large systems may dilute representation for women (Crowder-Meyer, Gadarian, and Trounstine 2015) and racial minority groups (Collingwood and Long 2019; Abott and Magazinnik 2020).

Taken together, these findings illustrate enormous wealth gaps between elected officials and those they represent at all levels of elected office in the United States. Part of this wealth gap appears because wealthier individuals choose to run, but the election stage increases this wealth gap even more. Some, but not all, of this wealth gap may be attributed occupational barriers to entry, where qualifications for running for office depend on one’s background in higher-earning professions. While most previous work on candidate wealth focuses on the U.S. Congress, here I show that because wealth disparities appear even at the earliest stages of the candidate pipeline to higher office, policies designed to increase

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5The California Voting Rights Act of 2001 (CVRA) significantly lowered the burden of proof to show that at-large elections dilute minority representation. From the CVRA’s passage, over one hundred city councils and school boards in California moved from at-large elections to district-based elections. In some cases, these changes occurred as a result of legal proceedings, while in other cases cities or school districts voluntarily adopted single-member district elections to prevent such litigation.
economic representativeness should start at the local level. I show that local-level reforms to campaign finance and to at-large election systems, which seem to especially favor wealthy candidates, may be important policy levers to increase economic representativeness across many levels of government.\footnote{This paper adds to a long history of political science research on descriptive representation (e.g., Pitkin 1967; Mansbridge 1999; Dovi 2002), and how electoral systems shape representation (e.g., Welch and Studlar 1990; Gerber, Morton, and Rietz 1998; Trebbi, Aghion, and Alesina 2008), and it is the first work in the United States that examines how electoral reforms affect the wealth status of those who serve in local office for the same elected position over time. In doing so, this paper contributes to recent work that seeks to understand the economic status and backgrounds of elected officials in the United States, both historically (Thompson et al. 2019) and in the contemporary period (Carnes 2013, 2018; Eggers and Klašnja 2019; Kirkland 2019, 2020).}

2 Linking Candidates to their Home Values

In this section, I describe the data and the procedure for linking candidates for office to their home values.

2.1 Data on Candidates for Elected Offices

I first gather data on candidates for local offices in California from 2007-2018 from the California Elections Data Archive (CEDA), which includes nearly 22,000 linked candidate-year observations.\footnote{The full CEDA data spans the years 1995-2018, but I limit the main analysis to 2007-2018 because those years overlap with the property records, which I describe in more detail below.} Each candidate-year observation contains the name of the office, full name of the candidate, the number of votes each candidate received in each election in that year, and whether the candidate was ultimately elected to office. Table 1 summarizes the number of candidate-year observations for each type of local elected office in California. Panel A shows candidates for school district elections. Most of these candidates run for school board, but the school district-level elections also include candidates for school superintendent. Panel B of Table 1 tabulates the number of candidates for type of city-level office. The vast majority of candidates for city-level elected positions in California run for city council, but the dataset also includes candidates for mayor, as well as a variety of other city-level

<table>
<thead>
<tr>
<th>Office</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td><strong>A: School-Level Offices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Board</td>
<td>8,599</td>
<td>87.69</td>
</tr>
<tr>
<td>School Superintendent</td>
<td>1,121</td>
<td>11.43</td>
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<tr>
<td>Other</td>
<td>86</td>
<td>0.88</td>
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<tr>
<td><strong>Total</strong></td>
<td>9,806</td>
<td>100.00</td>
</tr>
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<td><strong>B: City-Level Offices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auditor</td>
<td>9</td>
<td>0.10</td>
</tr>
<tr>
<td>City Attorney</td>
<td>47</td>
<td>0.52</td>
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<tr>
<td>City Council</td>
<td>7,465</td>
<td>82.56</td>
</tr>
<tr>
<td>Clerk</td>
<td>196</td>
<td>2.17</td>
</tr>
<tr>
<td>Mayor</td>
<td>964</td>
<td>10.66</td>
</tr>
<tr>
<td>Treasurer</td>
<td>305</td>
<td>3.37</td>
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<tr>
<td>Other</td>
<td>56</td>
<td>0.62</td>
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<tr>
<td><strong>Total</strong></td>
<td>9,042</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>C: County-Level Offices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessor</td>
<td>201</td>
<td>7.02</td>
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<table>
<thead>
<tr>
<th>Office</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td><strong>D: State Legislative Offices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State House</td>
<td>775</td>
<td>79.41</td>
</tr>
<tr>
<td>State Senate</td>
<td>201</td>
<td>20.59</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>976</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>E: Federal Offices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. House</td>
<td>339</td>
<td>100.00</td>
</tr>
</tbody>
</table>

offices, like city clerks and city treasurers. Panel C shows the number of candidates for each type of county-level elected position. About half of county-level candidates run for a county supervisor position, but the dataset also includes other county positions like assessors, superior court judges, district attorneys, and sheriffs.

I also use data on California candidates for state legislative offices from 2008-2016 from Klarner (2018). These races, shown in Panel D of Table 1, include a mix of candidates for State House and State Senate in California. Finally, I include candidates for U.S. House seats in California from 2008-2016.

2.2 Administrative Data on Housing Wealth

Measuring the level of wealth of an individual candidate for local office is challenging because no centralized repository with this information exists. To construct this measure, I link candidates to their publicly available housing records, using home value as a measure of candidate wealth. These housing records are collected from public records in each county.
in California and provided by CoreLogic, a private data vendor. The dataset contains information on each individual property in California in each year from 2007-2016, including the property type, full name of the property’s owner(s), most recent sale date and sale price, along with the property’s assessed value in each year.

Using home values to construct a measure of candidate wealth is an attractive measure for three main reasons. First, housing wealth accounts for a substantial portion of aggregate household wealth in the United States – nearly 20% in 2014 (Smith, Zidar, and Zwick 2019). Second, I observe home values for individuals who are not candidates for public office, allowing me to compare the housing wealth of candidates to a relevant control group, e.g., the average individual’s housing wealth within a candidate’s jurisdiction. Third, for a subset of the candidates who win election for state legislative races, I can compare their housing wealth to a separate measure of that individual’s wealth profile. To make this comparison, I collect information from the California Fair Political Practices Commission with California state legislative officeholders’ reported assets. I detail this data collection effort in Section A.1 of the Appendix, and in that section I show that an officeholder’s logged home value and logged reported assets on these financial disclosure forms correlate strongly. This suggests that the housing wealth measure is likely an appropriate proxy for an individual’s overall level of wealth.

2.3 Matching Candidates for Local Offices to Their Housing Wealth

To link candidates for local office to their housing wealth, I implement a simple two-step procedure.

First, for each candidate-race for local office in California, I search for the candidate in the CoreLogic property records in the year immediately prior to the candidate’s run for office. I select every record from the CoreLogic data where a candidate matches to the same county

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8The California local elections data spans 1996-2018, but the CoreLogic property record files cover 2007-2016. I search the CoreLogic property records for the year immediately prior to the candidate’s run for office for the set of years where this is possible (2008-2017). For candidates in 1996-2007, I search the 2007 CoreLogic records, and for candidates in 2018 I search the 2016 CoreLogic records. In the main analysis I
(for county-level and school-level offices) or city (for city-level offices) and whose name is similar to the property’s owner using string matching on first and last name.\(^9\)

Second, I filter the set of potential matches to select the closest match. To do so, I generate a total string distance metric, summing the last name and first name string distances. For each candidate, I select the property owner record that minimizes this distance metric.\(^{10}\)

### 2.4 Matching Candidates for State Offices to Their Housing Wealth

To match candidates for state legislative offices to their housing wealth, I implement a slightly more complicated linking procedure. For local offices, I could identify an individual’s likely area of residence based on the county or city where they run for local office. For state legislative offices, however, candidates might own a home anywhere in their state legislative district, a geography that is not observed in the property records. Many state legislative districts in California cover parts of multiple counties, making it more difficult to define a sufficiently small geographic area to search for potential matches.\(^{11}\) As the set of property records for the search increases, the risk of false positives in the merge, where a candidate is mistakenly linked to a property record they do not actually own, increases. This is because as the set of records to search increases, the likelihood of duplicate first and last names increases.

To help winnow the set of potential matches for each state legislative candidate, I first search for them in a publicly available dataset where state legislative district is observed: the California voter file.\(^{12}\) I implement the same name string matching search and filtering process described in 2.3, but instead I search within state legislative district in the voter records for the search increases, the risk of false positives in the merge, where a candidate is mistakenly linked to a property record they do not actually own, increases. This is because as the set of records to search increases, the likelihood of duplicate first and last names increases.

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\(^9\)Specifically, I use the Jaro-Winkler distance in the \texttt{stringdist} package in R. I identify potential matches as candidates whose last name distance is less than 0.05 and whose first name distance is less than 0.4.

\(^{10}\)I choose a total string distance threshold of 0.2 to declare records as being a match. As I show in the Appendix, the results are similar when choosing different matching thresholds.

\(^{11}\)45\% of California State House Districts cover multiple counties, and more than two-thirds of California State Senate districts cover multiple counties.

\(^{12}\)The California voter file is from 2018 and comes from L2, a voter file vendor.
file rather than within county or city in the property records. For the state legislators who
match to the voter file, I use the zip code of their registration address to define the set of
property records to search. This procedure helps to narrow the set of potential matches and
bring down the risk of false positives in the merge that comes from searching a large set of
property records only on first and last name.\textsuperscript{13}

After finding the appropriate set of property records to search within for each state
legislative candidate, I obtain potential matches based on approximate string matching on
first and last name, and filter the potential matches to get the closest match based on the
name distance metric described in section 2.3. To link candidates for the U.S. House of
Representatives, I follow the same procedure as described in this section, but search the
voter file within Congressional district rather than State Legislative district.

2.5 Summary

The final dataset contains the each housing unit-year in California from 2007-2016 along
with an indicator for whether that housing unit-year belonged to a candidate running for
office. With this dataset I can characterize the home value differences between candidates for
elected offices with other homeowners in their constituency. Later, I incorporate information
on the homeownership rate in each locality to compare candidates’ housing wealth to the
average individual’s housing wealth in their constituency.

\textsuperscript{13}For state legislators who do not match to the voter file, I would still like to search for them in the property
records. To define the set of property records for the search, I search for them in the county within their
state legislative district that has the most registrants. For state legislative districts that are fully contained
within one county, I search for candidates in the property records within that county. For state legislative
districts that cover multiple counties, I search for candidates in the property records in the county that
has the most registrants for that state legislative district according to the voter file.
3 Candidates for Elected Offices Have Higher Housing Wealth Than Those They Represent

In this section, I characterize how wealthy candidates for state and local elections are, and how this compares to the average level of housing wealth in a candidate’s constituency. Overall, I show that there is an enormous wealth gap between candidates for state and local offices and those they represent.

3.1 Graphical Evidence of a Wealth Gap

First, I show graphical evidence of a wealth gap between officeholders and the public. To do so, in Figure 1 I plot the mean home value over time separately for officeholders and for non-officeholding homeowners. As the plot shows, there is a substantial wealth gap between officeholders and the average homeowner in their county. In 2007, for example, the average homeowner in California’s assessed home value was approximately $320,000, while the average elected official’s home value was over $350,000. This wealth gap appears and is substantial in every year throughout the study.

3.2 Regression Evidence of a Wealth Gap

To estimate differences in housing wealth between candidates and their constituents more formally, I estimate the following equation:

$$
\log(\text{Home Value})_{ijt} = \beta \ast \text{Candidate}_{ijt} + \gamma_{jt} + \epsilon_{ijt}
$$

14 I regress the home values on dummy variables for each year, interacted with an indicator for officeholders and non-officeholders, and I include county fixed effects in the regression to ensure that the graph captures differences between officeholders and non-officeholders within the same county and year.

15 One anomalous pattern in Figure 1 is that the average home value for officeholders increases sharply in 2011 relative to non-officeholders, followed by a decline in 2012. This pattern is driven by two features: 1) fewer races occur in odd-numbered years, so the average home value among officeholders is based on fewer observations, and 2) one anomalously wealthy city council candidate won office in 2011, driving up the average home value for officeholders in 2011.
where $i$ is an individual’s owner-occupied housing unit, $j$ is the jurisdiction, and $t$ represents the year. Candidate is an indicator for whether housing unit $i$ is owned by a candidate for local office in that year. The $\gamma_{jt}$ term represents a jurisdiction-by-year fixed effect. What this means, then, is that the quantity of interest $\beta$ captures the difference in home values for candidates and non-candidates, making comparisons only within the same jurisdiction and the same year. For county-level offices – a county sheriff, for example – I would be comparing the home value of a candidate for county sheriff to the average home value in that candidate’s county in the year before they run for office.

Table 2 shows that candidates for state and local offices have much higher home values than those they represent, on average. Column 1 shows the results for school board elections. The coefficient difference between candidates for school board and non-candidates is 0.107 which, as I show in the next row in Table 2, implies that candidates for school board live in homes about 11.2% higher in value than the average homeowner in their county in the
Table 2 – Candidates for Political Office Have Higher Home Values Than the Population They Represent: Home Value Differences, California Local, State and U.S. House Election Candidates 2007-2018.

<table>
<thead>
<tr>
<th>Office Type</th>
<th>Sch. Board (1)</th>
<th>City-Level (2)</th>
<th>County-Level (3)</th>
<th>State Leg. (4)</th>
<th>U.S. House (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidate</td>
<td>0.107</td>
<td>0.157</td>
<td>0.309</td>
<td>0.425</td>
<td>0.471</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.005)</td>
<td>(0.006)</td>
<td>(0.012)</td>
<td>(0.015)</td>
</tr>
<tr>
<td>Home Value % Difference</td>
<td>11.24%</td>
<td>16.96%</td>
<td>36.21%</td>
<td>52.98%</td>
<td>60.18%</td>
</tr>
<tr>
<td></td>
<td>[10.74%, 11.75%]</td>
<td>[15.92%, 18.00%]</td>
<td>[34.71%, 37.70%]</td>
<td>[49.51%, 56.44%]</td>
<td>[55.60%, 64.76%]</td>
</tr>
<tr>
<td>Number of Candidates</td>
<td>9,806</td>
<td>9,042</td>
<td>2,865</td>
<td>976</td>
<td>339</td>
</tr>
<tr>
<td>Observations</td>
<td>56,716,354</td>
<td>31,909,750</td>
<td>38,387,384</td>
<td>37,926,774</td>
<td>23,495,954</td>
</tr>
<tr>
<td>Average Home Value</td>
<td>332,508</td>
<td>336,753</td>
<td>347,688</td>
<td>344,320</td>
<td>332,626</td>
</tr>
<tr>
<td>City × Year FEs</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>County × Year FEs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses. Each observation is an owner-occupied housing unit-year. Candidate is an indicator for whether the housing unit-year is owned by a candidate for office in that year. Offices for school-level elections in column 1 include School Board and School Superintendent. Offices for city-level elections in column 2 include City Clerk, City Council, and Mayor. Offices for county-level elections in column 3 include Assessor, Auditor, District Attorney, Judge, Sheriff, Supervisor, and Treasurer. Offices for state legislative elections in column 4 include State House and State Senate. Regression estimates are weighted by the total number of candidates in each county-year (columns 1, 3, 4, and 5) or city-year (column 2). Home Value % Difference is the percent difference in home values between candidates and constituents implied by the coefficient on Candidate. The 95% confidence interval for this percent difference is shown in brackets.

year they run for office. Given that the average home value in the sample is about $332,500, this 11.2% difference represents around $37,000. Because there are nearly 10,000 candidates for school board elections during this time period, this difference is precisely estimated: the 95% confidence interval ranges from about 10.75% to 11.75%.

Column 2 of Table 2 estimates the same equation for city-level offices, meaning I now use city-by-year fixed effects. City-level offices in the sample include mostly city council members and mayors, but also include a few treasurers, clerks, and other positions (see Table 1). Candidates for these offices live in homes about 17% higher in value than their homeowner constituents, on average. Column 3 does the same for county-level offices – about half of which are county supervisor positions, but which include a wide variety of elected positions – and the differences grow much larger: candidates for these county-level offices live in homes about 36.2% higher in value compared to the average homeowner in their county in the year they run for office. These differences grow even larger in column 4 when I estimate the equation for state legislative candidates, who live in homes about
53% higher in value compared to the average homeowner in the county they live in. Finally, to benchmark these home value differences against candidates for Congress, in column 5 I estimate home value differences for candidates for the U.S. House of Representatives from California. I find that candidates for the U.S. House live in homes about 60% higher in value than the average in their county.

Overall, these results show that candidates for local, state, and federal offices seem to be much wealthier than those they represent, and these differences seem to grow with the prestige of the office.

3.3 Housing Wealth Differences by Office

Having characterized a substantial average wealth gap between candidates for local offices and the average homeowner in their constituency, in this section I break out these wealth differences by each elected office in my sample. To do so, I estimate Equation 1 separately for each elected office and report housing wealth differences between candidates and their homeowning constituents in the same year. Figure 2 shows these estimates. The largest differences, perhaps unsurprisingly, come from higher prestige offices like state legislative and U.S. House seats, as well as from offices with candidates from the legal profession – district attorneys and judges. District attorneys in the sample, for example, live in homes over 65% higher in value than the average homeowner in their county. Overall, wealth differences between candidates and those they represent show up across nearly every office in the sample.

3.4 Robustness of Wealth Gap Estimates

In this section, I briefly review possible threats to interpreting these home value differences as evidence of a wealth gap. In each case, I provide evidence to bolster confidence in the main results.
First, do home values proxy of a candidate’s wealth? As I discussed earlier, I collect information from the California Fair Political Practices Commission with California state legislative officeholders’ reported assets. I detail this data collection effort in Section A.1 of the Appendix, and in that section I show that an officeholder’s logged home value and logged reported assets on these financial disclosure forms correlate strongly. This suggests that the housing wealth measure is likely an appropriate proxy for an individual’s overall level of wealth.

Second, in Section A.3 of the Appendix I show that the main results are similar across a range of match stringency choices.

Third, do these wealth gaps remain after incorporating non-homeowners into the analysis? One drawback of the comparisons so far is that I compare homeowning candidates’ home values to the average housing unit in the place they run, rather than to the average individual’s level of housing wealth. Because the homeownership rate is higher among candidates than among the general public, incorporating non-homeowning individuals into
these comparisons increases the housing wealth differences I estimate. In other words, adjusting the set of non-candidates to include those who have no housing wealth will only bring down the average housing wealth among non-candidates more than it would for candidates, and therefore increase the estimated differences in housing wealth between candidates and non-candidates. I show the wealth gap estimates that include renters in Section A.4 of the Appendix.

Fourth, do these wealth gaps remain when using a measure of home equity rather than home values? One concern with the main result is that it simply compares the values of homes — which we could worry might not reflect an actual measure of housing wealth. It could be, for example, that candidates live in higher value homes than non-candidates, but these candidates could just be financing most of their home, and so does not actually reflect differences in housing wealth status. To generate a measure of home equity — that is, the value of the home minus any outstanding mortgage balances — I take advantage of the fact that mortgage transactions in California are also public information. I describe the procedure in detail in Section A.5 of the Appendix, where I find that using home equity increases the estimated wealth gaps because candidates tend to have paid off a larger fraction of their homes than have non-candidates, on average.

Finally, the property data records assessed home values for tax purposes rather than estimates of the market value of homes. In Section A.6 of the Appendix, I adjust for home value assessment schedules in California and show that the estimated wealth gaps increase after making this adjustment.

Overall, I show that 1) home values proxy for an independent measure of candidates’ wealth, 2) wealth gaps are similar across match stringency, 3) wealth gaps remain when including renters, 4) wealth gaps remain when using home equity rather than home values, and 5) wealth gaps remain when adjusting for home value assessment schedules. All of these bolster confidence in the conclusion that candidates are wealthier than their constituents across many elected offices in the United States.
3.5 Occupational Barriers to Entry May Explain a Large Amount of the Wealth Gap

Figure 2 shows that the largest wealth gaps appear for higher prestige offices, like state legislative seats, as well as for district attorneys and county judges. One surprising pattern in Figure 2 is that the wealth gap is much smaller for mayoral candidates, despite the general intuition that a mayoral seat is perhaps one of the more attractive local offices in California.

What explains the rank order of home value differences in Figure 2? In this section, I suggest one important explanation for the findings in Figure 2: that occupational barriers to entry help to explain a large amount of the wealth gap.

To show this, I exploit a unique feature of the ballot in local elections in California: ballot designations. Each candidate for local office in California may submit a proposed ballot designation, which is a short description of the candidate’s background that may be relevant to the office they are seeking. I use the text of these ballot designations and a Structural Topic Model (STM) to infer candidates’ backgrounds across different offices (Roberts, Stewart, and Tingley 2014). I discuss the procedure and results in detail in Section A.10 of the Appendix, but overall I show that candidates for offices with a relatively small wealth gap — school board members, city council members, and mayors — tend to be drawn from a wide array of professional backgrounds, while candidates for offices with a larger wealth gap — like district attorneys and judges — nearly universally reflect a background in

---

16 See https://www.sos.ca.gov/administration/regulations/current-regulations/elections/ballot-designations/.
17 For example, many incumbent candidates simply list their ballot designation as incumbent, or they list the title of the office for which they are seeking re-election. Non-incumbent candidates submit a wide range of ballot designations. For example, many school board candidates list “retired teacher” or “parent” as their ballot designation, candidates for judgeships often list something like “civil rights attorney” or “prosecutor,” and candidates for a wide variety of offices list “business owner” as their ballot designations.
18 STM is a probabilistic topic model, similar to Latent Dirichlet Allocation (Blei, Ng, and Jordan 2003), such that for each text document it generates a set of weights over distinct topics. The user selects the number of topics but does not pre-specify labels.
law. I interpret this as suggestive evidence that a large portion of the wealth gap for these races may simply be explained by the occupational pre-requisites for holding that office.\footnote{In Figure A.11 in the Appendix, I compute the average home value for each occupational background in the dataset, and I show that candidates with a legal background have much higher home values than any other type of candidate in local elections.}

### 3.6 Candidates for Judicial Offices Have Higher Home Values Than Comparable Non-Candidate Lawyers

So far, I have shown evidence of a large wealth gap between candidates for state and local offices and their constituents, with occupational differences between candidates and constituents being one possible contributor to the wealth gap. Next, I show that these occupational barriers to entry can explain some, but not all, of the wealth gap. To compare candidates' housing wealth to the wealth of non-candidates with similar backgrounds, I gather data on every lawyer admitted to the State Bar of California, which includes each individual’s name, license status, law school, and date that they were admitted to the Bar. I compare candidates for positions that explicitly require legal experience in order to seek office — district attorney and superior court judges — to homeownering lawyers in their area. By making these comparisons, I can estimate the wealth gap after adjusting for education and professional background.

Table 3 shows that candidates for district attorney and county judgeships have higher home values than comparable lawyers who do not run for office. In column 1, I estimate that, in the year they run for office, candidates’ homes are over nearly 17% higher in value, on average, than lawyers in their county who did not run for office. This is much smaller than the approximately 60% wealth gap in Figure 2 between judicial candidates and the general population, but it still suggests that wealth differences between candidates and non-candidates persist even after controlling for professional background. In column 2, I adjust the fixed effects to incorporate more fine-grained information on individuals' backgrounds: in column 2 the set of fixed effects imply that, for each candidate in the year they run for
Table 3 – Candidates for District Attorney and County Judgeships Have Higher Home Values Than Comparable Non-Candidate Lawyers: Home Value Differences, California District Attorney and Judge Candidates 2008-2018.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidate</td>
<td>0.156</td>
<td>0.146</td>
<td>0.199</td>
</tr>
<tr>
<td></td>
<td>(0.037)</td>
<td>(0.042)</td>
<td>(0.069)</td>
</tr>
<tr>
<td>Home Value % Difference</td>
<td>16.92%</td>
<td>15.77%</td>
<td>22.01%</td>
</tr>
<tr>
<td></td>
<td>[8.67%, 25.81%]</td>
<td>[6.54%, 25.80%]</td>
<td>[6.55%, 39.71%]</td>
</tr>
<tr>
<td>Number of Candidates</td>
<td>258</td>
<td>258</td>
<td>258</td>
</tr>
<tr>
<td>Observations</td>
<td>504,962</td>
<td>504,962</td>
<td>504,962</td>
</tr>
<tr>
<td>Average Home Value</td>
<td>590,256</td>
<td>590,256</td>
<td>590,256</td>
</tr>
<tr>
<td>County × Year FEs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>County × Year × Bar Year FEs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>County × Year × Bar Year × Law School FEs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses. Each observation is an owner-occupied housing unit-year. Candidate is an indicator for whether the housing unit-year is owned by a candidate for office in that year. Non-candidates in this analysis are all California lawyers who match to a housing record. Year refers to the year in which candidates run for office, and bar year refers to the year each lawyer in the dataset was admitted to the State Bar of California. Offices included in this analysis are county District Attorney and county Judge offices. Home Value % Difference is the percent difference in home values between candidates and lawyer constituents implied by the coefficient on Candidate. The 95% confidence interval for this percent difference is shown in brackets.

office, I only compute their home value differences using lawyers who live in the same county and were admitted to the State Bar of California, which controls for possible differences between candidates and non-candidate lawyers average career stage. Again, the wealth gap remains around 16%.

Finally, in column 3 I vary the fixed effects to include information on each individual’s law school. Making comparisons between candidates and non-candidate lawyers who live in the same county, were admitted to the Bar in the same year, and who went to the same law school, the wealth gap remains substantial. Again, the evidence suggests that candidates are much wealthier than their constituents, even after adjusting to control for professional background.

There are two main ways to interpret this finding. On the one hand, these within-occupation wealth gaps may be encouraging. Holding education and professional background
fixed, we may prefer that higher earning individuals run for office if their earning status correlates with their competence or political ability, as some research in political economy argues. On the other hand, the presence of a within-occupation wealth gap suggests that constraints on the supply of potentially qualified, lower-wealth candidates cannot explain entire observed wealth gap. In other words, there may be ample room to increase economic representativeness without sacrificing on the baseline professional qualifications that are required for holding some offices.

3.7 Summary

Overall, in this section I show that there is a large wealth gap between candidates for state and local offices and those they represent. This wealth gap appears even for small, local offices at the earliest stages of the candidate pipeline, and it grows larger for state legislative, district attorney, and judicial offices. Occupational barriers to entry — where many offices require professional experience that correlates with higher earnings, like a law degree — may explain a large portion of the wealth gap, but it cannot explain all of it, as candidates for positions that require a background in law are wealthier than non-candidate lawyers.

4 Elections Favor Wealthier Candidates

So far, I have shown that candidates for state and local offices are much wealthier than their constituents, on average, and that variation in candidates’ backgrounds across offices may explain a large portion, but not all, of this wealth gap. But how much of the wealth gap can be attributed to the decision of candidates to run in the first place, and how much of it can be attributed to who voters select from among those who run? That is, do elections advantage candidates with higher wealth?

The literature on electoral selection offers different predictions for whether elections might select for candidates with higher economic status. On the one hand, if higher wealth status
correlates with higher political ability or competence, voters might select for higher-wealth candidates (e.g. Besley and Reynal-Querol 2011; Galasso and Nannicini 2011; Baltrunaite et al. 2014; Besley et al. 2017). On the other hand, recent survey evidence in the United States suggests that voters do no exhibit a stated preference for higher-wealth candidates Carnes and Lupu (2016a), all else equal.

I use election outcomes to test these explanations. For each candidate, I observe whether they won or lost the election they ran in, and I estimate the following equation:

$$\log(\text{Home Value})_{ijt} = \beta_0 * \text{Candidate}_{ijt} + \beta_1 * \text{Candidate}_{ijt} * \text{Elected}_{ijt} + \gamma_{jt} + \epsilon_{ijt}$$

(2)

This equation is similar to Equation 1, but now includes an interaction term, the product of an indicator for whether a housing unit is owned by a candidate for office and an indicator for whether a housing unit is owned by a candidate for office who won their election. The $\beta_0$ term represents wealth differences between losing candidates and their homeowning constituents, while $\beta_0 + \beta_1$ represents wealth differences between winning candidates and their homeowning constituents.

Table 4 shows that elections tend to select for higher wealth candidates. The columns mirror those in Table 2. The results in column 1 imply that candidates for school board elections who go on to win their elections have home values about 3.2% higher in value than candidates who go on to lose the election. The coefficient on the interaction term is positive, reasonably large, and precisely estimated, showing evidence that elections advantage for higher-wealth candidates in local school board elections.

Column 2 shows the results for city-level elections. Again, elections select for wealthier candidates. Interpreting the interaction term in column 2 as a percent difference, winning candidates in city-level elections have home values about 10.26% higher than losing candidates. The same pattern holds for elections for county-level offices in column 3, state legislative offices in column 4, and U.S. House elections in column 5. Overall, the evidence

<table>
<thead>
<tr>
<th>Office Type</th>
<th>Sch. Board (1)</th>
<th>City-Level (2)</th>
<th>County-Level (3)</th>
<th>State Leg. (4)</th>
<th>U.S. House (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidate</td>
<td>0.089 (0.004)</td>
<td>0.114 (0.009)</td>
<td>0.273 (0.011)</td>
<td>0.390 (0.018)</td>
<td>0.455 (0.024)</td>
</tr>
<tr>
<td>Candidate × Elected</td>
<td>0.032 (0.005)</td>
<td>0.098 (0.011)</td>
<td>0.072 (0.013)</td>
<td>0.128 (0.020)</td>
<td>0.061 (0.032)</td>
</tr>
</tbody>
</table>

Winners vs. Losers % Difference: 3.20% [2.26%, 4.15%] 10.26% [7.93%, 12.64%] 7.43% [4.73%, 10.20%] 13.70% [9.41%, 18.16%] 6.31% [-0.13%, 13.17%]

Number of Candidates: 9,906 9,042 2,865 976 339
Observations: 55,907,151 31,185,731 38,385,003 36,023,382 23,495,954
Average Home Value: 329,976 335,874 347,703 344,950 332,626
City × Year FEs: ✓ ✓ ✓ ✓ ✓
County × Year FEs: ✓ ✓ ✓ ✓ ✓

Robust standard errors in parentheses. Each observation is an owner-occupied housing unit-year. Candidate is an indicator for whether the housing unit-year is owned by a candidate for office in that year. Offices for school-level elections in column 1 include School Board and School Superintendent. Offices for city-level elections in column 2 include City Clerk, City Council, and Mayor. Offices for county-level elections in column 3 include Assessor, Auditor, District Attorney, Judge, Sheriff, Supervisor, and Treasurer. Offices for state legislative elections in column 4 include State House and State Senate. Regression estimates are weighted by the total number of candidates in each county-year (columns 1, 3, 4, and 5) or city-year (column 2).

shows that the pool of candidates who run for office are much wealthier than those they represent, and voters seem to select candidates with higher wealth among the pool of those who decide to run.20

4.1 Wealthier Candidates’ Fundraising Advantages May Explain Their Electoral Advantage

So far, I have shown that, among the pool of candidates who choose to run for office, voters tend to select higher-wealth candidates, on average. There are two likely explanations for this pattern, which need not be mutually exclusive. On the one hand, it could be that voters select higher wealth candidates because it correlates with qualifications or attributes that voters prefer in candidates. For example, even if voters do not exhibit a stated preference

20To see patterns of electoral selection for wealth across different offices, in Figure A.12 in the Appendix I estimate the interaction term from equation 2 separately for each type of office in my sample. The estimates are noisier for some offices compared to others, but in nearly every case shows that those who win elections and end up in office have higher wealth than those who run but ultimately lose. In many cases, the pattern of electoral selection for wealthier candidates is quite strong.
Table 5 – Candidate Wealth No Longer Correlates with Winning Election After Adjusting for Campaign Fundraising: Candidates for State Legislative Elections in California, 2008-2016.

<table>
<thead>
<tr>
<th></th>
<th>Elected = 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Wealthiest Candidate in Race</td>
<td>0.134</td>
<td>0.008</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.032)</td>
<td>(0.017)</td>
<td></td>
</tr>
<tr>
<td>Raised Most Money in Race</td>
<td>0.852</td>
<td>0.851</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.017)</td>
<td>(0.017)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.424</td>
<td>0.065</td>
<td>0.062</td>
</tr>
<tr>
<td>Number of District-Years</td>
<td>494</td>
<td>494</td>
<td>494</td>
</tr>
<tr>
<td>Observations</td>
<td>1,002</td>
<td>1,002</td>
<td>1,002</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses. Each observation is a candidate-year for California State House or State Senate. Wealthiest Candidate in Race is an indicator for whether the candidate-year observation had the highest home value of any candidate in the general election in that year. Raised Most Money in Race is an indicator for whether the candidate-year observation had the highest total campaign contributions of any candidate in the general election in that year.

for higher wealth candidates, they may prefer a candidate for a judgeship with 30 years of experience practicing law as opposed to a candidate with 10 years of experience practicing law. On the other hand, separate from voters’ preferences, wealthier candidates could be otherwise advantaged in elections if economic status correlates with higher social capital, or deeper ties to potential donor networks — attributes that may give them fundraising advantages over lower-wealth candidates.

To test these explanations, I collect data on campaign contributions for state legislative candidates in my dataset, which comes from the National Institute on Money in Politics. For each state legislative race, I code an indicator for whether the candidate had the highest housing wealth of any candidate in their general election race, along with an indicator for whether they had the largest total of campaign contributions of any candidate in their race.

In Table 5 I evaluate the relationship between winning elections and candidate wealth, both before and after adjusting for campaign fundraising. In column 1, I show that the wealthiest candidate in a state legislative race is elected at a rate over 13 percentage points
higher than candidates who are not the wealthiest in their race. But a much stronger relationship exists between candidate success in elections and fundraising: in column 2, I show that the candidate with the highest total of campaign contributions won their election at a rate over 85 percentage points higher than candidates that did not raise the most money in the campaign. Candidate wealth and campaign fundraising are positively related (see Figure A.13 in the Appendix) such that in column 3, where I include both candidate wealth and campaign fundraising in the regression, the coefficient on candidate wealth reduces nearly to zero. After adjusting for campaign fundraising, wealthier candidates perform no better than less wealthy candidates, on average. These results are simply descriptive, and interpreting them requires caution. Because I am not approximating any type of experiment that varies candidates’ wealth status or the campaign finance environment, this pattern of results does not prove that campaign fundraising is the only avenue through which wealthier candidates are favored in elections. Nonetheless, the pattern is consistent with the possibility that campaign finance reforms aimed at equalizing candidates’ fundraising abilities may increase the economic representativeness of elected officials.

5 District-Based Elections May Lessen the Wealth Gap

So far, I have shown that those who run for political office are much wealthier than their constituents, on average, and that at the election stage voters tend to select wealthier candidates.

Do electoral rules governing how candidates are selected affect the wealth status of those who end up in office? Following a recent literature that estimates the effects of switching to district elections on descriptive representation (Collingwood and Long 2019; Abbott and Magazinnik 2020), I leverage changes across California in how local elected officials are selected in city council and school board elections as a product of the California Voting
As mentioned earlier, the CVRA induced over one hundred city councils and school districts to move from at-large elections, where voters across an entire constituency vote for candidates for each available seat, to district-based elections, where the constituency is broken into many single-member districts and voters simply choose the candidate for their district. In many cases, these changes occurred as a result of legal proceedings, while in other cases cities or school districts voluntarily adopted single-member districts to prevent such litigation.

Figure 3 shows the fraction of candidates running in California local elections that are running in district-based elections, as opposed to at-large elections, plotted separately for city council and school board races. After the CVRA passed in 2001, the share of candidates running in district-based elections increased steadily. For city council races in California, for example, about 15% of candidates who ran for office around the CVRA’s passage were running for district seats, but by 2018 over 35% of candidates were seeking district-based seats. It has also become increasingly common for school board elections to be held under district-based systems over time.

There are reasons to believe that moving elections from at-large to district systems might decrease the wealth gap between elected officials and their constituents, at least for some types of races. In Richmond, California, for example, a 2018 lawsuit alleged that at-large school board elections for West Contra Costa Unified did not give African-American and Latino voters adequate representation on the board, and therefore violated the CVRA. As the West Contra Costa Unified school district moved from at-large to district elections starting in 2020, claims about the drawbacks of at-large systems went beyond descriptive representation on the basis of race: as one resident argued: “winners [under at-large systems] came from the district’s affluent areas with significant financial backing from special interest groups,” and that smaller voting districts would lower campaigning costs and make it easier

21 For a theoretical discussion of how district elections might increase descriptive representation of minority groups, see Trounstine and Valdini (2008) and Marschall, Ruhil, and Shah (2010).

for candidates to run successful grass-roots campaigns.\textsuperscript{23} These claims would suggest that district elections may reduce the wealth gap between candidates for school board races and those they represent.

### 5.1 District Elections Decrease Average Wealth of School Board Candidates and Elected Representatives

To estimate how switching from at-large elections to smaller, district-based elections affect the wealth status of the pool of candidates who choose to run for local office, I estimate the following equation:

\textsuperscript{23}The resident went on to describe how, because each candidate would only need to reach about 25,000 voters under district elections rather than 125,000 voters under at-large elections, smaller districts would help level the playing field for candidates with fewer financial resources (https://edsource.org/2019/california-school-district-latest-to-change-board-elections-to-better-reflect-diversity-of-community/609854).
\[
\text{Log(Home Value)}_{ijt} = \beta_0 \ast \text{Candidate}_{ijt} + \\
\beta_1 \ast \text{Candidate}_{ijt} \ast \text{District Election}_{jt} + \gamma_j + \delta_t + \epsilon_{ijt}
\] (3)

where \(i\) is an individual’s owner-occupied housing unit, \(j\) is the jurisdiction, and \(t\) represents the year. The \(\gamma_j\) and \(\delta_t\) terms represent jurisdiction and year fixed effects, respectively, to control for time-invariant characteristics of each jurisdiction that affect home values as well as common yearly shocks to home values. \(\beta_1\), the coefficient on the interaction between a candidate indicator and a district election indicator, captures the extent to which a jurisdiction’s switch from at-large to district-based elections affects the wealth differential between candidates and their constituents.

The analysis I outline above is a difference-in-differences design in which I compare within-jurisdiction differences between candidates and constituents’ home values over time across within-jurisdiction changes in how candidates are selected (at-large versus single-member districts). For these estimates to represent the causal effect of adopting district based elections on differences between candidates’ and constituents’ housing wealth, the trends in home values in areas that adopt electoral reforms must provide valid counterfactuals for the trends we would have observed in areas that did not adopt the reforms had those areas switched.

In column 1 of Table 6, I focus on the effect of switching from at-large to district elections on the wealth gap for candidates in local school board races. The results imply that school board candidates in at-large races lived in homes about 13.9% higher in value than the average in their county, and that switching to district-based elections reduced this gap substantially to about 4.7%. The district reform seems to have encouraged the entry of lower-wealth candidates, which is consistent with claims that such reforms lower the costs of campaigning and possibly encourage candidates with fewer financial resources to run.
Table 6 – Effect of District-Based Elections on Candidate Housing Wealth, 2007-2018. Switching from at-large to district-based elections seems to reduce the wealth gap between school board candidates and their constituents.

<table>
<thead>
<tr>
<th>Office Type</th>
<th>Log(Home Value)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>School Board</td>
<td>City Council</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Candidate</td>
<td>0.130</td>
<td>0.167</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.010)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidate × District Election</td>
<td>-0.084</td>
<td>0.007</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.021)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elected</td>
<td>0.149</td>
<td>0.201</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.008)</td>
<td>(0.014)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elected × District Election</td>
<td>-0.115</td>
<td>0.016</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
<td>(0.031)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of Candidates 9,806  5,113  7,465  3,378
Observations 56,716,354  56,243,667  30,986,548  30,248,939
Average Home Value 332,508  333,350  331,934  333,729

County FEs ✓ ✓
City FEs ✓ ✓ ✓ ✓
Year FEs ✓ ✓ ✓ ✓

Robust standard errors in parentheses. Each observation is a housing unit-year. Candidate is an indicator for whether the unit is owned by a candidate for office. Elected is coded as 1 if the candidate won elected office. District Election is coded as 1 if the candidate was running for a district-level seat. Regression estimates are weighted by the total number of candidates in each county-year (columns 1 and 2) city-year (columns 3 and 4).

Next, does reforming at-large election systems affect the wealth status of those who are ultimately elected? Even if reforming the electoral system to create smaller districts encourages the entry of lower-wealth candidates, as I show in column 1, it could still be that these candidates are filtered out at the election stage. In column 2, I limit the analysis just to non-candidates and those who ultimately win school board offices. The results show that district elections led to a large decline in the wealth of those who ultimately won school board seats. The wealth gap between officeholders and constituents was about 16.1% under at-large systems, and district reform reduced that gap to about 3.5%, on average. This
finding suggests that electoral reforms that reduce the costs of campaigning may not only encourage more lower-wealth candidates to run for office, but it also seems to reduce the wealth gap between constituents and officeholders.

Column 3 shows the results for city council elections, which are slightly noisier and much more mixed. Switching from at-large to district elections did not seem to substantially affect the wealth status of those who run for city council seats. And looking at column 4, it appears that the reform also did substantially alter the wealth status of those who won city council seats. It is hard to know what to make of these estimates. On the one hand, city council races are very different from school board races: in general they are more competitive, and many single-member city council districts are still quite large, casting doubt on whether the reform sufficiently decreased the costs of running to encourage lower-wealth candidates to run. On the other hand, the effect estimates for city council races are slightly noisier than for school board races, and perhaps too uncertain to make any strong conclusions. Nonetheless, the evidence in this section identifies reforms to at-large elections as one possible policy option that could reduce the candidate wealth gap — at least for very localized school board offices.

6 Conclusion

This study makes four key contributions to the understanding of descriptive representation and electoral selection in the United States. First, it quantifies how economically unrepresentative both candidates and elected officials are for state and local offices in the United States. While the vast majority of previous work focuses on the wealth of candidates for federal offices, fewer have studied whether these wealth differences between elected officials and citizens extend to state and local elected offices — which are key stepstones in the pipeline to federal office. I show that candidates for state and local offices are much wealthier than
those they represent, on average, and this wealth gap appears across nearly every state and local elected office in California.

Second, I explore an important key driver of the unrepresentativeness of elected officials: occupational barriers to entry. Using ballot designation information in California to infer candidates’ backgrounds, I show that the wealth gap is much larger for offices that draw from a limited set of professions: like district attorneys and judges, for example. I show that the wealth gap is much smaller for city council and mayoral offices, which I show draw from a much wider range of professions. This finding suggests that making local elected offices more representative may rely in part on how much these offices attract candidates from a diverse set of occupational backgrounds.

Third, by linking both winning and losing candidates to their housing wealth, I characterize how much of the wealth differences between those who hold office and those they represent manifests at the entry stage (where candidates choose to run) versus the selection stage (where voters choose from among the pool of candidates). I show that both stages contribute to the wealth gap: those who run for office are much wealthier, on average, but voters also select higher-wealth candidates from among those who choose to run. This suggests that both entry and electoral selection are important sources of the economic unrepresentativeness of elected officials in the United States.

Finally, I show suggestive evidence on which features of elections contribute to the observed wealth gap between elected officials and constituents. First, wealthy candidates may win elections at higher rates because of their fundraising advantages over their lower-wealth opponents. After adjusting for fundraising advantages, candidate wealth no longer correlates with electoral success, at least for the state legislative seats that I study. While this evidence is not design-based and is purely descriptive, it does identify campaign finance as one local-level electoral factor that warrants further study. Second, switching from at-large to district-based elections — an electoral reform that has shown to increase descriptive representation both for women (Crowder-Meyer, Gadarian, and Trounstine 2015) and for racial
minorities (Abott and Magazinnik 2020; Collingwood and Long 2019) — may mitigate the wealth gap wealth between candidates and constituents, possibly by reducing campaigning costs and encouraging the entry of lower-wealth candidates.\textsuperscript{24} Taken together, these findings suggest that reforms to at-large elections as well as to campaign finance may increase economic representativeness across a variety of state and local offices in the U.S.

\textsuperscript{24}Hankinson and Magazinnik (2020) shows that district election reforms affect the supply and spatial distribution of collective goods, most notably multi-family housing.
References


Online Appendix

Intended for online publication only.

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A.1 Validating Housing Wealth As a Measure of Candidates’ Wealth Profile

In this section, I correlate the assessed home value of California state legislative officeholders in 2016 with their reported assets, which come from the California Fair Political Practices Commission. Elected officials in California are required to report their assets on a Form 700, or Statement of Economic Interests (see http://www.fppc.ca.gov/Form700.html). Figure A.1 summarizes the types of assets reported through these Form 700 documents. For example, individuals report the value of stocks, property that is not used as a personal residence, non-governmental income, and gifts from businesses. These forms do not include the value of an individual’s government bonds, mutual funds, savings, personal residences, or government salary. Nonetheless, these forms provide a useful resource to test the extent to which my measure of an individual’s assessed home value might be a reasonable proxy for an individual’s broader wealth portfolio.

I gather Form 700 statements for each member of the California state legislature in 2016 and use these statements to measure total value of an individual’s reported assets. In Figure A.2, I plot binned averages of logged reported assets across the logged home value from the property records data. These two measures are strongly positively correlated with a correlation coefficient of 0.533. This suggests that the home value measure I use throughout the analyses seems to be a reasonable proxy for an individual’s wealth portfolio, at least for members of California’s state legislature.

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Common Reportable Interests</th>
<th>Common Non-Reportable Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1: Investments</td>
<td>Stocks, including those held in an IRA or 401K. Each stock must be listed.</td>
<td>Insurance policies, government bonds, diversified mutual funds, funds similar to diversified mutual funds.</td>
</tr>
<tr>
<td>A-2: Business Entities/Trusts</td>
<td>Business entities, sole proprietorships, partnerships, LLCs, corporations and trusts. (e.g., Form 1099 filers).</td>
<td>Savings and checking accounts, and annuities.</td>
</tr>
<tr>
<td>B: Real Property</td>
<td>Rental property in filer’s jurisdiction, or within two miles of the boundaries of the jurisdiction.</td>
<td>A residence used exclusively as a personal residence (such as a home or vacation property).</td>
</tr>
<tr>
<td>C: Income</td>
<td>Non-governmental salaries. Note that filers are required to report only half of their spouse’s or partner’s salary.</td>
<td>Governmental salary (from school district, for example).</td>
</tr>
<tr>
<td>D: Gifts</td>
<td>Gifts from businesses, vendors, or other contractors (meals, tickets, etc.).</td>
<td>Gifts from family members.</td>
</tr>
<tr>
<td>E: Travel Payments</td>
<td>Travel payments from third parties (not your employer).</td>
<td>Travel paid by your government agency.</td>
</tr>
</tbody>
</table>
Figure A.2 – Relationship Between Home Value and Reported Assets. California State Legislative Candidates, 2016.

Correlation Coefficient = .533
A.2 Details of the Record Linkage Procedure

In this section, I summarize the details of the record linkage procedure in more detail than in the main text. I detail the linking procedure separately for local offices and for state legislative offices.

A.2.1 Matching Candidates for Local Offices to Property Records

I take the following steps to link candidates for local offices to their property records. First, I use candidate information in the California Elections Data Archive (CEDA) to generate the list of candidates to link to the property records. Each row in the CEDA data is a candidate-race, so in each row I lots of information, including the election year, election type, and candidate’s first and last name. For school-level and county-level offices, I observe the name of the county in which the candidate is seeking office, and for city-level offices I observe the name of the city in which the candidate is seeking office.

Second, I prepare the CoreLogic tax and deed records for the linking. The CoreLogic records span from 2007-2016, and for each year contain property-level information: the property type, owner’s name, assessed value, property tax in that year, and full address, among other things. I limit the set of property records to single-family homes, condominiums, duplex, and apartments, and I remove any records that are listed as being corporate-owned as well as any records that are not owner-occupied. Many property records list the first and last name of two owners, in separate fields. If there are two property owners I search each owner’s name separately, meaning I allow for candidates to be linked to homes even if they are listed as the second owner.

Third, for each candidate-year, I search the CoreLogic property records in the year immediately prior to when the candidate ran for office, and I export a list of “potential matches.” For each candidate-year observation, I limit the property records search to the relevant jurisdiction. For school-level and county-level offices, for example, I search the set of property records in the same county in which the candidate is running for office. For city-level offices, I search the set of property records in the same city in which the candidate is running for office. In doing this search, I compute a string distance metric on last name and first name between each candidate-year observation and every property record in their jurisdiction. Specifically, I use the `stringdist` package in R to compute the Jaro-Winkler string distance for last name and first name separately, setting the penalty parameter to $p = 0.1$. For each candidate-year, I export their full set of “potential matches,” meaning links that have a string distance metric of less than 0.05 on last name and less than 0.6 on first name.

Note that because the CoreLogic property records span from 2007-2016, I search the 2007 records for any candidate who ran for office in 2006 or earlier. As I note in the main text, I ultimately drop candidates who ran in 2006 or earlier from the analysis.

Fourth, I filter the set of potential matches to select the closest match. In the main analysis, I do this filtering by summing the string distance on first and last name and selecting the match with that minimizes that quantity, subject to the constraint that it is less than 0.2. I discuss the tradeoffs between different match thresholds in Section A.3, and in that section I show that the main results are similar across a range of match stringency choices. I drop candidates for which there are multiple exact matches on first and last name.
because I do not have additional information to disambiguate between which property record is a true match.

The final dataset, then, as described in Section 2, consists of each owner-occupied housing unit-year, and with this linking procedure I include a simple dummy variable for whether that housing unit-year was owned by a candidate for local office.

### A.2.2 Matching Candidates for State Offices to Property Records

I take a very similar approach to link candidates for state legislative offices to their property records, with one small modification. For local offices, I could identify an individual’s likely area of residence based on the county or city where they run for local office. For state legislative offices, however, candidates might own a home anywhere in their state legislative district, a geography that is not observed in the property records. Many state legislative districts in California cover parts of multiple counties, making it more difficult to define a sufficiently small geographic area to search for potential matches. 45% of California State House Districts cover multiple counties, and more than two-thirds of California State Senate districts cover multiple counties. As the set of property records for the search increases, the risk of false positives in the merge, where a candidate is mistakenly linked to a property record they do not actually own, increases. This is because as the set of records to search increases, the likelihood of duplicate first and last names increases.

To help winnow the set of potential matches for each state legislative candidate, I first search for them in a publicly available dataset where state legislative district is observed: the California voter file. The California voter file is from 2018 and comes from L2, a voter file vendor.

I implement the same name string matching search and filtering process described in the matching above, but instead I search within state legislative district in the voter file rather than within county or city in the property records. For the state legislators who match to the voter file, I use the zip code of their registration address to define the set of property records to search. This procedure helps to narrow the set of potential matches and bring down the risk of false positives in the merge that comes from searching a large set of property records only on first and last name. For state legislators who do not match to the voter file, I would still like to search for them in the property records. To define the set of property records for the search, I search for them in the county within their state legislative district that has the most registrants. For state legislative districts that are fully contained within one county, I search for candidates in the property records within that county. For state legislative districts that cover multiple counties, I search for candidates in the property records in the county that has the most registrants for that state legislative district according to the voter file.

After finding the appropriate set of property records to search within for each state legislative candidate, I obtain potential matches based on approximate string matching on first and last name, and filter the potential matches to get the closest match based on the exact same name distance metric I described above for candidates for local offices.
A.3 Main Results Across a Range of Match Stringencies

In this section, I show the main results across a range of thresholds for declaring a candidate and property record pair a match. Choosing a match threshold means deciding how to trade off the potential for false positives and false negatives in the linking. On one extreme, a the most constrained match (exact match on first and last name) will keep the false positive rate low, meaning the records I declare a match under this approach are likely to be true matches. The downside of an exact matching approach is that the overall match rate will be relatively low, and the potential for false negatives relatively high. In other words, a very constrained matching procedure will make us confident that those who are matched are indeed true matches, but runs the risk of leaving out many candidates who do indeed own a home.

On the other extreme, a very loose matching threshold will increase the overall match rate and decrease the false negative rate, with the downside of increasing the rate of false positives. In other words, more candidates would be linked, but as the name string distance increases between two records, the more likely it is that two records will be mistakenly declared a match when they in fact correspond to two different people.

In my particular setting, I prefer a more constrained matching threshold. The main source of bias in my wealth gap estimates would come from false positives in the linking process. The number of candidates is much smaller than the number of non-candidates in the dataset, so mistakenly linking a candidate to a property record of a non-candidate (false positive) will bias the estimated wealth gap much more than mistakenly coding a candidate’s true property record as belonging to a non-candidate (false negative).

I opt for a matching threshold such that the summed string distance for a candidate and property record’s first and last name (which I describe in detail in Section A.2) is less than 0.2. This is a relatively constrained match, but still allows for some approximate matching on name. For example, a candidate with the first name “Bernie” and last name “Sanders” would have a summed string distance of about 0.15 with a hypothetical property record belonging to an owner with the first name “Bernard” and last name “Sanders,” and so would be declared a match under my preferred matching threshold.

In Figure A.3 I show the estimated wealth gaps from the main results in Table 2 across a range of matching thresholds. The figure shows that the estimated wealth gap varies slightly across a range of matching thresholds, but in each case the estimated wealth gap remains substantial. The x-axis in each plot in Figure A.3 is the estimated wealth gap between candidates and homeowners in their jurisdiction, and the y-axis describes the match stringency. “Exact Match” represents the matching threshold where candidates match exactly to a property record on first and last name, and every other matching threshold describes the distance metric for which we are willing to accept candidates and property records as a match. I use “Match 0.20” as the threshold for the main analyses in the paper. As we can see, in each plot (school board, city-level, county-level, state legislature, and U.S House), the estimated wealth gap remains large under all match stringencies. Unsurprisingly, the estimated wealth gap tends to attenuate as the matching threshold increases because we are
increasing the risk of false positives — the likelihood of non-candidates spilling over into the candidate pool.

**Figure A.3 – Wealth Gap Across Different Match Stringencies.**
A.4 Incorporating Non-Homeowners

In this section, I show the results that incorporate non-homeowners into the analysis.

To do so, I collect information from the 2010 Census on the number of individuals who are at least 18 years of age who do not own homes in each county and city – measured as the population at or above age 18 minus the number of owner-occupied housing units. I add that number of individuals to each year, coding each of these added observations as non-candidates and as having 0 housing wealth. By doing so, we can interpret the housing wealth differences from Equation 1 as the difference in housing wealth between candidates and the average individual in their jurisdiction, rather than as the difference in housing wealth between candidates and the average homeowner in their jurisdiction.

One important drawback of this approach is constructing a housing wealth measure for all candidates is much more difficult than for homeowning candidates. In the main text, I only include candidates who match to property records, such that my comparisons are between homeowning candidates and their homeowning constituents. For candidates who do not match to a property record, for the purposes of this analysis I would like to code them as having a 0 for housing wealth, exactly as I do for non-homeowning members of the population. Unfortunately, for candidates who do not match to a property record, I have no way to distinguish between true non-matches and false negatives. It could be that many candidates I fail to match do indeed own homes, and so coding them as a 0 for housing wealth would severely downward bias the estimated wealth gap. Here, I opt to use the same matching threshold as in the main text, and I code candidates as having 0 housing wealth rather than missing if they do not match to the property records using this threshold. For this reason, I caution that the estimates in Figure A.4 are likely lower bounds on the population-level wealth gap.

Figure A.4 shows that the wealth gap after incorporating non-homeowners grows much larger than in the main results in Table 2, where I compare homeowning candidates to homeowning constituents. It is not surprising that the wealth gap grows considerably after incorporating non-homeowners into the analysis, given that the homeownership rate among candidates is much higher than it is in the population.
Figure A.4 – Candidates for State and Local Offices Have Higher Housing Wealth Than the Individuals They Represent.
A.5 Incorporating Mortgage Information

In this section, I show the main results after incorporating mortgage information into the analysis.

One limitation of the main result in Table 2 is that I simply compare home *values*, which may not represent a measure of an individual’s housing *wealth*. It could be that candidates live in higher value homes than non-candidates, but these candidates could just be financing most of their home, and so does not actually reflect differences in housing wealth status. To do that, we would prefer a measure of home equity — that is, the value of the home minus any outstanding mortgage balances, to get a measure of how much of the home’s value is owned outright by the property owner.

To do this, I take advantage of the fact that mortgage transactions in California are also public information. For each property-year observation, I search backwards in time to find the most recent deed transaction that includes mortgage-related information. I observe the mortgage date, mortgage amount, along with the mortgage’s length. I use this information to estimate home equity under the assumption that the mortgage is paid at a fixed rate over the mortgage’s term length.

When using this measure of home *equity*, rather than home values, the estimated wealth gaps increase (Figure A.5). The reason for this is that in the dataset, candidates tend to have paid off a larger fraction of their home than non-candidates, on average. Therefore, using a measure of home equity increases the wealth gap estimates over and above when simply comparing home values.

![Figure A.5 – Incorporating Mortgage Information Increases Estimated Wealth Gaps.](image_url)
A.6 Making Comparisons Within Sale Year

In this section, I evaluate how home value assessment schedules in California might be affecting the main wealth gap estimates in Table 2. The property data records assessed home values for tax purposes rather than estimates of the market value of homes. If home assessment schedules are different between candidates and non-candidates, this could affect the estimate.

In California, since the passage of Proposition 13 in the late 1970s, homes in California are only re-assessed upon a change in ownership, where they are assessed at their sale value. And then thereafter, the growth of assessed home values are capped at maximum of 2% per year. Knowing that, we can say that homes sold in the same year are going to be on the same assessment schedule. I observe a property’s most recent sale date in the property records, so interact the fixed effects from the main result with a sale year fixed effect, meaning I compare the home values of candidates to non-candidates who bought homes in the same area in the same year. This changes the estimand — I am no longer comparing candidates to all homeowners, but rather candidates to all homeowners who purchased homes in the same year as them.

Figure A.6 – Comparing Within Sale Year Increases Wealth Gaps.

I show the results from this within-sale-year wealth gap in Figure A.6. Doing this comparison increases the wealth gap estimates. The reason for this is that homes purchased earlier in time tend to be lower in assessed value than homes that were more recently purchased, because of Proposition 13. And candidates tend to have bought their homes earlier in time than non-candidates, on average. This means that candidates’ assessed home values in my dataset are going to be underestimates of their true home values compared to
non-candidates, meaning the main wealth gap in Table 2 is again going to be a conservative estimate.
In this section, I estimate the wealth gaps separately for candidates from the Democratic and Republican parties. Local offices in California are non-partisan, so I limit the analysis to state legislative and U.S. House candidates in California. Table A.1 shows the results. The first two columns estimate home value differences for state legislative candidates, with Democratic candidates in column 1 and Republican candidates in column 2. The estimated wealth gaps are similar across party. In columns 3 and 4, I repeat the exercise for U.S. House candidates. Again, the estimated gaps are similar across party. The point estimate is slightly higher for Republicans, but the estimates are too noisy to be confident that the wealth gaps differ across parties.

<table>
<thead>
<tr>
<th>Office Type</th>
<th>Log(Home Value)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dem State Leg.</td>
<td>U.S. House</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidate</td>
<td>0.399</td>
<td>0.409</td>
<td>0.456</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(0.025)</td>
<td>(0.028)</td>
</tr>
<tr>
<td>Home Value % Difference</td>
<td>49.02%</td>
<td>50.49%</td>
<td>57.85%</td>
</tr>
<tr>
<td></td>
<td>[43.53%, 54.52%]</td>
<td>[43.02%, 57.96%]</td>
<td>[49.31%, 66.39%]</td>
</tr>
<tr>
<td>Number of Candidates</td>
<td>543</td>
<td>373</td>
<td>163</td>
</tr>
<tr>
<td>Observations</td>
<td>35,358,726</td>
<td>36,006,089</td>
<td>21,395,854</td>
</tr>
<tr>
<td>Average Home Value</td>
<td>346,048</td>
<td>347,093</td>
<td>333,469</td>
</tr>
<tr>
<td>County × Year FEs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses. Each observation is an owner-occupied housing unit-year. Candidate is an indicator for whether the housing unit-year is owned by a candidate for office in that year. Regression estimates are weighted by the total number of candidates in each county-year. Home Value % Difference is the percent difference in home values between candidates and constituents implied by the coefficient on Candidate. The 95% confidence interval for this percent difference is shown in brackets.
A.8 Wealth Gaps by Candidate Gender

In this section, I estimate the wealth gaps separately by candidate gender. To infer a candidate’s likely gender, I use the `genderizr` package in R, which imputes gender based on first name. A more complete version of this exercise would involved collecting information on candidates’ self-identified gender, which is a promising avenue for future work on the relationship between candidate gender and wealth.

I show the results in Table A.2. For school board, city-level, and county-level offices, the wealth gaps are larger for male candidates than for female candidates. For state legislative offices, the estimates are too noisy to make claims about differences in wealth gaps across gender.

Table A.2 – Candidates for State and Local Offices Have Higher Home Values Than the Population They Represent: Home Value Differences, California State and Local Election Candidates 2007-2018, by Candidate Gender.

<table>
<thead>
<tr>
<th>Office Type</th>
<th>Candidate Gender</th>
<th>Log(Home Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sch. Board</td>
<td>Male (1) 0.146</td>
<td>Female (2) 0.009</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td></td>
</tr>
<tr>
<td>City-Level</td>
<td>Male (3) 0.183</td>
<td>Female (4) 0.107</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td></td>
</tr>
<tr>
<td>County-Level</td>
<td>Male (5) 0.325</td>
<td>Female (6) 0.280</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td></td>
</tr>
<tr>
<td>State Leg.</td>
<td>Male (7) 0.402</td>
<td>Female (8) 0.439</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Home Value % Difference</th>
<th>Candidate Gender</th>
<th>Log(Home Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (1) 0.146</td>
<td>Female (2) 0.009</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15.72%</td>
<td>0.88%</td>
</tr>
<tr>
<td></td>
<td>20.10%</td>
<td>11.29%</td>
</tr>
<tr>
<td></td>
<td>38.46%</td>
<td>32.28%</td>
</tr>
<tr>
<td></td>
<td>49.50%</td>
<td>55.15%</td>
</tr>
</tbody>
</table>

| Number of Candidates   | 6,607            | 3,389           |
| Observations           | 55,121,151       | 51,241,427      |
| Average Home Value     | 330,203          | 334,028         |
| City × Year FEs        | ✓                | ✓               |
| County × Year FEs      | ✓                | ✓               |

Robust standard errors in parentheses. Each observation is an owner-occupied housing unit-year. Candidate is an indicator for whether the housing unit-year is owned by a candidate for office in that year. Regression estimates are weighted by the total number of candidates in each county-year (columns 1, 2, and 5-8) or city-year (columns 3 and 4). Home Value % Difference is the percent difference in home values between candidates and constituents implied by the coefficient on Candidate.
A.9 Wealth Gaps by Candidate Race

In this section, I estimate the wealth gaps separately by candidate race. To infer a candidate’s likely race, I use the *wru* package in R, which imputes race based on census information and last name. As with the estimates across gender in the previous section, a stronger version of this analysis would involve coding candidates’ self-identified race, possibly from campaign statements and other news sources.

I show the results in Table A.3. For each office-level, I show that wealth gaps are larger for white candidates than for non-white candidates.

**Table A.3 – Candidates for State and Local Offices Have Higher Home Values Than the Population They Represent:** Home Value Differences, California State and Local Election Candidates 2007-2018, by Candidate Race.

<table>
<thead>
<tr>
<th>Office Type Candidate Race</th>
<th>Log(Home Value)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sch. Board</td>
<td>City-Level</td>
<td>County-Level</td>
<td>State Leg.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Candidate Race</td>
<td>White</td>
<td>Non-White</td>
<td>White</td>
<td>Non-White</td>
<td>White</td>
<td>Non-White</td>
</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
<tr>
<td>Home Value % Difference</td>
<td>18.43%</td>
<td>-5.09%</td>
<td>17.00%</td>
<td>15.29%</td>
<td>39.61%</td>
<td>20.27%</td>
</tr>
<tr>
<td>Observations</td>
<td>6,883</td>
<td>2,923</td>
<td>6,510</td>
<td>2,532</td>
<td>2,331</td>
<td>534</td>
</tr>
<tr>
<td>Average Home Value</td>
<td>333,213</td>
<td>332,993</td>
<td>337,046</td>
<td>325,491</td>
<td>345,477</td>
<td>349,389</td>
</tr>
<tr>
<td>City x Year FEs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>County x Year FEs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses. Each observation is an owner-occupied housing unit-year. Candidate is an indicator for whether the housing unit-year is owned by a candidate for office in that year. Regression estimates are weighted by the total number of candidates in each county-year (columns 1, 2, and 5-8) or city-year (columns 3 and 4). Home Value % Difference is the percent difference in home values between candidates and constituents implied by the coefficient on Candidate.
A.10 Using a Topic Model to Infer Candidates’ Backgrounds

In this section I describe the procedure for inferring candidate backgrounds in more detail.

To infer a candidate’s background from their ballot designation, I first remove all candidates who list their ballot designation as “incumbent” or who list their ballot designation as the office for which they are seeking re-election. This allows me to focus on the cases where a candidate’s ballot designation is informative about their background prior to entering elected office.

After subsetting to these candidates, I use a Structural Topic Model (STM) to identify clusterings of candidates with similar ballot designations. I set the number of topics to 10 and estimate the model. As a result of the estimation, each candidate’s ballot designation gets a vector of weights across the 10 topics that sums to 1, and each value indicates the proportion of that ballot designation text that falls in each category.

The advantage of using STM in this case is that I can estimate the relationships between the categories that the topic model discovers and candidate characteristics – like the office they are running for and their wealth, for example. I estimate the topic model, setting the number of categories to ten, and summarize the output in Figure A.7.

Based on the most common words that appear in each topic, I assign each topic a label. For example, one of the topic’s distinguishing words are “attorney,” “law,” and “deputy,” so I label that topic as indicating a background in law. For the topic whose distinguishing words are “police,” “chief,” and “sheriff,” I label the topic as indicating a background in law enforcement, and so on. I then take each candidate’s ballot designation, which has a vector of weights across these ten topics, and assign them to an occupational background based on which category has the highest weight.

Inspecting the most common and distinguishing words in each topic, I manually assign each topic a label, which I use in the main analyses on candidate backgrounds in the paper. The topic labels I assign are as follows:

- Topic 1: Business / Miscellaneous
- Topic 2: Education
- Topic 3: Management / Small Business
- Topic 4: Public Administration
- Topic 5: Community / Non-Profit
- Topic 6: Law Enforcement
- Topic 7: Consulting / Professional

I remove candidates from the topic model estimation who a) do not have a ballot designation, b) list incumbent as their ballot designation, or c) list the office for which they are seeking re-election as their ballot designation. By doing this, I focus in on the set of candidates whose ballot designation is informative about their background.
- **Topic 8**: Engineering
- **Topic 9**: Law
- **Topic 10**: Volunteer / Stay-at-Home

Figure A.7 – Structural Topic Model: Ballot Designation Topic Summary.

A.10.1 Occupational Backgrounds Across Offices
Figure A.8 shows the distribution of occupational backgrounds by office. In the top left panel, I show the occupation distribution pooling together all of the local offices in California. It shows that more than 30% of candidates for local office are categorized as having a background in business, though many miscellaneous ballot designations fall primarily in this category too. A non-trivial share of candidates come from backgrounds in public administration, community/non-profit work, law enforcement, education, law, and consulting or other professional work. Looking at the top right panel, candidates for local school board races also seem to draw candidates from a wide variety of backgrounds. While background in education is, unsurprisingly, more common in school board races than for other offices, many school board candidates come from business, public administration, and community/non-profit backgrounds. The same pattern holds for city council races. The bottom left panel of Figure A.8 shows that city council candidates are drawn from many different backgrounds.
In the bottom right panel, I show that candidates for district attorney races include ballot designations that nearly universally reflect a background in law. Given that the largest wealth gap appears for district attorney races, I interpret this as suggestive evidence that a large portion of the wealth gap for these races can be explained by the occupational prerequisites for holding that office. In Figure A.11 in the Appendix, I compute the average home value for each occupational background in the dataset, and I show that candidates with a legal background have much higher home values than any other type of candidate in local elections.

**Figure A.8 – Distribution of Candidates’ Occupational Backgrounds in California Local Elections, by Office.** Candidates for local office in California draw from a wide variety of backgrounds, especially for school board and city council races. The backgrounds of candidates for district attorney are much more limited.

Next, I show the distribution of candidates’ occupational backgrounds for the rest of the local offices in California. Figure A.9 shows the distribution of occupational backgrounds for assessors (top left), auditors (top right), clerks (bottom left), and judges (bottom right). The results show that many assessors and auditors list a background in community or non-profit work on their ballot designation, and many more come from other business or professional backgrounds. Clerks are drawn from a wide variety of backgrounds, the most common of which is a background in public administration. County judges mostly list legal experience on their ballot designation.
Figure A.9 – Distribution of Candidates’ Occupational Backgrounds in California Local Elections, by Office.

Figure A.10 shows the distribution of occupational backgrounds for school superintendents (top left), sheriff (top right), county supervisors (bottom left), and treasurers (bottom right). Perhaps surprisingly, many candidates for school superintendent list backgrounds in business or non-profit work, along with a wide variety of other backgrounds unrelated to experience as an educator. Most sheriff candidates list law enforcement experience. County supervisors are drawn from a wide variety of backgrounds, though the most common is in business. The most common background for treasurers is in public administration.
Figure A.10 – Distribution of Candidates’ Occupational Backgrounds in California Local Elections, by Office.
A.11 Average Home Value by Occupational Background

In this section, I show the average home value separately for candidates from each of the occupational backgrounds discovered by the topic model. As Figure A.11 shows, candidates with a background in law have higher home values than candidates with other backgrounds, on average. Again, this suggests that occupational barriers to entry for many offices may explain a non-trivial portion of the observed wealth gap between candidates and those they represent, at least for offices whose qualifications require legal experience.

Figure A.11 – Average Home Value by Occupational Background.
A.12 Electoral Selection by Office

In this section, I show patterns of electoral selection for higher wealth candidates separately for each state and local office in my dataset. To do so, I estimate the interaction term from equation 2 in the main text separately for each type of office in my sample. The estimates are noisier for some offices compared to others, but in nearly every case shows that those who win elections and end up in office have higher wealth than those who run but ultimately lose. In many cases, the pattern of electoral selection for wealthier candidates is quite strong.

Figure A.12 – State and Local Elections Often Select for Higher Wealth Candidates.

Electoral Selection: (Winner’s Log(Home Value) - Average Loser’s Log(Home Value))
A.13 Relationship Between Candidate Wealth and Campaign Fundraising

In this section, I show that, for state legislative races in California, candidates’ housing wealth correlates positively with campaign fundraising totals. The y-axis in Figure A.13 represents the logged total campaign contributions a state legislative candidate received for a given general election, and the x-axis represents the candidate’s logged home value in that year. As the plot shows, higher-wealth candidates raise more money in their campaigns.

Figure A.13 – Candidate Housing Wealth Versus Total Campaign Contributions.