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WHEN DEVELOPERS HOLD OFFICE: SHAPING HOUSING SUPPLY THROUGH LOCAL POLITICS[1]

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ABSTRACT: We examine the impact of city council members with real estate backgrounds on housing supply in California 1995-2019. Using candidate occupation data and a close-elections regression discontinuity design, we find that electing a developer increases approved housing units by 68% during their term. This effect fades after one term, suggesting developers influence zoning decisions more than long-term policy change. Analysis of votes extracted from council meetings shows they are especially effective in securing discretionary zoning approvals. Importantly, we find no evidence of electoral backlash, suggesting voters are generally supportive of housing expansion led by pro-development candidates.

JEL Codes: P00, R31
Keywords: Land-use Policies, Housing Market, Interest Groups

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1. Introduction

Why is it so hard to build new housing in high-demand areas like California? Despite broad consensus on the urgent need for more affordable housing, the state remains mired in a persistent housing crisis. Home prices and rents have skyrocketed and new construction continues to lag far behind demand. Although economists have long emphasized the role of supply constraints in shaping housing affordability (Glaeser et al., 2005; Gyourko and Molloy, 2015; Anagol et al., 2024), much less attention has been paid to the political economy of local land-use regulation—and in particular, to who holds power in the decision-making process. Among the many actors influencing local housing policy, real estate developers are a group whose presence in elected office has raised both concern and curiosity[1]. Their dual identity as both policymakers and industry stakeholders places them in a unique position to shape land-use outcomes. But does electing developers to local government actually lead to more housing?

This paper addresses this question by analyzing the effect of electing real estate developers to city councils on housing production in California. Specifically, we examine whether council members with real estate backgrounds—defined as land developers, home builders, and real estate agents—lead to an increase in building permits issued during their term in office. To do so, we construct a novel dataset that matches occupation data for over 30,000 city council candidates across California with housing permit outcomes between 1995 and 2019. Using a regression discontinuity design based on close elections between developer and non-developer candidates, we identify the causal impact of electing a developer on housing supply. Our findings show that electing a developer increases the number of permitted housing units by 68% during their term. The effect is particularly strong for multifamily housing, which increase by about 70% compared to a 50% rise in single-family units.

The influence of electing a developer fades after their first term in office, suggesting developers do not produce lasting regulatory reforms but instead act as effective dealmakers while in office. To explore this further, we analyze housing-related votes

[1] A prominent example is the case of Rick Caruso, the commercial real estate developer running for LA mayor in 2022 (“Rick Caruso: Mall mogul, voice of political moderates” LA Times 07/07/2022, https://www. Latimes.com/la-influential/story/2024-07-07/rick-caruso-grove-malls-politics) but there are many other examples in California and the rest of the country.

extracted from the minutes of council meetings. Electing a real estate developer to the council significantly increases votes on housing supply issues (by 47%), particularly for discretionary zoning changes (up 82%). This supports the idea that developers exert influence through discretionary power. Moreover, developers are not pivotal in securing a majority, indicating that their effectiveness lies in building support among other council members for their initiatives.

We also consider other political mechanisms. For instance, rather than openly campaigning on a pro-housing platform, developers might downplay housing issues during their campaigns and later push for their preferred projects. This behavior aligns with an opportunistic lobbying model (see also Section 2), where candidates balance lobby contributions with reelection risks. However, our evidence does not support this story: we find no voter backlash against developers in subsequent elections.

Finally, we examine the role of the real estate industry in supporting developer candidates. We find evidence that developers' decisions to run for office are coordinated at the industry level. For instance, in cities where a developer is elected, fewer developers run for office two years later while the incumbent is still in office, but more seek office four years later when some incumbents retire. This coordination helps ensure a continuous presence of developers in the political arena. While incumbent developers are not more likely to be reelected than other incumbents, the presence of a developer on the city council increases the likelihood that another developer will run and win in subsequent elections.

Housing shortages are shaped not only by market forces, but also by local political dynamics—especially the disproportionate influence of NIMBY ("Not In My Backyard") interests. City councils and planning commissions play a central role in zoning and permitting decisions, and these processes are often dominated by politically active homeowners who oppose new housing out of concern for property values, traffic, or neighborhood character. In contrast, renters and lower-income residents—who are more likely to support increased housing supply—are underrepresented in local politics (Einstein et al., 2022). YIMBY ("Yes In My Backyard") candidates have emerged as a response to these dynamics, but often lack the organizational infrastructure and voter base that bolster NIMBY resistance (Brouwer and Trounstine, 2024). In this landscape, real estate developers may better suited in terms of both the incentives and the means to pursue housing-friendly policies from within government.

Developers' potential influence can be traced to three key traits. First, they have clear and focused preferences for policies that promote housing supply and reduce regulatory barriers (Anzia, 2022). Second, they bring expertise in navigating zoning codes, permits, and real estate markets—skills that are directly relevant to land-use governance (Leffers, 2017)[2]. Third, they benefit from industry support, including recruitment, training, and mobilization from associations that actively encourage political participation[3]. These attributes help developers win elections and navigate policymaking, particularly in settings where institutional constraints and organized opposition would otherwise stall new construction.

While the role of developers as elected officials has received limited empirical attention, it is deeply connected to longstanding debates in urban economics and political science. Fischel's (2001) "homevoter hypothesis" posits that homeowners act as rational opponents of new development to protect property values. Subsequent research has shown that local land-use decisions often reflect these preferences (Glaeser et al., 2005; Einstein et al., 2022), and that efforts to override local control—through state mandates or top-down planning—have frequently failed (LA Times, 2019)[4]. More recent work explores how institutional features, such as at-large elections or partisan alignment, shape local permitting activity (Mast, 2024; Ferreira and Gyourko, 2023). However, most studies have focused on ideology or electoral structure (Kahn, 2011; Ferreira and Gyourko, 2023; De Benedictis-Kessner et al. 2025), not on the occupational backgrounds of the policymakers themselves. As a result, the influence of real estate professionals holding public office remains largely unmeasured.

This paper contributes to the literature in several ways. First, we provide novel causal evidence of the impact of real estate developers in elected office on local housing outcomes. Unlike studies that rely on campaign contributions or interest group presence (Yu, 2022; Anzia 2022), we focus on developers who hold policymaking positions,

[2] For example, when asked about his plan to address homelessness in LA, Rick Caruso remarked, "I can solve the homeless problem, and I can do it quickly because my business has been building shopping centers, and that skill is highly transferable." abc7news 10/02/2022, https:// abc7. com /los-angeles-race-for-mayor-rick-caruso-karen-bass /12406557/.

[3] For example, the National Association of Home Builder (NAHB) advises, "if many of your members are politically active, get them to run for state or local government. There is nothing better than having officials who understand the issues and sympathize with them" (NAHB, 2017, p.15).

[4] "How California's big plans to address housing affordability crashed." *LA Times*, 06/04/2019, https://www.latimes.com/politics/la-pol-ca-california-housing-bill-failures-20190604-story.

allowing us to observe how their participation in governance affects concrete decisions on housing supply.

Second, our research highlights the mechanisms through which developers influence policy. By analyzing council votes, we show that developers are especially effective in securing discretionary zoning changes—project-specific decisions that often determine whether or not a housing development can proceed. However, we find little evidence that they are able to enact broader reforms to land-use regulations, suggesting that their influence operates through targeted interventions rather than institutional change.

Third, we assess the political dynamics surrounding developer candidacies. One concern is that voters may view developers as self-interested actors, leading to electoral backlash once they are in office. Our findings indicate otherwise: developers do not face higher rates of electoral defeat or lower reelection prospects than other council members, and their presence does not trigger greater opposition in subsequent elections. In fact, we find evidence of strategic coordination within the real estate industry to support developer candidacies, with patterns of entry and exit that suggest a sustained political presence.

Finally, we explore heterogeneity in the effect of developers across different city contexts. Developers appear to be most effective in cities with permissive zoning environments and when they hold unique positions on the council, reinforcing the idea that their policy expertise and deal-making skills matter more than their numbers.

The findings have broader implications for housing policy and democratic representation. In the face of mounting housing shortages, policymakers and advocates have increasingly called for the election of pro-housing candidates to local office[5]. However, such candidates often lack the grassroots infrastructure and organizational support of entrenched homeowner groups. Developers, in contrast, benefit from industry backing and technical knowledge of land-use processes (NAHB, 2017, p.24)[6]. While their

[5] "Want to change housing policies? Elect Pro-housing candidates." *BeyondChron-The Voice of the Rest*, 06/12/2020. https://beyondchron.org/mobilize-to-elect-pro-housing-candidates/

[6] Anecdotal evidence of developers' pro-housing preferences comes from the National Association of Home Builders (NAHB) and the California Building Industry Association (CBIA), which advocate for policies that "expand housing supply, reduce the housing deficit, and improve affordability," and call for "reducing barriers to construction" to address California's housing needs (NAHB, 2017; CBIA, 2020). The National Association of Realtors (NAR) also supports "cities ha-

involvement in politics raises legitimate concerns about conflicts of interest, our evidence suggests that they offer a pragmatic route to expanding housing supply—especially in jurisdictions where the political and procedural hurdles to change are steep. Their effectiveness may lie less in transforming the regulatory environment and more in using their technical skill and political capital to get projects approved. In that sense, they may serve as politically viable brokers for incremental change in gridlocked housing markets.

This study also adds to the broader literature on how personal characteristics of politicians shape policy outcomes. Existing research has shown that attributes such as party affiliation, gender, ethnicity, and professional background can influence fiscal policy, regulatory decisions, and public service delivery (Lee et al., 2004; Ferreira and Gyourko, 2009; Folke, 2014; Beach and Jones, 2016; De Benediktis-Kessner and Warshaw, 2016). Our findings underscore the importance of professional identity—specifically, ties to the real estate sector—as a determinant of policymaker behavior in a domain with substantial economic and social consequences. They also invite further exploration into how policymakers' occupational backgrounds interact with institutional structures to shape urban development.

The remainder of this paper is organized as follows. Section 2 presents a theoretical framework grounded in the citizen-candidate model, illustrating how developers' preferences, expertise, and industry support shape their incentives to run and their influence once elected. Section 3 provides institutional background on city council governance and local elections in California. Section 4 describes the dataset, including candidate occupations, building permits, and city council vote records, and outlines our regression discontinuity design. Section 5 presents the main results, including heterogeneity analyses and council vote behavior. Section 6 concludes with a discussion of policy implications and directions for future research.

2. Theoretical framework

Our approach to studying the effect of real estate developers on local housing supply is based on the idea that developers run for office to promote policies they support. To frame our analysis, we draw on the Citizen-Candidate model (Osborne and Slivinski, 1996; Besley and Coate, 1997), where candidates seek office to advance their preferred

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ving members on key committees, such as planning and zoning, [to] foster a more development-friendly climate" (NAR, 2020, p.5), suggesting that easing local development is one of its goals.

policies, known to voters and rivals. Voters select candidates whose policies align with their interests, though elected officials pursue their own preferences once in office. Candidates weigh the benefits of implementing their policies against the costs of campaigning. For instance, a developer might run if a less pro-housing opponent is likely to win, with both candidates competing for similar voter segments. The typical outcome of this model is a highly contested election between two candidates with opposing policies. We believe these dynamics align well with our context and with the regression discontinuity design.

Model setup. We assume all city residents can vote and run for office. Voters elect a council member who will implement their preferred housing policy, chosen from the interval [0,1], where 0 means no building permits and 1 means all requested building permits. Each citizen has a preferred policy, ω_i, and voters fall into three groups—homeowners (H), renters (R), and developers (D)—with different preferences. Homeowners' preferences range from [0,H], renters' from [R,R'], and developers' from [D,1]. While homeowners and renters' preferences may overlap, renters generally favor more development than homeowners, and developers typically favor more construction than renters.

The political game has three stages. First, citizens decide whether to run or not. The cost of running c_i is different for each type of voter. The cost of running is smaller for homeowners than for renters: $c_H < c_R$. There is evidence that renters are dramatically underrepresented in city councils, and that this is due to their lower propensity to run (Einstein et al., 2022)[7,8]. We also assume that the cost of running is smaller for developers than for renters: $c_D < c_R$. Although developers face high opportunity costs as business owners, they often benefit from the support of the real estate industry. Whether their running costs are higher or lower than homeowners' depends on the organization of the supporting interest group (Glaeser et al., 2005; Anzia, 2022).

Second, citizens then elect a candidate. The candidate with more votes wins and implements her preferred policy. The utility of citizen *i* if the outcome b_j is implemented

[7] For the case of California, these authors find that during the elections held during 2018-19, 83% of candidates to city council and 88% of councilors were homeowners –compared to a 55% for the whole population. Other works documented gaps in other political participation indicators as, for instance, turnout and participation in council meetings (Einstein et al., 2019; Yoder, 2020). The largest gap is, however, in representation in local government institutions.

[8] There are several reasons for that: renters are less affluent, have lived in the community less time, and are more mobile (DiPasquale and Glaeser, 1999).

is $-|\omega_i - b_j|$ if the citizen is not the candidate and $-|\omega_i - b_j| - c_i$ if she is a candidate. The policy implemented, b_j, is a mixture of the one preferred by the elected candidate and the one preferred by the other members of the council, named β. For the moment, we assume that the council is less pro-housing than the median voter, that is $\beta < m$; this reflects the above-cited empirical evidence about the underrepresentation of renters[9]. Naming α the (exogenous) weight of the elected candidate in the decisions of the council, we have $b_j = \alpha\omega_j + (1-\alpha)\beta$. This specification captures the fact that citizens understand the implemented policy will be shaped by the entire council, not just the elected member, and they factor this into their voting decisions. It also accounts for the influence of other institutions, such as regulatory constraints.

Results. The model's outcome may not align with the median voter's preference. As in Besley and Coate (1997), an equilibrium can exist with two candidates positioned symmetrically around the median voter, but farther from it[10]. In some cases, no equilibrium occurs where either renters or developers run. In such cases, the equilibrium outcome will be to the left of H, the most pro-housing preference of homeowners. If the council is strongly anti-development or the marginal candidate's influence is low, the number of permits may fall below the median voter's preferred level.

We assume renters participate as voters but not as candidates due to the high cost of running[11]. The first result examines when a developer will run alone, which occurs if $c_R - 0.5 * c_H < m - \beta$. The higher the running cost for developers relative to homeowners, and the less biased the council is toward homeowners, the less likely it is that a developer will run alone. The second result examines the scenario with two candidates. Following Besley and Coate (1997), if two candidates compete, their policy positions will be symmetrically around the median voter's preference. In Appendix A, we show that in

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[9] In the model β will be also the policy when nobody runs for office. A way to interpret this is that when there is no candidate willing to run, the existing council members will co-opt someone and convince him to run and will pick a candidate that mirrors the composition of the council.
[10] Besley and Coate (1997) also rule out any three-candidate equilibrium, since no third candidate has incentives to enter occupying a position between the other candidates and the median voter.
[11] If this was not the case, the predictions would be more complex. We could not rule out a two-candidate equilibrium where a renter competes against a homeowner, and it would be unclear when this would occur instead of a developer running. Since we cannot empirically identify close elections with pro-housing candidates other than developers, we abstract from this possibility.

this case, a developer competes against a homeowner with symmetric platforms γ and $m - \gamma$[12], where $\gamma = \alpha + (1 - \alpha)\beta$, and therefore depends on the value of α and β.

Two key predictions emerge from this analysis:

> ***Prediction 1: Impact of Developers in Close Elections***. In close elections between a developer and a non-developer, the developer's victory will lead to more pro-housing policies, such as increased building permits. This will be tested by analy - zing city council races where the developer won or lost with a narrow margin.
>
> ***Prediction 2: Heterogeneous Impact of Developers***. A developer's influence on housing construction will be stronger if the institutional bias against housing is lower (higher β) and when the marginal council member holds more sway (higher α). This will be tested by examining how the impact of developers varies in cities with strict land-use regulations and different council compositions (e.g., presence of other pro-housing or minority councilors).

Other theories. The model introduced above may capture just part of what motivates developers to participate in local politics. Here we discuss two other possible stories.

First, rather than openly campaigning on a pro-housing platform, developers might downplay housing issues during their campaigns. Later on, once in office, they might push for their preferred projects, accepting that this might generate some electoral backlash. This behavior aligns with an opportunistic lobbying model, where an incumbent trades-off the benefits from larger lobby contributions against the costs of a reduced probability of reelection (Solé-Ollé and Viladecans-Marsal, 2012). In such a model, the voter does not observe the payments made by the lobby but dislikes the policy outcome —higher construction activity. One implication of this model is that we should observe some degree of electoral backlash: after discovering the hidden program of the candidate, voters will punish her at the next election. We will examine this possibility in the empirical section.

Second, the above model does not explicitly consider the role played by the real estate industry in supporting developer candidates. In the introduction we provided

[12] The winner will be chosen by lottery but, whoever wins, the utility of the median voter will be higher than if no developer runs, because β is further away from the amount of development preferred by the median voter. This result tells us that the decision of a developer to run might enhance welfare in situations where the existing council is very biased towards homeowners and when renters face a high cost of running.

some anecdotal evidence on the role played by industry associations in mobilizing voters through their networks. One way to reconcile this with the above model is to consider that this lowers the cost of running for the developer. In some sense, what happens is that developers are able to share in the cost of running with their industry partners. In the empirical section we will provide some evidence on this issue.

3. Institutional context

Local housing policies. In California, cities make two types of development decisions. First, city councils adopt broad policies like general plans and zoning ordinances, which set rules for where and what types of housing can be built (e.g., single-family homes or apartments), as well as details like lot sizes and building heights. These policies are difficult to establish and reform, and their impact on housing construction may not be seen for years. The second process involves discretionary rezoning and building permit approvals. Developers must seek local council approval to change land use, and once granted a permit, they can proceed with construction. However, the approval process is often costly, risky, and slow, deterring developers and increasing costs. The Planning Commission reviews proposals, but the city council has often the final authority, particularly in disputes or appeals. Council members can also influence the commission through appointments, with members often aligning with the views of their appointer, especially in smaller councils where each council member appoints a commission member.

Local Elections. In California, municipal government structure is defined by state law. Council members serve staggered four-year terms, with elections every two years. Most cities (75.6%) have five-member councils, though larger cities like Los Angeles have up to 15. The majority (74.3%) elect council members at-large, with some using district-based elections. Most cities (96%) use a plurality voting system (first-past-the-post), where voters select as many candidates as there are seats, and the highest vote-getters win. In most cities, mayors are selected by fellow council members rather than directly elected. The mayor's role is typically ceremonial, although larger cities may grant more executive authority. California cities predominantly use the council-manager system (94.5%), where the council sets policy, and an appointed manager implements it.

Overall, the institutional setting in California is fairly homogeneous, meaning they are broadly representative of a certain type of city council. This consistency suggests that our findings are not only relevant to the cities in this study, but also likely extend to others with similar institutional frameworks.

4. Data and Research Design

Identification of developers. To classify candidates with a real estate background, we focus on two groups: land developers and home builders, and real estate agents. Developers acquire and subdivide land or construct homes and apartment buildings, while agents facilitate property transactions, typically as independent contractors or employees of brokerages. This distinction is made because developers and builders are more directly involved in housing construction, whereas agents profit from sales without direct involvement in new construction[13].

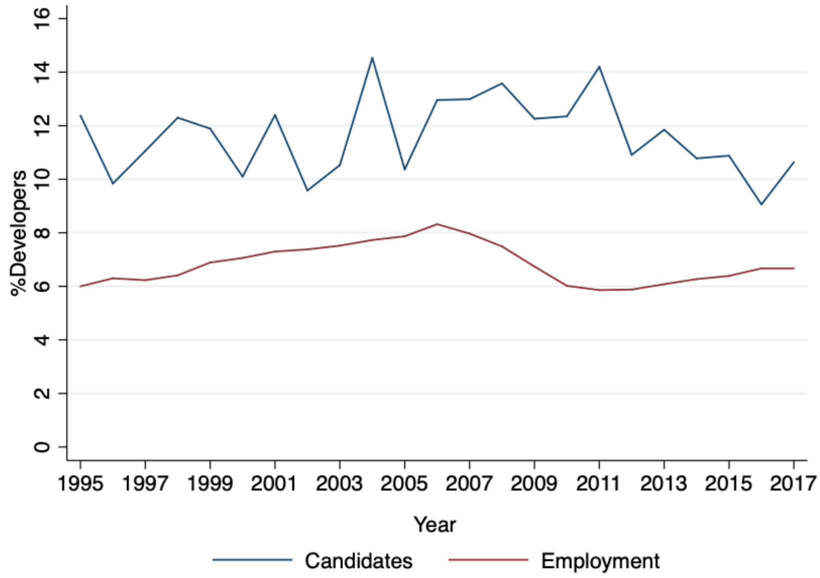
The primary data source for identifying candidates with a real estate background is the California Election Data Archive (CEDA), which provides profession information from the ballot for local government candidates in non-partisan elections (1995–2017). In California, candidates must list their occupation on the ballot since party affiliation is not included. We supplement this with additional information from candidates' websites, news articles, and LinkedIn profiles. To classify candidates in the "Land Developers and Home Builders" category, we include professions with terms such as 'developer,' 'property developer,' 'real estate developer,' 'affordable housing developer,' 'builder,' 'home-builder,' 'contractor,' 'civil engineer,' 'architect,' or 'construction firm.' This category also covers consulting roles like 'architect' and 'engineer' used by real estate companies. The Real Estate Agents category includes titles such as 'real estate agent,' 'realtor,' or 'real estate broker'. A full list of keywords and the number of candidates in each category is provided in Tables A.1 and A.2 in the Appendix.

During the study period, 30,384 candidates ran for city council (see Table A.2 in the Appendix). Using the classification method described above, we identified 2,524 candidates with clear ties to the real estate industry, representing 8.19% of all candidates and 11.28% of those accurately classified. About half of these candidates are Land developers or Home builders (5.79%), and the other half are Real estate agents (5.58%). This proportion exceeds the industry's estimated employment share of 6.68%, suggesting that the real estate sector is overrepresented in California's local politics. Figure 1 illustrates the

[13] Nonetheless, recall the anecdotal evidence from the introduction regarding the National Association of Realtors (NAR), which suggests that, on average, realtors are also pro-housing.

share of developers as candidates or in employment from 1995 to 2017, with the gap between the two groups remaining stable over time.

Figure 1:
Evolution of share of 'Developers': Candidates vs Employment



Notes: (1) California, City Council elections of the period 1995-2017; (2) The blue line is the % of Developers (Land developers + Home builders + Real estate agents) over Candidates running at these elections; Data from CEDA and own elaboration. (3) The red line is the estimated share of employment in real estate, which includes: employment in Construction (NIAC23), in Real Estate (NIAC531), and the number of state real estate licensees (less the number of employees in the sector); Data from Employment Development Department, ("Employment by Industry Data") and California Department of Real Estate.

Table 1 offers further support, showing that in 22% of elections, at least one developer runs, with 0.15 developer candidates per open seat. Approximately 11% of these open seats are won by developers, and 47% of developers who ran successfully secured a seat. This suggests that developers not only run in significant numbers but also have a strong chance of winning and influencing policy once in office.

Table 1: Presence of 'Developers' in city council elections (1995-2017)

	Mean	SD	Min	Max	#Obs.
At least one developer running	0.219	0.441	0.00	1.000	8,769
#Developers running/ #open seats	0.153	0.343	0.00	4.000	8,769
#Developers winning / #open seats	0.112	0.324	0.00	1.000	8,769
#Developers winning/#Developers running	0.473	0.483	0.00	1.000	1,921

Notes: (1) Data from the 8.769 city council elections held in California during the period 1995-2017 (#Obs.=8.769) of which 1.921 had at least on developer running. (2) Data source: see definitions and data sources in Table A.7.

Outcome variables. We measure our main outcome variable, the number of permitted housing units, using data from the U.S. Census Building Permits Survey. This dataset covers all California cities from 1990 to 2020 and provides the total number of permitted units, broken down by single-family and multi-family housing. The key advantage of this data is that building permits reflect decisions made by city governments, with a direct correspondence between the timing of the data and the decision date. In contrast, alternative indicators—such as home completions or housing units added to property tax rolls—are subject to significant delays relative to permit issuance. Other studies examining the determinants of housing supply in U.S. cities also use building permits data from the same source (Mast, 2024; Benedictis-Kessner et al., 2022; Ferreira and Gyourko, 2023).

To assess the direct influence of developers on housing policy decisions, we analyze council votes on housing-related issues from a subset of closely contested elections (with vote margins under 0.7%). This approach helps make data collection more manageable. We automate the extraction of vote data from council minutes using web scraping and AI tools. In total, we processed 4,543 documents from 58 elections, extracting 16,365 vote records. These votes are categorized by topic (e.g., 'Housing policy,' 'Housing supply', 'Rezoning'), with expert validation to ensure accuracy. The outcome variables are based on the number of votes on each topic during the term, which provide a broad indication of how frequently a topic appears in council decisions. For additional details on data collection and processing, see Appendix B.2.

To assess the effects of developers on affordable housing provision, we focus on low -income housing projects funded through the Low-Income Housing Tax Credit (LIHTC), using the HUD database. Since these projects are relatively rare, the outcome is a binary indicator indicating whether any such project was initiated (see also Mast, 2024). Additionally, we also examine the effect of developers on the number of council votes related to 'Affordable housing', which is a subset of the broader 'Housing policy' category defined above.

Covariates. We compile a variety of covariates to be employed for balance tests, as controls, and in heterogeneity analyses. (see Table A.7 in the Appendix for definitions and data sources). Our first set of covariates consists of economic and demographic characteristics, such as total population, density, income, housing price, rent, homeownership rate, and the shares of residents from different ethnic categories and educational backgrounds. We also utilize geographical data to determine whether a city is located close to the center of the urban area or to the coastline.

Additionally, we incorporate information on the stringency of land use regulations from Jackson (2018). The land use regulatory index in this study combines data from surveys conducted in California cities over time, specifically those by Glickfeld and Levine (1992), Levine et al. (1996), and Jackson (2016). It covers regulations for most cities in California and for two cross-sections of data, 1992 and 2010, allowing the creation of comparable indexes for two periods: 1995-2010 and 2011-2019. We construct four indexes: Residential Land Use Regulations, Growth Controls, Commercial Regulations, and a general Land Use Regulation index that encompasses all of the above. A detailed explanation of these indexes can be found in Appendix B.3. Due to their limited within-city variation, these indexes are not used as outcome variables but for heterogeneity analysis.

Our fourth set of controls includes city-level institutional information on council size, voting geography, and electoral rules, as well as candidate-level information such as gender, incumbent status, prior political experience, and ethnicity (coded using the wru package in R by Imai and Khanna, 2016). Lastly, we calculate the Ideological Campaign Finance score (CF-Score, Bonica, 2014) using data on campaign contributions to state and federal politicians to classify our city-council candidates as Liberal or Conservative.[14]

Sample. Our empirical analysis focuses on a sample of 953 mixed elections, where one of the two marginal candidates (i.e., the one winning the last seat or the runner-up) has a real estate industry background[15]. This sample is smaller than the set of elections with developer candidates, as we only include cases where the developer is one of the marginal candidates and is not competing against another candidate of the same type. One concern with this approach is that the cities identifying the developer's effect might differ from the average California city. We address these issues in Table A.8, comparing covariate means between mixed elections (developer vs. non-developer) and elections without developer candidates. The table shows the values are mostly similar, with standardized mean differences under 0.1. The exceptions are rents (0.180) and housing prices (0.148), indicating developers tend to run in areas with good real estate pros-

[14] Figure A.4 in the Appendix shows a bimodal histogram of CF-Scores for city council candidates, similar to Bonica's (2014) findings for other groups.
[15] There are 995 mixed elections in our database, but some are missing due to difficulties obtaining all the variables used in certain specifications.

pects, which also face affordability challenges. We do not view this as a threat to our analysis, as these areas are precisely the ones that most need to expand housing supply.

Regression Discontinuity Design. Estimating the effect of electing a particular type of candidate to a city council is challenging for several reasons. First, candidate attributes—such as having a real estate background—are not randomly distributed across cities. Factors influencing developers' decisions to run, and voters' election choices, may also shape council decisions on housing supply. For example, if developers are more likely to run in cities with booming housing markets, it will be difficult to separate the candidate's effect from the council's typical response to market conditions. Second, time-varying shocks, unknown to the researcher, can affect both elections and policy, and this can be difficult to handle even with panel data. Finally, reverse causality complicates the analysis: developers may run to influence certain council decisions on zoning or development. While the direction of some biases can be inferred, disentangling these effects remains complex.

To address these concerns, we employ a regression discontinuity design (RDD) to isolate the impact of electing a developer to the council on housing supply. This approach is commonly used in political economy and can identify causal effects with observational data (Ferreira and Gyourko, 2009; Lee et al., 2004). Specifically, we compare cities where a developer won a seat in the council by a small vote margin to cities where a developer lost a seat also by a slim margin. In such close elections, the winner is essentially determined by chance, and the characteristics of the city and the candidate will be very similar, meaning that the difference in policy outcomes can be attributed to the effect of the increased real estate representation.

Calculating the vote margin (the forcing variable) is straightforward in mayoral elections with two candidates (Kirkland, 2021), but requires some adaptation for council races.[16] Several studies have already demonstrated the effectiveness of this approach for analyzing city council and school district elections (Beach et al., 2024; Kogan et al., 2021).

An important aspect of the implementation of the RDD is determining the estimation strategy. We use local polynomial methods that rely only on observations that lie within a specific distance (or bandwidth) of the threshold of the forcing variable.

[16] In district elections with more than two candidates, the margin is the difference between the winner (a real estate developer) and the runner-up. In at-large elections, it's the margin between the last elected candidate and the runner-up. In runoff elections, the margin is between the top two candidates advancing to the runoff. Our results are consistent across different election types.

We follow current best practices and use a data-driven approach to determine the bandwidth that minimizes the mean squared error (Calonico et al., 2014).

The estimated equation is the following:

$$\log u_{it}^{t+k} = \alpha_1 \mathrm{l}[Developer\ winds_{it} = 1] + \cdots$$
$$\ldots + \alpha_2 f(Vote\ Margin_{it}) + \alpha_3 * \mathrm{l}[Dev.winds_{it} = 1] * f(Vote\ Margin_{it}) + \cdots$$
$$\ldots + \rho \log u_{it-l}^{t-l+k} + \lambda_t + \eta X_{it} + \varepsilon_{it} \tag{1}$$

We use as our outcome variable the natural logarithm of the cumulative number of units permitted (per capita) since the election and until k years after, denoted by $\log u_{it}^{t+k}$. Here, the subscript i indicates the city, subscript t indicates the year, and k represents the number of years after the election. We primarily focus on k=4, which represents the full term-of-office of the politician. However, we also present results for shorter and longer time horizons. We choose to log the variable because the original data is heavily skewed, as shown in Figure A.5 in the Appendix. Logging the variable allows us to mitigate the potential influence of observations with extreme values (see e.g. de Benedictis-Kessner et al., 2023). The variable $\mathrm{l}[Developer\ winds_{it} = 1]$ is a binary variable that takes on a value of one if the new council member is a developer who won the election, and zero otherwise. The running variable is denoted as *Vote margin* and represents the difference between the vote share of the developer and that of the competitor. This variable enters our analysis through a flexible function f(.), estimated using a local polynomial on the optimal bandwidth

Our main specification includes controls for the lag of housing units, representing the cumulative number of units permitted before the election, as well as time fixed effects. Controlling for the lag is akin to computing the dependent variable in differences (subtracting the prior value), a method proposed by Lee and Lemieux (2010) and used in recent RD studies, such as Girardi (2020) and De Benedictis-Kessner et al. (2025)[17]. If the lagged outcome is balanced at the cutoff, including it as a control will not bias the results and can improve estimate efficiency, as shown by Calonico et al. (2019). In some specifications, we also include pre-determined city-level variables (X_{it}), such as total population, ethnic and education breakdowns, homeownership rate, and dummies for urban ty-

[17]For transparency, we will present first the results without controlling for the lagged outcome and, as a robustness check, the results using the differenced specification.

pology or coastal location. These variables are also not strictly needed but increase the precision of the estimates and help validate the model.

Estimation. For our estimation, we utilize a local polynomial of order one, estimated using a triangular kernel and the optimal mean squared error (MSE) bandwidth[18]. In the robustness checks section, we will present estimates based on different polynomial orders and kernel types, as well as a wide range of bandwidths. The tables will include both the conventional estimator and the bias-corrected confidence interval, as recommended by Cattaneo et al. (2019).

We may encounter a potential complication when estimating our equation, as some cities may have zero housing units in certain periods. While this is not problematic for total units and single-family units, the percentage of zeroes is higher for multi-family housing. To address this issue, we look both at the intensive and extensive margins, as has been recently recommended (Dong, 2019; Chen and Roth, 2024). For the intensive margin, we use the same RDD approach as before but define $\log u_{it}^{t+k}$ only for positive observations. For the extensive margin, we estimate a linear probability model that examines the decision to permit at least one multi-family unit. Finally, as a way to account for the intensive and extensive margins together, we also present the results of the estimation of a two-part model.[19]

5. Results

5.1 Regression Discontinuity

RD validity. Before turning to the main results, we outline several checks to validate our empirical approach. A key assumption of the regression discontinuity design (RDD) is that treatment assignment (e.g., electing a developer) is determined by a running variable (e.g., vote margin) in a way that is essentially random around the cutoff. This implies that cities just above and below the threshold should be similar in all respects, except for the treatment. To validate this, we examine the distribution of the running variable around

[18] We also show results for the bandwidth minimizing the coverage error of the confidence interval (CER), which is preferred for inference (Cattaneo et al, 2019).
[19] We use the 'twopm' command for Stata (Belotti et al., 2015). The command estimates the two parts of the model together. Part one accounts for the extensive margin through a logit model and part two accounts for the intensive margin through an OLS model where the dependent variable is the log of the number of multi-family units; both parts are specified as a local RDD, a triangular kernel with a first-order polynomial and the optimal bandwidth for the intensive margin.

the cutoff for signs of manipulation. In the absence of manipulation, the number of observations just above and below the cutoff should be similar. We assess this using a histogram and the McCrary and Cattaneo et al. (2018) tests. Both tests yield p-values around 0.5, providing no evidence of manipulation (Figure A.6 in the Appendix).

To further check this assumption, we also investigate whether treated and control groups near the threshold have similar observable characteristics. If treatment assignment is random, there should be no systematic differences between the groups. According to Eggers et al. (2023), this is especially relevant for what respects to lagged values of the outcome —housing units permitted. The results, shown in Table 2, reveal no effect of housing units permitted in the years prior to the election, suggesting that observed treatment effects are not driven by pre-existing construction trends. Finally, we test for discontinuities in other pre-determined variables to ensure robustness, further confirming that treatment assignment is not confounded by pre-existing differences between cities just above and below the threshold (see Table A.9 in the Appendix).

Table 2: Effect of Developers on *lagged* Housing units permitted.

	Dep. Variable: lagged log Housing units p.c				
	years 0 & -1			years 0 to -3	
	(1)	(2)	(3)	(4)	(5)
RD Estimate	0.002	0.017	-0.025	0.074	0.058
Pr >|z|	[0.993]	[0.928]	[0.864]	[0.675]	[0.736]
Robust c.i.	(-0.454, 0.458)	(-0.403, 0.437)	(-0.351, 0.301)	(-0.318, 0.466)	(-0.326, 0.442)
Bandwidth	0.123	0.140	0.120	0.118	0.122
#Observations	969	969	969	980	980
#Effective Obs.	663	675	675	649	659
lag log H. units	No	No	Yes	No	No
Time f.e.	No	Yes	Yes	No	Yes

Notes: (1) Dependent variable: log Housing units per capita during the previous term of office, years 0 & -1 or years 0 to -3. (2) RD Estimates: triangular kernel with first-order polynomial fitted on the MSE optimal bandwidth. (3) We report the Bias-Corrected RD estimates, the robust p-value (Pr >|z|), and the Robust 95% c.i. computed as per Calonico et al. (2014). (3) In some specification, we control for Time f.e. and for lagged Housing units, which refer to the years -2 & -3. (4) Standard errors clustered at the city x election level.

The specificities of our regression discontinuity design (RDD) require additional checks. In particular, our design can be viewed as a hypothetical scenario where we randomly replace one non-developer council member with a developer. To ensure that the RD coefficient accurately captures the effect of electing a marginal developer to the council, we must verify that the election of a developer does not displace other developers or candidates from related professions that are not included in our primary definition of developer. Table A.10 in the Appendix presents this check, showing that the increase in the number of developers on the council following a developer's victory is close to one and not statistically different from this value[20].

Next, we examine whether the election of a developer systematically displaces any particular type of occupation on the council. We focus on occupations with sufficient observations, including businessmen, finance professionals, attorneys, city employees, education professionals, and other occupations grouped together. Table A.11 shows that the occupation of the opponent does not vary depending on whether a developer wins or loses. In other words, developers are no more likely to lose to candidates from any specific occupation, meaning the counterfactual scenario of having one developer on the council is essentially a random selection from the pool of other members. Naturally, certain occupations, such as businessmen (who make up about 20% of candidates), are more common on the council and may be more likely to match with developers. To address this, we will conduct additional checks by excluding them from the control group to ensure that the effect is due to the presence of a developer, not the absence of other types.

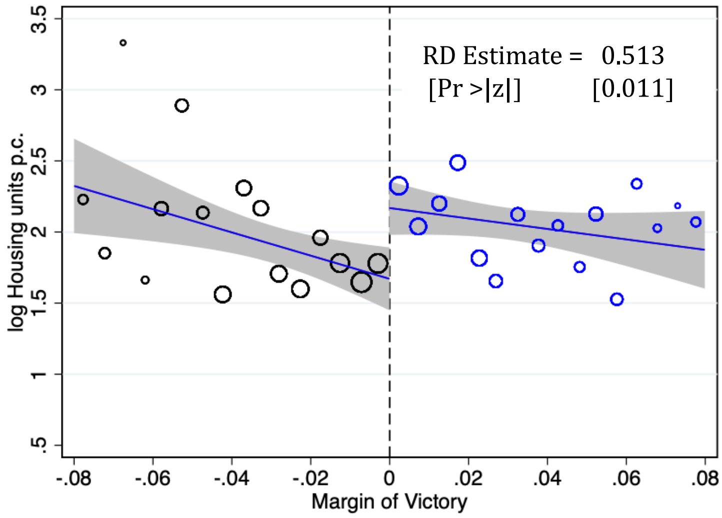
Main RD results. This section examines the impact of a developer's election to the city council on the number of permitted units. We primarily focus on a four-year period, which aligns with the council member's full term of office. However, we also present results at different time horizons later on.

The discontinuity in housing units permitted around the cutoff is illustrated in Figure 2, which shows the plot between housing units issued and the forcing variable. The graph provides evidence of a clear and sizeable discontinuity: cities marginally to the right of the cutoff (i.e., those with a developer elected to the city council) permit the construction of more housing units than those marginally to the left (i.e., cities where a developer is not elected). This finding reveals that during the four-year term following a developer's win, the number of permitted housing units increases by approximately 0.5 log points, which is equivalent to a 68% increase[21]. This translates to a rise of

[20] This table also demonstrates that the number of candidates from professions potentially related to real estate –but not included in our primary definition– remains unchanged.
[21] Figure A.7 in the Appendix replicates this graph for two distinct dependent variables. We plot the residuals of a regression between log Housing units p.c. and its lagged value and Time f.e.. Then, we plot the variable computed in first differences (log Housing units p.c. minus its lag).

10 permitted units per 1,000 residents, from 14 to 24. However, it is worth noting that the number of permitted units in our sample is an historical low (e.g., it was close to 40 before 1990)[22].

Figure 2: Effect of Developers on Housing units permitted.



Notes: (1) Each point represents the sample average of the dependent variable for 0.5% bins of the Margin of Victory. (2) Dependent variable: logged number of total units permitted per capita during the first term of office of the council member (years 1 to 4). (4) The straight line is a first order polynomial in the Developer's Margin of Victory. (5) The grey areas show the 95% c.i. and the box includes the RD point estimate and the robust p-value.

The full regression discontinuity results are presented in Table 3. All the specifications in this table use a local linear regression with a triangular kernel and the optimal bandwidth. Columns 1-3 use the bandwidth that minimized the Mean Squared Error (Calonico et al., 2014). The first column presents the raw estimates without any type of control. The second column controls for the lag of housing units and time fixed effects. The third column includes city-level controls. The point estimates are very similar in all these specifications. The estimates become clearly more efficient when we include controls for lagged units and time fixed effects, while the inclusion of city-level controls leads to a relatively smaller improvement in efficiency. In column 4 we present the results when using the 'coverage error-rate' optimal bandwidth (CER). In column 5 we report the results using a polynomial of order two. The results remain very similar in both cases. Overall, these results indicate that the

[22] To put our results in perspective, addressing the current housing crisis by returning to that level of housing production would necessitate doubling the number of permits. In fact, a recent study (Bughin et al., 2016) suggested that housing production should triple by 2025.

entry of a developer in the council has a large (causal) effect on the number of permits issued during the term.

Table 3: Effect of developers on Housing units permitted.

	Dep. Variable: log Housing units p.c.				
	(1)	(2)	(3)	(4)	(5)
RD Estimate	0.519	0.549	0.542	0.582	0.599
Pr >|z|	[0.012]	[0.000]	[0.000]	[0.010]	[0.011]
Robust c.i.	(0.063, 0.975)	(0.237, 0.861)	(0.290, 0.877)	(0.104, 1.064)	(0.119, 1.131)
Effect in %Δ	68.05	73.24	71.94	79.02	82.04
Mean dep. Var.	14.12	14.12	14.12	14.12	14.12
Bandwidth selector	MSE	MSE	MSE	CER	MSE
Polynomial order	1	1	1	1	2
Bandwidth	0.092	0.091	0.083	0.069	0.146
#Observations	953	953	953	953	953
#Effective Obs.	592	591	557	518	704
lag log Housing units	No	Yes	Yes	No	No
Time f.e.	No	Yes	Yes	No	No
City controls	No	No	Yes	No	No

Notes: (1) RD Estimates: triangular kernel with a polynomial of order one fitted on the optimal bandwidth; optimal bandwidth computed using the MSE selector in columns 1-3 & 5, and the CER selector inb column 4. (2) We report the RD Estimate, the robust p-value (Pr >|z|), and the Robust 95% c.i. computed as per Calonico et al. (2014). Standard errors clustered at the city x election level. (3) Dependent variable: log Housing units per capita during the full term of office of the council member (year 1 to 4), lagged units refer to the years 0 & -1. (4) Municipal controls: logged population, logged density, coast dummy, city type dummies, share minority, share homeowners, share of democratic voters, small council dummy, at large council dummy, land use regulation index, and time fixed effects. (5) Sample: elections of the period 1995-2017.

Additional validity checks. We perform several checks to strengthen the validity of our identification strategy. First, candidate characteristics—such as ethnicity, gender, incumbency, experience, and ideology—could influence outcomes. For example, if developers tend to be white or conservative, and these groups are less supportive of development, it could bias our results. To test for this, we examine discontinuities in these candidate-level covariates. The results, shown in Panel b of Table A.9, indicate no statistically significant effects at conventional levels. To further validate our findings, we re-estimate our model for samples where developers and non-developers share key characteristics (e.g., neither is an incumbent or both have the same ideology). Table A.12 presents these results, which are consistent across subgroups and nearly identical to those from the full sample, confirming that our results reflect the impact of electing a developer, not other candidate traits.

Second, we assess the role of other professions linked to local development, such as businessmen, attorneys, and finance professionals. These occupations, often qualified as part of the "growth machine" (Molotch, 1976), may have a vested interest in development and are frequently associated with developers. To address potential contamination of our control group, we modify our analysis in four ways: (a) excluding businessmen from the control group, (b) excluding all three professions, (c) using businessmen as the treated group but excluding real estate candidates from the control group, and (d) applying exclusions for all three groups. The results, reported in Table A.13, show that excluding these professions leads to a larger estimated effect. The reason for that might be either that these professions are also more pro-housing than the average non-developer candidate, or that there are still a few 'hidden' real estate candidates in these groups. However, the impact is not large enough to alter our conclusions. Additionally, when we estimate the effect of electing a businessman, we find a small and statistically insignificant effect, indicating that the impact on housing construction is specific to real estate candidates.

Finally, while the RDD is considered a gold standard for assessing election outcomes, its estimates are specific to close elections. While this raises concerns about the representativeness of such elections, we argue that our results are highly indicative. Close elections make up a significant portion of our sample: 64%, 46%, and 28% of elections fall within a 10%, 5%, and 2.5% vote margin, respectively. Even if close elections differ in characteristics, they represent an important subset. Table A.14 shows that close elections tend to occur in smaller, wealthier, whiter cities with higher housing prices, more homeowners, and higher turnout, aligning with the "high opportunity" neighborhood characteristics identified by Bergman et al. (2024). This underscores the significance of developer entry in expanding housing supply in these areas.

Moreover, the results of the Differences-in-Differences (DiD) analysis presented in Table A.15 qualitatively align with the RD estimates. We use a Local Projections-DiD approach (Dube et al., 2024), focusing on housing permits aggregated by term of office. Treated units are defined as those with at least one developer on the council after having none in the previous term, while control units are those that never had a developer[23]. The

[23] This method addresses the issue of 'negative weights' that can affect DiD analysis with variation in treatment timing (Callaway and Sant'Anna, 2021).

main DiD result indicates an effect of 0.3 log points, slightly lower than the RD estimate[24]. Although these results are qualitatively similar to the main findings, we prefer the RDD results due to the greater likelihood of randomness in the treatment (see also De Benediktiss-Kessner and Warshaw, 2016).

Robustness checks. The results presented so far are statistically significant, quantitatively meaningful, and robust to various checks. First, the estimated coefficient remains stable across different bandwidths (Figure A.8 in the Appendix), though it becomes less precise as we approach the threshold and slightly smaller with larger bandwidths. The bias-corrected coefficient is more stable across bandwidths and matches the original for bandwidths equal to or smaller than the optimal one.

Second, the results are consistent when using alternative kernels or a second-order polynomial (Figure A.9 in the Appendix). The choice of kernel does not affect the results, though the second-order polynomial yields slightly larger, less precise estimates. In line with Pei et al. (2022), we compute the MSE for each specification and find that the local linear model performs better in terms of MSE. Third, the results are robust to different sample selection strategies. We repeat the estimation with the following modifications: (a) adding potentially related professions to the treated group, (b) excluding those professions entirely to address potential control group contamination, (c) excluding the largest cities (Los Angeles, San Diego, San José, and San Francisco), (d) excluding short-term elections, and (e) excluding run-off elections. In all cases, the results, reported in Table A.16, remain consistent with the original findings. Third, in Tables A.17 and A.18, we report results using the dependent variable as a first difference (log of housing construction in the current vs. previous term) and different clustering options (none, city, city × election, or county). The results are very similar across all cases.

Finally, we check the impact of how we categorize real estate candidates. In Table A.19, we separate developers from realtors. We expected a smaller effect from realtors, given their interest in property values, but find similar coefficients for both groups: 0.46 for realtors and 0.57 for developers, suggesting they behave in a similar manner.

[24] Conditioning on pre-treatment covariates increases both the coefficient and its precision, and the placebo test p-value improves. When controlling for the contemporaneous composition of the council (e.g., number of businessmen), the coefficient rises to 0.4. See Table A.15.

5.2 Additional results

Housing typology. In this section we examine the results for different types of units, namely single-family and multi-family housing. Multi-family housing comprises units divided into two or more independent units, such as apartment buildings, condominiums, and duplexes, triplexes or fourplexes. We distinguish between these two types of units because zoning in most California cities restrict the areas where multi-family housing can be built, making it harder to increase production than in the case of single-family units. Additionally, multi-family housing has been a focal point of discussions around housing affordability, with opponents of new construction often targeting this type of housing, while supporters argue that it is crucial for easing the housing crisis. Therefore, to provide a comprehensive understanding of the impact of developers on housing supply, it is important to examine their ability to increase production of both single- and multi-family units.

Table 4: Typology of construction: Single-family vs. Multi-family housing

Type of Housing	(a) Single Family	(b) Multi family		
Dependent variable	log Housing units p.c.	log Housing units p.c.	l(Housing units>0)	Two-part model
	(1)	(2)	(3)	(4)
RD Estimate	0.402	0.438	0.153	0.693
Pr >|z|	[0.003]	[0.088]	[0.055]	[0.071]
Robust c.i.	(0.237, 0.861)	(-0.132, 1.008)	(-0.027, 0.333)	--.--
Effect in %Δ	49.53	55.54	16.48	69.30
Mean dep. Var.	11.67	3.19	0.72	3.19
Bandwidth	0.088	0.095	0.107	0.095
#Observations	956	713	956	713/956
Effective #Obs.	583	445	623	445/625

Notes: (1) In columns 1 and 2 we present we present the same RD Estimates as in Table 3 for Single family and for Multifamily housing, using only the observations with positive values of the dependent variable. (2) In column 3 we repeat the same analysis for multi-family housing using as the dependent variable l(Housing units>0), which is a binary variable that indicates if there has been at least one multi-family unit permitted during the period. We use the whole sample to estimate a Linear Probability model. (3) In column 4 we show the results of the estimation of a Two-part model for multi-family housing, using the 'twopm' command in Stata; part one accounts for the extensive margin through a logit model and part two accounts for the intensive margin through an OLS model where the dependent variable is the log of the number of multi-family units; both parts are specified as a local RDD, a triangular kernel with a first-order polynomial and the optimal bandwidth for the intensive margin; (4) We include lagged Housing units p.c. and Time f.e. as controls in all equations. (4) We report the RD Estimate, the robust p-value (Pr >|z|), and the Robust 95% c.i. computed as per Calonico et al. (2014). Standard errors clustered at the city x election level. (5) Sample: elections of the period 1995-2017.

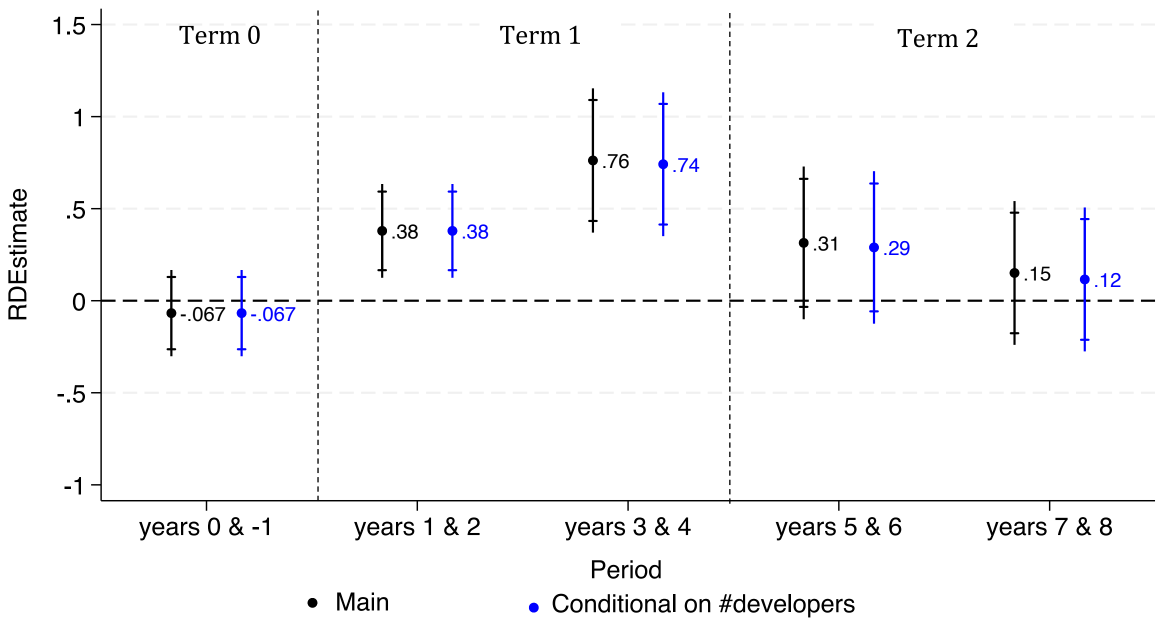
Table 4 presents compelling evidence that the entry of a developer into the council has a significant impact on the permitting of both single-family and multi-family units. For single-family units, the estimated coefficient is around 0.4, indicating an increase of 50% in the number of units. The results for multi-family units, presented in columns 2-4, are less precisely estimated (the coefficients are significant at the 10% level) but reveal that the entry of a developer affects both the intensive and extensive margins. The number of units permitted (provided that there is at least one permit) rises by a 56% (column 2), and the probability of permitting at least one unit increases by 11 percentage points, from 72% to 83% (column 3). To capture the joint impact of these two effects, we estimate a 'two-part model'. Our results show that the entry of a developer increases the production of multi-family units by a 70%. This corresponds to a shift from a rate of about 3 units per 1,000 residents to approximately 5.

The findings demonstrate that developers not only affect the production of single-family housing but also impact the politically complex process of developing multi-family housing. Moreover, it is worth noting that the presence of a developer on the council raises the likelihood of the council granting permission for the construction of multi-family housing, which was previously unapproved.

Dynamic effects. To try to understand how real estate developer councilors affect housing supply, we examine the duration of their influence on policy. Does their impact last only while they are in office, or is it more enduring? Figure 3 shows the effect on housing permits over two-year periods: years 1–2 and years 3–4 (their first term), and years 5–6 and 7–8 (the term after that). The impact is noticeable in the first period but peaks in the second (years 3–4), then drops significantly in the subsequent periods. The effect in the second term is small and not statistically significant. A clearer picture emerges when we break down the analysis by unit type. In Figure A.10 in the Appendix, we report the results for single-family and multi-family units. For single-family homes, the effect is stronger at the end of the first term and disappears in the second. For multi-family units, the effect remains stronger throughout the first term, diminishes in years 5–6, and disappears by the end of the second term. The longer approval process for multi-family projects may explain this delay, as permits often extend into the following term.

Before drawing conclusions, we must consider an alternative possibility: that developers may influence future permitting decisions by increasing their likelihood of reelection. Specifically, if the developer elected in period t is reelected in t+4, she will continue to shape policy by remaining on the council. Figure A.11 in the Appendix helps us rule out this possibility. It shows that developers do not have a candidate-level incumbency advantage: a developer who barely won an election at time t is no more likely to win in t+4 than a developer who lost. However, in cities where a developer barely won in t, more developers run and win in t+4. This suggests developers may enjoy a group incumbency advantage. Despite this, the same figure reveals that in these areas, developers are less likely to run and win in t+2 (when part of the council is renewed). As a result, the overall increase in developers running and winning across both t+2 and t+4 elections is small and statistically insignificant. Therefore, it is unclear whether developer representation persists into the second term. This suggests that any lasting effect on permit numbers is likely due to the persistence of policy decisions, rather than the persistence of developer representation. This is the reason why, in Figure 3, the results do not depend much on whether we control on the number of developers elected to the council.

Figure 3:
Dynamic effects. Housing units permitted



Notes: (1) Dependent variable: logged number of total units permitted per capita. The figure displays the results for the number of permitted units awarded during each two-year period (i.e., years 1 & 2, years 3 & 4, etc.). (2) The main results are displayed in black; these are RD Estimates: triangular kernel with first-order polynomial, including lagged Housing units p.c. and Time f.e. as controls. (3) The results after controlling for the number of developers elected at the different elections (years 2, 4 and 6) are displayed in blue. (3) 95% and 90% c.i. displayed; standard errors clustered at the city x election level.

Council votes. The results suggest that a developer's representation on the council has a significant (causal) effect on the number of building permits issued. However, the specific levers driving this influence remain unclear. Do developers share information with the industry and help shape projects to ensure they navigate local bureaucracy and planning commission hurdles?[25] Or is their influence rooted in their ability to broker deals within the council to pass motions that affect permitting? Additionally, do these motions primarily drive specific zoning changes, rather than broader shifts in land-use regulations, as suggested by the diminishing influence of developers over time (Figure 3)?

To explore these questions, we focus on city council votes related to housing policy, specifically discretionary zoning votes[26]. Given the challenges of collecting this data, we focus on closely contested elections, selecting a subsample using a regression discontinuity design (RDD) based on a "local randomization approach" (Cattaneo et al., 2024). We define a narrow bandwidth around the cutoff, ensuring covariates are balanced between treated and untreated units, which allows us to treat the treatment assignment as quasi-random. With a selected bandwidth of 0.7%, our analysis includes 103 elections, representing about 10% of the total sample.

Then, we downloaded the city council minutes for the term of office preceding these 103 elections. This process yields 4,543 usable documents from 58 elections, which are then analyzed with ChatPDF, an AI tool that extracts vote data with a high accuracy rate. The main piece of information provided by ChatPDF is the title of the vote, typically a sentence or a short paragraph. We ask experts to use this information to categorize these votes as 'Housing policy', 'Housing supply', and 'Rezoning' (see Appendix B.2 for details). This dataset allows us to examine whether an increase in developer representation on city councils correlates with more discretionary zoning approvals.

We examine the number of votes in each category, rather than the percentage of approved motions, as councilors typically avoid presenting motions without securing a majority[27]. The results are shown in Table 5. The first two columns replicate the RD results

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[25] Successful developers exert a lot of effort in meeting with local neighbors and trying to convince them regarding the virtues of the projects, including modifications in technical aspects and also concessions (green spaces, affordable housing). See Holsen (2020) and Leffers (2017). Having an intermediary inside the council may reduce the transaction costs and ensure the smooth issuance of the permit without the need of a decision of the council.

[26] For a recent analysis also exploiting the information of the minutes of council meetings, see Brito et al. (2024). Burnett and Kogan (2016) and Fang et al. (2023) are other papers looking at city council votes regarding housing policies.

[27] Table A.20 in the Appendix shows that the approval rates for motions are approximately 82% for housing policy votes and 85% for rezoning votes. Additionally, the table indicates that the presence of a developer on the council does not have a quantitatively meaningful or statistically significant impact on the probability of motion approval.

on the number of permitted units using the "local randomization approach." The estimated coefficients are similar to those in Table 2, both for the full sample of 103 elections and the smaller sample for which we obtained council minutes documents. This serves as both a robustness check for the main results and a validation of the voting data analysis.

Table 5: Effect of developers on Vote decisions

	Dependent variable:					
	log Housing units p.c.		#Votes on:			
			#Housing policy	#Housing supply	#Rezoning	#Non-housing
	(1)	(2)	(3)	(4)	(5)	(6)
RD Estimate	0.586	0.577	0.352	0.389	0.818	0.110
Pr >|z|	[0.014]	[0.066]	[0.057]	[0.042]	[0.003]	[0.200]
Effect in %Δ	79.67	78.07	35.22	38.91	81.85	11.04
Mean dep. Var.	16.91	14.89	9.51	7.45	2.15	18.15
Bandwidth	0.007	0.007	0.007	0.007	0.007	0.007
#Observations	953	--.--	--.--	--.--	--.--	--.--
Effective #Obs.	103	58	195	195	195	195

Notes: (1) In column 1 we present the results of the RD estimation using local randomization, the bandwidth of 0.7% has been selected using the command rdwinselect for Stata (Cattaneo et al, 2024), and we perform a randomization tests using the ritest command for Stata (Heβ, 2017); the dependent variable is the log of housing units p.c. in the entire term ; in column 2, we repeat the same test for the cities for which we have been able to obtain council vote data. (2) In columns 3 to 6 we perform a similar randomization test with variables that measure the number of votes related to Housing policy, Housing supply, Rezoning, and Non-housing votes, respectively; these variables are measured at the election x year level because not all the cities have available minutes data for all the years of the term; standard errors are clustered at the election level when performing the test. (3) See section B.2 in the Appendix for information of the procedure to obtain the council vote data.

Columns 3 to 5 present results for four categories of housing-related votes: 'Housing policy,' 'Housing supply', and 'Rezoning'. Since these variables are expressed as the number of votes divided by the mean for untreated units, the coefficients represent the percentage increase in votes resulting from a developer's entry into the council. These increases are large and statistically significant across all categories, with the most notable being in rezoning votes, which rise by about 80%. While this is a substantial percentage increase, the absolute number remains small, as our sample shows an average of about 2 rezoning votes per year. The entry of a developer would therefore raise the approval of such motions from 8 to around 14 per term. Column 6 shows that there are no statistically significant effects on the number of non-housing votes.

One consideration in this analysis is the difficulty to determine the direction of the votes. While this introduces some uncertainty in interpreting the results, the exercise still provides valuable insights for several reasons. First, the "Rezoning" votes category, our primary focus, is relatively clear, as it specifically refers to decisions regarding modifications for increased construction (see Tables A.4 and A.5 in the Appendix). Second, the increase in housing-related votes coincides with notable rises in permitting, with the magnitudes of these changes being similar. It seems unlikely that the developer's entry onto the council would drive these two outcomes in opposite directions[28]. Additionally, these decisions are likely made without significant developer opposition, as developer entry does not appear to affect the approval percentage. Finally, even if certain motions face general opposition from developers, they may be tacitly accepted in exchange for the potential benefits of increased housing supply.

Overall, the evidence presented in Table 5 clearly indicates that developers' influence on housing supply is mediated by their ability to get housing motions approved in the council. This does not rule out the possibility of influence based on information or expertise, an aspect for which we lack quantitative evidence. The results also show that the influence is primarily channeled through the approval of discretionary rezoning motions, the category most affected, rather than through land-use regulatory reforms. This supports previous evidence on the dynamic effects of developers on housing supply.

Affordable Housing. After reviewing these results, one might naturally question whether developers influence the supply of affordable housing. In theory, the answer is yes, given the evidence on multi-family housing. The extensive margin results suggest that cities begin producing this housing only after a developer joins the council. However, drawing definitive conclusions is challenging, due to limited data on the production of affordable housing.

In Table A.21, we address this gap by examining two indicators. First, using our RD design, we assess the effect of developers on projects funded by the Low-Income Housing Tax Credit (LIHTC), a key public program for affordable housing that finances an estimated 25-33% of new multifamily units in California. While resources are allocated at the state level, the influence of local city councils is less clear. Local opposition, often from residents, can hinder affordable housing projects, even when external funding is avai-

[28] Additionally, Figure A.12 in the Appendix shows that the impact intensifies in the second half of the term, similar to the pattern observed with permits (Figure 3). For instance, the number of rezoning votes during the first part of the term (years 1 and 2) is 56% higher in councils with a developer, while this figure jumps to 120% in the second part of the term (years 3 and 4).

lable. Pro-housing city councils may expedite these projects and reduce delays. Given the rarity of these projects, the number of units or projects is not highly informative, so we focus on the extensive margin (see also Mast, 2024).

We find that the entry of a developer has a positive and statistically significant effect on the probability of completing at least one project, which occurs in the second term, after the developer's tenure (columns 1 and 2). This result is based on project completions, rather than permits, explaining why the impact is null in the first term. The effect is substantial, with the probability of project completion increasing by 14%, or 39% more than the baseline probability of 38%.[29]

Second, we examine the impact on votes related to 'Affordable Housing', a subcategory of 'Housing Policy'. The terms in this category—such as 'affordable', 'low-income housing', and 'inclusionary housing'—are carefully selected by experts (see Table A.4 in the Appendix for the full list). The results in Table A.21 (column 3) show a 64% increase in the number of such votes, indicating a significant rise in the topic's prominence in council decisions after a developer joins. This result is subject to the same caveats as the previous ones regarding vote outcomes, and the justification for our interpretation is similar. Notably, the developer's entry has not made these decisions more controversial, as the proportion approved by a majority remains consistently high and unchanged.[30]

In summary, the results suggest that developers' entry stimulates council decisions on housing affordability and, over time, increases the supply of affordable housing units. However, two important points should be noted. First, the increase in low-income housing may still fall short of meeting demand. Second, it is unclear whether this effect reflects developers' genuine preferences—some of whom specialize in affordable housing (though the data lacks sufficient cases to explore this)—or if it results from deals made to facilitate market-rate projects, such as securing density bonuses in exchange for including affordable units.

[29] To put these numbers in context, the average number of LIHTC units per term is about 60. Dividing this by the average city population of 55,000 gives roughly 1 unit per 1,000 residents. In comparison, the average number of multifamily units per 1,000 residents is about 4 (Table 4).

[30] Note that some terms potentially related to 'Affordable Housing'—such as 'apartment', 'condominium', and 'multifamily'—are excluded from this definition and placed under 'Housing Supply' to maintain mutually exclusive subcategories. Moving these terms to the 'Affordable Housing' category increased the estimated coefficient to 0.85, while the coefficient for 'Housing Supply' remained largely unchanged.

5.3. Mechanisms

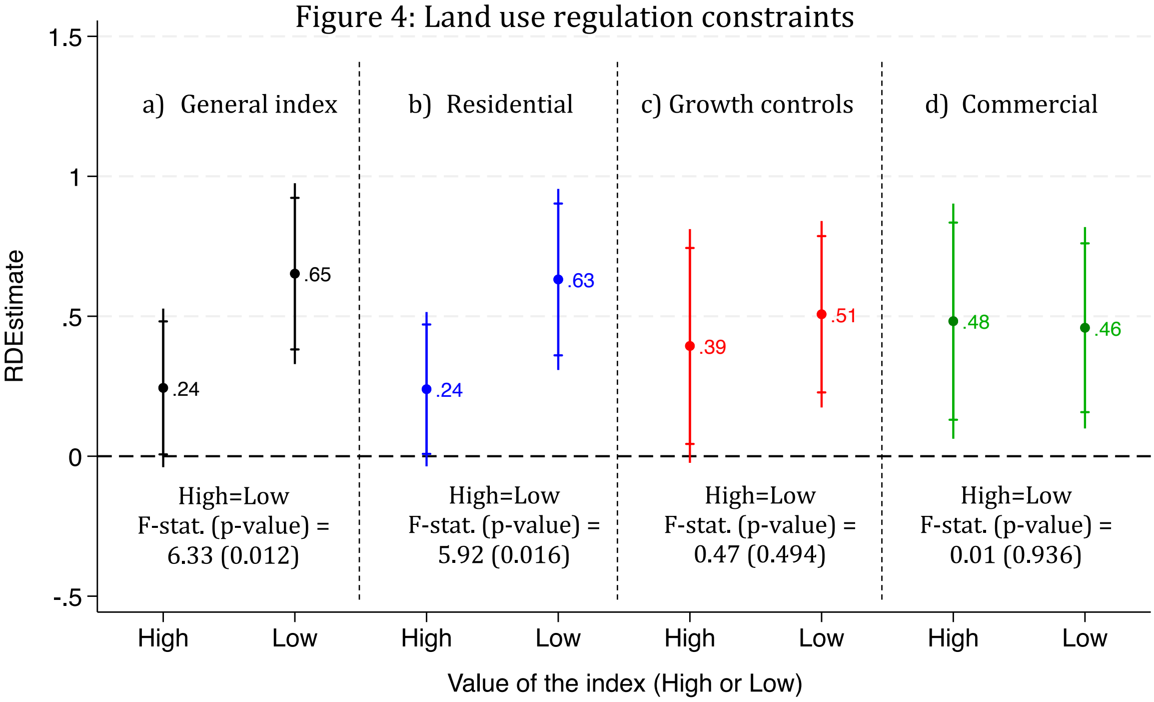
In this section, we examine the sources of developers' power. Specifically, we test the predictions of the electoral competition model from Section 2, investigating whether developers' impact on housing supply depends on the city's initial institutional bias against construction. This bias could arise from stringent land-use regulations or a council that is strongly opposed to housing development. Additionally, to account for potential opportunistic behavior by politicians with hidden housing agendas, we explore whether developers face any electoral backlash.

Land use regulations. According to the theoretical model in Section 2, the policy difference between developer and non-developer candidates increases as the council becomes more biased toward homeowner voters. This bias may stem from either the preferences of other councilors or institutional constraints on policy options. In this section, we examine one such institution: the stringency of land use regulations. Stringent regulations can limit the council's policy choices and are often difficult to change. This is supported by our dynamic analysis, which suggests the effect is not due to permanent regulatory changes, and by our analysis of council votes, which reveals a significant impact on rezoning decisions. Here, we explore how the stringency of quasi-permanent regulations moderates the influence of developers on housing supply.

Figure 4 presents the results of a subgroup analysis comparing elections in cities with 'High' and 'Low' values of a Land Use Regulatory Index, based on the data used in Jackson (2016 and 2018). This index, constructed from surveys conducted around 1992 and 2010, is based on similar questions. Details on the data source and index construction are provided in Appendix B.3. Figure 4 reports results for the General index (aggregating all questions), the Residential index (focused on residential sector indicators like height limits and floor-to-area ratios), the Growth Controls index (covering population and building limits, and urban growth boundaries), and the Commercial index (addressing regulations for commercial and industrial sectors). Table A.5 in the Appendix lists the exact components of each index.

The results show that developers' impact is stronger in cities with low land use regulatory stringency. This holds for both the General index and the Residential index, its main component. In both cases, the developer's influence is positive and statistically significant, but much stronger in lightly regulated areas (0.65 vs. 0.24 log points). No effect is observed for the Growth controls index, with similar results in both high and low regulation areas, aligning with debates in the literature about the effectiveness of such regulations in limiting development (Dempsey and Plantinga, 2013). In contrast, some studies find strong effects of some residential regulations (Kulka et al., 2023). There is no effect for Commercial regulations, possibly because we are focusing on residential permits[31].

Figure 4: Land use regulation constraints



Notes: (1) The graph reports the effect of electing a developer depending on the level of a Land Use Regulation index (High = value above the median, Low=below); the results are reported for four different indexes: Residential, Growth controls, Commercial, and General (which includes all the previous ones), see Appendix for a detailed explanation on how are computed. (4) Dependent variable: logged number of total units permitted per capita during the full term of office (years 1 to 4); Interacted OLS-RDD estimated on the optimal bandwidth of the main analysis and using matching weights (Carril et al., 2024); we control for time fixed effects and lagged logged Housing units p.c. (5) Sample: elections of the period 1995-2017. (6) We show the 90% and 95% c.i. and we report a test of equality of the coefficients of the two groups.

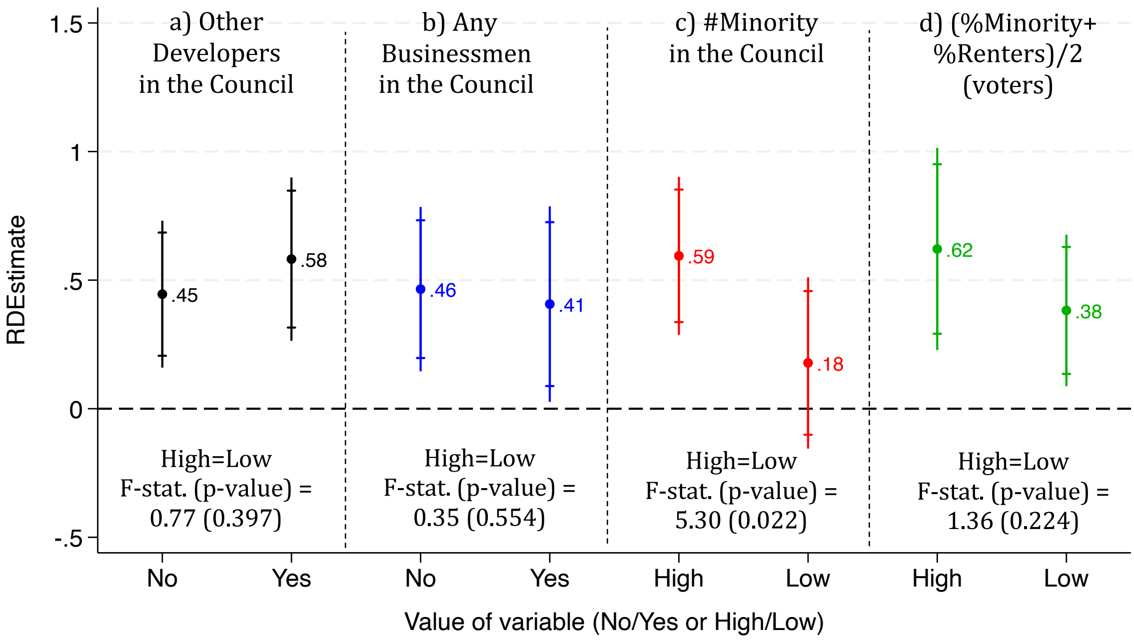
In summary, stringent land use regulations appear to limit developers' influence within the council. Furthermore, since these regulations are difficult to change, a developer's tenure on the council does not necessarily lead to future improvements in the regulatory framework. This is a concerning finding, as it suggests limits to expanding housing

[31] Note we use matching weights (Carril et al., 2024) to control for interactions between the treatment and other interaction variables that might affect developer's influence. Therefore, the results should be interpreted as indicative of the effect of regulatory stringency on developers impact on housing supply, holding these other factors constant. In the rest of the section, we will check some of the results of these other interactions. Figures A.13 and A.14 in the Appendix report the results of subgroup analysis of other variables not discussed in the text, such as Urban type, Population size, or Political Institutions.

supply through the election of pro-housing candidates. On the positive side, however, even in more heavily regulated areas, developers still seem to exert some influence.

Council preferences. In this section, we examine whether the preferences of other council members affect the impact of the marginally elected developer. Recall that the theoretical model predicts the effect of developer representation on housing supply will be greater when: a) the developer has more influence over council decisions (parameter α), and b) the council is more biased toward homeowners (parameter β). Figure 5 presents the results from subgroup analyses that offer indirect evidence on these two factors. In all the analyses, we control for interactions with a range of other possible drivers of the influence of developers using inverse propensity matching weights (Carril et al., 2024).

Figure 5: Council composition



Notes: (1) Panels (a) and (b) report the effect of electing a Developer depending on the number of other council members that are Developers or Businessmen, respectively (No=there are no other councilmembers in this category, Yes = there is at least another councilmember in this category). Panel (c) reports the effect depending on the number of Other council members that belong to a minority (i.e., are not Non-Hispanic white), which could be Low (zero or one Minority members in the council, besides the Developer) or High (two or more). Panel (d) reports the effect depending on whether the percentage of voters who are presumably pro-housing, measured as the average between the percentages of minority voters and renters (High=this variable is above the median, Low=below the median). (2) 95% and 90% c.i. displayed; standard errors clustered at the city level. (4) Dependent variable: logged number of total units permitted per capita during the full term of office (years 1 to 4); Interacted OLS-RDD estimated on the optimal bandwidth of the main analysis and using matching weights (Carril et al., 2024); we control for time fixed effects and lagged logged Housing units p.c. (5) Sample: elections of the period 1995-2017. (6) We show the 90% and 95% c.i. and we report a test of equality of the coefficients of the two groups.

First, in Graph a, we show that the influence of developers does not depend on the number of other developers on the council (typically one more). The coefficient is large and statistically significant both when the developer is the first to gain representation (0.45 log points) and when at least one other developer is present (0.58 log points). The F-test is not able to reject the hypothesis of equality between these coefficients. In Graph b, we demonstrate that developer influence is unaffected by the presence of other council members with economic development interests, such as businessmen (with a median value of one), as suggested by the "machine-growth" hypothesis (Molotch, 1976)[32].

This suggests that developers' influence does not arise from the likelihood of becoming pivotal in the council. Two complementary explanations account for this result. First, developers may have an informational advantage, with superior knowledge of local housing policy—an idea supported by the anecdotal evidence presented in the introduction. Second, their specific preferences may give them greater legislative bargaining power. Developers are "single-minded," focusing intensely on one issue: housing construction. This focus gives them an advantage in bargaining with councilors who are concerned with a broader array of issues. Intuitively, developers may support motions on various topics, appealing to different council members, in exchange for votes on housing-related matters.[33]

Second, in Graph c of Figure 5, we divide the sample into two categories based on the ethnic composition of the council. We hypothesize that minority representation could play a key role in moderating the effect of the developer, as minorities tend to be disproportionately affected by housing affordability issues and may be more likely to oppose exclusionary zoning policies (Trounstine, 2018). At times, minority councilors may be ambivalent about expanding housing supply, even when it is intended to benefit their communities[34]. However, in these cases, they may still be more inclined than other coun-

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[32] These results, along with previous findings (Table A.13 in the Appendix, showing that electing a marginal businessman has little impact on building permits), suggest that businessmen may not be particularly pro-housing. This could stem from the occupation's heterogeneity, making it a "catch-all" category with unclear policy implications. While studies like Kirkland (2021) identify fiscal policy differences among businessmen, they don't focus on housing policy. Similarly, Beach and Jones (2016) found no differences in California data.

[33] This finding aligns with the logrolling model developed by Samsonov et al. (2024). Similarly, the empirical analysis in Cohen and Malloy (2014) yields comparable results, demonstrating that alumni networks play a significant role in logrolling within the U.S. Congress, and highlighting that the influence of these networks is larger for votes deemed 'irrelevant' by the legislator. Early studies on logrolling in Congress can be traced back to Strattman (1992), while Burnett and Kogan (2014) provides the only known analysis of this phenomenon in city councils.

[34] Even though expanding supply (specially of multifamily affordable housing) may benefit minorities, there is evidence of local opposition to construction of in minority neighborhoods, because of gentrification fears (Hankinson and Magazinnik, 2023; Hankinson et al., 2025).

cil members to build a coalition with the developer, offering support for their projects in exchange for modifications or assistance with other motions.

To explore this idea, we divide our sample into two groups based on the share of minority (non-white) council members: "low" and "high." The "low" category includes councils with no minority members or just one, while the "high" category includes councils with two or more minority members. The results in Figure 5 show a larger RD coefficient when more minority members are present. The difference between the coefficients for the high and low categories is statistically significant at the 5% level. In councils with higher minority representation, the entry of a developer leads to a 95% increase in housing units, while in councils with fewer minority members, the effect is just 28%. This suggest that developers are more influential in city councils with substantial minority representation.

Finally, in Graph D of Figure 5, we perform a similar split of the sample, but this time based on indicators of pro-housing preferences among residents, rather than council members. Specifically, we use the share of minorities and renters in the population. This approach is motivated by two factors: first, we lack data on the presence of homeowners and renters among council members, and second, council members may be sensitive to how their votes are perceived by the public. The reaction could be more pronounced in areas with a higher proportion of white and homeowner residents. The results suggest this may be the case, as the impact of developers on building permits is larger in places with more minorities and renters (0.62 vs. 0.38 log points). However, the difference between these coefficients is not statistically significant at conventional levels, suggesting that the influence of developers is more closely linked to the composition of the council than to the demographics of the population.

Overall, the results in this section support the predictions of the electoral competition model from Section 2: developers have more power when the council is less biased toward pro-housing voters, and their impact is less dependent on their numerical presence in the council, instead relying more on their knowledge and/or bargaining skills.

Other mechanisms. In this section, we explore two additional political mechanisms. First, instead of openly campaigning on a pro-housing platform, developers may downplay housing issues during their campaigns and later push for their preferred projects. This behavior aligns with an opportunistic lobbying model (see also Section 2), where candidates weigh lobby transfers against reelection risks. In this framework, if a developer implements expansive housing policies that voters dislike, they may face electoral backlash, lowering their chances of reelection. Figure A.15 in the Appendix tests this hypothesis. The outcome measures whether the incumbent in year t runs, wins, and wins conditional on running in year t+4. The RDD analysis examines whether these outcomes are affected by whether the incumbent is a developer (right of the cutoff) or a non-developer (left of the cutoff). The results (Graph a of Figure A.15) show that developer incumbents do not face electoral backlash compared to non-developers. The figure (Graph c) also shows that there is no differential impact on turnout, indicating that housing policies influenced by developers do not mobilize additional voters (either in favor or against the policy). Overall, these results suggest that voters are generally satisfied with the housing policies resulting from developers' representation on the council.[35]

Second, we find evidence suggesting that the real estate industry plays a key role in supporting developer candidates. Recall from Figure A.11 that while individual developers do not have a clear incumbency advantage, they have a group advantage: the election of a developer in year t increases the likelihood that more developers will run and win in year t+4. We also show that developers tend to sit out the race in t+2, before deciding whether to run again. Additionally, Figure A.15 (Graph b) shows that in cities with a developer incumbent, there is a higher chance that a candidate with the same profession as the incumbent will run in t+4 and be elected. Therefore, while individual developer incumbents are not differentially punished or rewarded, developers as a group seem to benefit. These results suggest a coordinated strategy to ensure a continuous pipeline of viable candidates, increasing the chances that at least one developer remains on the council. The fact that a single developer on the council can significantly impact housing supply further supports this claim.

Overall, the evidence supports the idea that candidates with a real estate background often run on pro-housing platforms, typically backed by the real estate industry as an organized interest group (Anzia, 2022). This support helps maintain a steady pipeline of developers on city councils, where their presence seems crucial for increasing hou-

[35] Another possible way to look at this issue would be to examine the effects of institutions that may affect the degree of political opportunism. Figure A.14 in the Appendix looks at the effect of council size, type of election (by district vs at large), campaign finance limits, and election timing (off cycle vs on cycle elections), finding no differential effect.

sing supply through rezoning. Their influence stems from strong bargaining skills and/or superior knowledge and is more pronounced in councils less biased toward homeowners.

5. Conclusions

This paper provides compelling evidence that electing real estate developer candidates to local office positively impacts housing supply, particularly in California's severe housing crisis. Our analysis shows that when developers are elected to city councils, building permits increase by 68%, with a stronger effect on multi-family housing. However, this effect diminishes after their first term, suggesting that developers mainly influence targeted zoning changes rather than broad regulatory reform.

The political dynamics behind these findings are significant. Developer candidates benefit from strong real estate industry support, ensuring their continued presence on city councils. Despite this influence, we find no evidence of electoral backlash against developers, challenging the notion that voters, particularly homeowners, oppose new development. This suggests that pro-housing movements could gain momentum if more developers or pro-housing advocates enter local politics.

Our findings have important implications for addressing housing affordability and supply. Electing pro-housing candidates with real estate backgrounds could help break gridlock in many cities by leveraging developers' expertise to push through zoning reforms, especially for multi-family housing, which is crucial for affordability. Additionally, developers' success in securing discretionary zoning changes suggests that targeted interventions may be more feasible than sweeping reforms in many cities. Developers' ability to build coalitions within city councils highlights the importance of cross-sector collaboration. By gaining support for zoning changes from pro-housing or minority councilors, developers could play a key role in expanding housing supply in cities facing strong opposition from NIMBY groups. Encouraging such alliances could help overcome resistance to new development and promote affordable housing.

However, our results also reveal the limits of individual political actors in effecting large-scale change. The diminishing returns on developers' influence after their first term suggest that while they can push for incremental changes, broader regulatory reforms require a more systemic approach. This involves combining developers' expertise and lobbying power with broader political and institutional shifts to address the root causes of housing scarcity.

In conclusion, our study suggests that electing real estate developers to local councils can significantly boost housing supply by enabling key zoning changes. This approach offers a potential path to alleviate the housing affordability crisis, but broader, coordinated efforts are needed for lasting change. Future research should explore how developer-driven initiatives can be integrated into wider housing reform agendas to ensure new development meets the needs of diverse communities.

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Appendix A: Theory

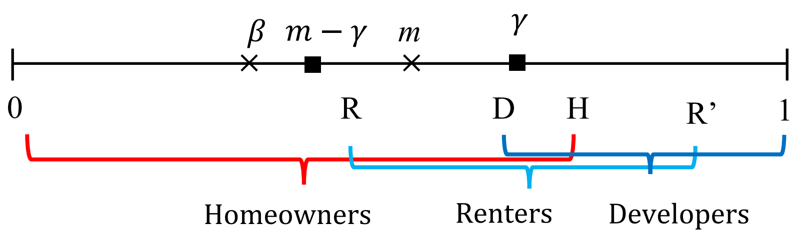
In this section we provide further details on the derivation of the results highlighted in the paper, namely the determinants of the decision of the developer to run alone and the two-candidate equilibrium.

The decision to run alone. A developer will run if the cost of running, c_D, is less than or equal to the difference between her preferred policy, b_j, and the default policy, β (i.e., $c_D \leq b_j - \beta$). In this case, the most "housing-hostile" policy the developer will implement is $\tilde{b}_j = c_D - \beta$. Next, we ask whether a homeowner could run and win against a developer implementing $\tilde{b}_j$. A homeowner would run if the cost of running, c_H, is less than or equal to the difference between $\tilde{b}_j$ and b_k, and if she is certain to win, i.e., $m - b_k < \tilde{b}_j - m$. The homeowner willing to run against $\tilde{b}_j$ will implement $\tilde{b}_k = \beta + c_R - c_H$. Substituting this into the equation, we find that the condition for a developer to run alone is: $c_R - 0.5 * c_H < m - \beta$. The higher the cost of running for developers relative to homeowners, and the less biased the current council is toward homeowners, the less likely the developer will run alone.

The two-candidate equilibrium. Let's consider now the outcome when two candidates run against each other. Following Besley and Coate (1997), if two candidates run against each other, both need to have an equal chance of winning, therefore the policy outcomes of each of the candidates should be symmetrical around the position of the median voter. The outcome implemented by a developer with preference 1 (the maximum level of construction preferred by any developer) is $\gamma = \alpha + (1 - \alpha)\beta$. Therefore, the largest possible distance between two candidates who run against each other is $2\alpha + 2(1 - \alpha)\beta - 2m$.

Hence, a developer finds it worthwhile to run against this other candidate in these conditions if $c_D < \gamma - m$. Notice that in this equilibrium –depicted in Figure A.1 below-, a developer is competing against a homeowner with symmetrical platforms γ and $m - \gamma$. The winner will be chosen by lottery but whoever wins the utility of the median voter will be higher than if no developer runs, because β is further away from the amount of development preferred by the median voter. This result tells us that the decision of a developer to run might enhance welfare in situations where the existing council is very biased towards homeowners and when renters face a high cost of running.

Figure A.1: Two candidate outcome



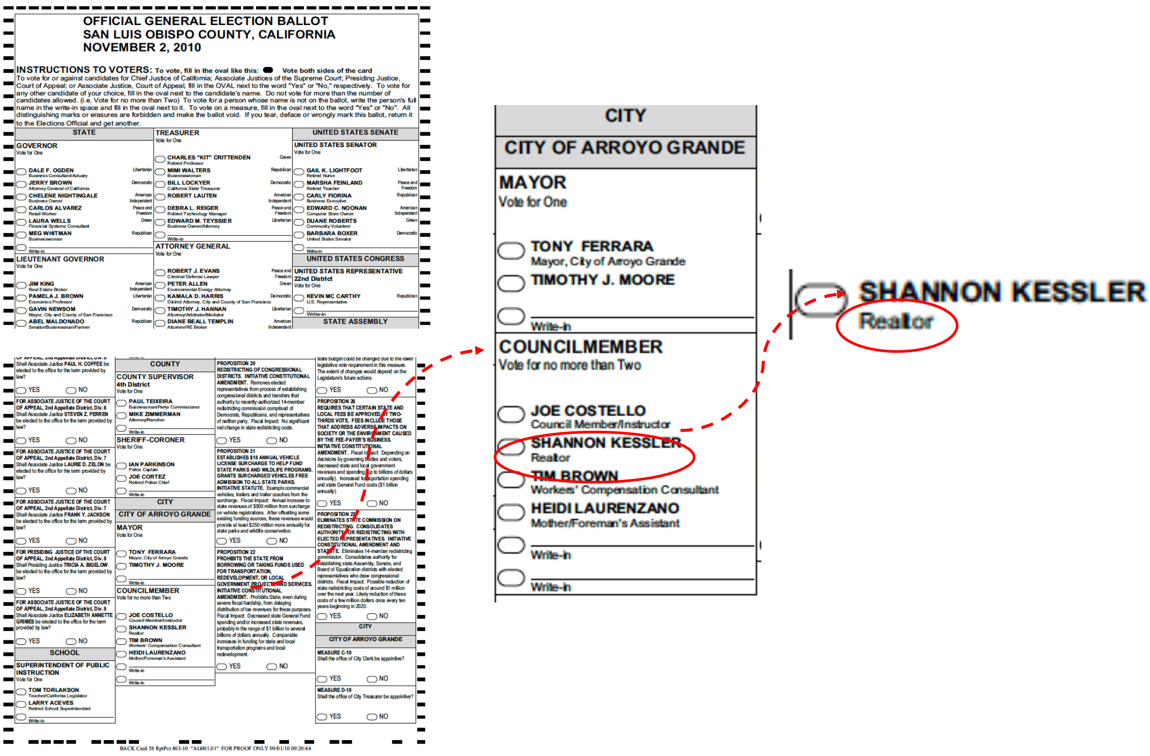
Appendix B: Data Collection

B.1 Candidate's Real Estate Occupations

Definitions. We classify candidates as having a real estate background if their professions fall into one of three categories: land developers, home builders, or real estate agents. *Land Developers* acquire and subdivide large tracts of land and manage the local building permit process. *Home Builders* design and construct homes or apartment buildings, often in partnership with developers. some of whom have in-house construction teams. *Real Estate Agents* facilitate the buying and selling of homes, typically working as independent contractors or for brokerages, agencies, or development companies.

We treat all candidates with a real estate background as a single group, while also analyzing two sub-groups: *Developers and Home Builders*, and *Real Estate Agents*. The reason for this distinction is that developers and home builders have a more direct financial stake in housing construction, where increased housing supply typically leads to greater profits. In contrast, real estate agents' profits depend on the volume of transactions and sale prices, and transactions may occur even without new construction.

Figure A.2: Example of profession information in a ballot



Notes: (1) The figure shows a ballot for the 2010 City council elections of the City of Arroyo Grande (San Luis Obispo county). One of the candidates (Shannon Kessler) reports the profession of Realtor.

Data Sources and Classification. The primary data source for classifying candidates is the *California Election Data Archive (CEDA),* which includes names, vote counts. and professions of all candidates in local government elections from 1995 to 2017. As required by California election laws, candidates must disclose their profession on the ballot, which provides the basis for identifying real estate backgrounds. Figure A.2 shows the image of a ballot; the profession of the candidate ('real estate agent' in this case) is displayed right below the name.

We classify candidates with real estate industry backgrounds based on the titles of their professions. We base our categorization on occupations identified by national industry associations (such as the NAHB and NAR) and match them with the words listed on the ballot. It is important to note that candidates do not choose their listed occupations from an official, standardized, list. Table A.1 below provides the full list of keywords used.

Table A.1:
Dictionary of professions related to the real estate industry

Real estate developers & Home builders	*Real estate agents*
'Developer'	'Real estate agent'
'Property developer'	'Realtor'
'Real estate developer'	'Real estate broker'
'Affordable housing developer'	'Commercial property broker'
'Builder'	'Property investor'
'Homebuilder'	'Property manager'
'Contractor'	'Real estate investor'
'Civil engineer'	'Real estate appraiser'
'Architect'	'Mortgage broker'
'Construction firm'	'Mortgage banker'

In addition to the CEDA dataset, we supplement this classification with information from external sources like candidates' personal websites, news articles, and LinkedIn profiles. This is particularly useful for candidates whose listed professions on the ballot may be ambiguous, such as 'businessman', 'executive', or 'lawyer'[36]. For example, if a candidate owns or works for a real estate-related company (e.g., a construction firm) or specializes in real estate tasks (e.g., real estate lawyer), they are classified as having a real estate industry affiliation[37]. This approach increases our sample size and helps ensure a more accurate classification, reducing potential contamination of our control group.

Table A.2 shows the number of candidates identified as having a real estate industry background, both in total and within the two specific groups (developers and home builders. and real estate agents). It is important to note that some candidates could not be classified due to missing or incomplete occupation information. Despite California's legal requirement for candidates to list their profession on the ballot, some candidates either omit their occupation entirely or provide vague descriptions. Incumbents, in particular, often list their current political position instead of their previous occupation. In these

[36] The exact words used are 'manager', 'ceo', 'executive', 'director', 'businessman', 'engineer', 'entrepreneur', 'consultant', 'commissioner', 'engineer', 'lawyer', and 'attorney'.

[37] Take Steven Robilland, elected to the Riverside city council in 2024, as an example. His website states that "he obtained a Realtor® license and built a successful career in real estate", and that he is "one of the top agents in Riverside, specializing in Land and Commercial Sales". He also describes himself as "a small business owner and real estate agent in Riverside" (https://www.Robillard4cc.com/about-me). The occupation listed on the ballot is simply "local business owner.

cases, we attempted to retroactively identify their profession prior to entering politics, though this process yielded mixed results.

Table A.2:
Share of developers in the candidates to city councils. 1995-2017

Candidate category	# Candidates	% Over total	% Over class.
Non-developers	19,855	64.39	88.72
Developers	2,524	8.19	11.28
Land dev. & builders	1,276	4.14	5.70
Real estate agents	1,248	4.05	5.58
Total classified	22,379	72.58	100.00
Unclassified	8,455	27.42	
Unclear relationship	504	1.63	
Unclassifiable profession	1,321	4.28	
Unknown profession	6,630	21.50	
Total # of candidates	30,834	100.00	

Notes: The table reports the number of candidates running at city council elections in California for the period 1995-2017 classified in different categories according the relationship between her profession (or the activity of her company) and the real estate industry. Source: Own elaboration using data from the 'California Elections Data Archive' (CEDA) and several auxiliary information sources (web pages, Newspapers, LinkedIn).

B.2 Council Votes on Housing Policy

To examine the influence of developers on policy decisions. we focus on council votes related to housing policy, as recorded in council minutes available on city websites. Gathering and processing this information poses significant challenges, so we narrow our analysis to a subset of closely contested elections. defined as those with a vote margin smaller than 0.7% (totaling 103 elections, approximately 10% of the full sample). This subset is selected using a "local randomization approach," which serves as an alternative to conventional regression discontinuity designs that focus on observations close to the cut-off, thus allowing for more efficient data processing.

We automate the collection of council minutes through a Python web scraping script. While some documents were unusable due to formatting issues, we successfully retrieved 4,543 usable documents corresponding to 58 elections. These documents were then converted to PDF files for further processing. To extract vote data, we use ChatPDF, a tool that enables ChatGPT-3.5 to interact with PDF documents. The extraction process is done in two phases: First, we prompt the AI to extract general meeting details, such as the meeting date and attendees. If this information is successfully extracted, we proceed to request a list of the items voted during the meeting. For each vote, we record who moved and seconded the motion, as well as how each councilmember voted.

The AI tool was manually trained and validated to ensure a high level of accuracy (95%) in extracting vote data. It successfully identified the vast majority of votes in the council minutes and did not "hallucinate"—that is, it did not generate hypothetical votes that do not actually exist. This accuracy is likely aided by the consistent format and language used in council vote records (see Ornstein et al., 2025, for a discussion on the promises and pitfalls of using AI in this context). However. detailed vote results for each motion were available for only about half of the identified votes. In many cases, this information is presented directly beneath the vote title, but in other instances, it is buried deeper within the document, complicating the AI tool's task.

After extracting the vote data, experts in urban and housing economics were asked to categorize the votes into key topics: general housing policy, housing supply, rezoning. and housing affordability. Keywords associated with each topic were used to guide the classification of additional votes. Table A.3 provides representative examples of votes related to *discretionary zoning*, the most relevant category for our analysis, highlighting the keywords used to classify these votes. Table A.4 lists the full set of keywords used to classify votes across the four categories: (a) *Housing policy*. (b) *Housing supply*, (c) *Discretionary zoning*, and (d) *Affordable housing*. Note that categories (b) and (d) are subsets of category (a), and category (c) is a subset of category (b).

Table A.3:
Examples of Discretionary Zoning voting titles

Fresno 1997 **Rezoning** application no. R-97-003 for 2.40 acres of real property located at 2490 w. shaw avenue
Glendale 2014 Motion to continue the matter of the proposed **general plan map amendment** and **rezoning** of 10 properties along fernando ct. and cypress st. to the may 13. 2014 special city council meeting
Gilroy 2015 To introduce an ordinance of the city council of the city of gilroy approving **zone change** z 15-02, a planned unit development **zoning amendment** to approve the heartlands estates phase ii project. filed by meritage homes c/o scott kramer for property located on the northern portions of 1690 and 1750 hecker pass road. apn. 810-21-009.
Irvine 2018 **Zone change** to amend chapter 9-6 of the /rv/ne zoning ordinance related to the distribution of dwelling units within planning area 6 (Portola springs)

Notes: Examples of voting titles extracted by ChatPDF from the PDFs of council minutes. In red we highlight the specific words added to the Discretionary zoning dictionary.

Table A.4:
Dictionary of Housing-policy related terms

a) Housing policy
rezoning. rezone. zone change. zoning change. zone amendment. zoning amendment. plan modification. plan amendment. general plan amendment. code revision. code amendment. conditional use permit. variance. special plan. final map. tract map. tentative map. mapping. building permit. discretionary permit. housing project. development project. master plan. general plan. housing laws. land use plan. redevelopment plan. redevelopment. zone. zoning. housing development. urban development. housing. new homes. mixed use. residential use. single family. apartments. condominium. multifamily. lot. urban area. height. density. residential. yard. green zone. open space. building. building code. area plan. management plan. parcel. dwelling. dwellings. land use. second family residential units. affordable. low income housing. inclusionary housing. moderate income. income housing. rental unit. rental housing. housing assist. home fund loan. home buyer. rental assistance. evict. homeless. shelter. housing element. short term rental. development incentive. property tax. assessment. property transfer tax. planning commission. land commission. housing authority
b) Housing supply
rezoning. rezone. zone change. zoning change. zone amendment. zoning amendment. plan modification. plan amendment. general plan amendment. code revision. code amendment. conditional use permit. variance. special plan. final map. tract map. tentative map. mapping. building permit. discretionary permit. housing project. development project. master plan. general plan. housing laws. land use plan. redevelopment plan. redevelopment. zone. zoning. housing development. urban development. housing. new homes. mixed use. residential use. single family. apartments. condominium. multifamily. lot. urban area. height. density. residential. yard. green zone. open space. building. building code. area plan. management plan. parcel. dwelling. land use. second family residential units
c) Discretionary zoning
rezoning. rezone. zone change. zoning change. zone amendment. zoning amendment. plan modification. plan amendment. general plan amendment. code revision. code amendment. conditional use permit. variance. special plan. final map. tract map. tentative map. mapping. building permit. discretionary permit. housing project. development project
d) Affordable housing
affordable. low income housing. inclusionary housing. moderate income. income housing. rental unit. rental housing. housing assist., home fund loan. home buyer. rental assistance. evict. homeless. shelter. housing element.

Notes: Own elaboration using ChatPDF to extract voting titles from PDF files of Council minutes and expert analysis to elaborate the dictionary. The *b* category is a subsample of the *a* category and the *c* category is a subsample of the b category.

B.3 Land use regulation index

Our land use regulatory index combines information on several surveys on land use regulations conducted in California over time. We have data for the regulations adopted as of 1992 (that is, before the start of our period of analysis) coming from the surveys carried out by Glickfeld and Levine (1992) and Levine et al. (1996). We use also data from the survey administered by Kristoffer Jackson in 2010. These surveys cover 443, 463 and 420 California cities, respectively, out of 482 California cities. The coverage is in any case much larger than the one of other surveys, such as Quigley et al. (2008), Gyourko et al. (2008), and Lewis and Neiman (2000), which include 86, 185 and 297 California cities, respectively. Moreover, since Kristoffer Jackson build this survey over the two previous ones. we can find a reasonable number of questions in all these surveys that can be used to build an index that gives us some variation over time. Therefore, we build comparable indexes for the period 1995-2010 using the first two surveys and for the period 2011-2019 using the last one. Of course, since in practice we only have two cross-sections of data (and the date of adoption of the regulation in the Jackson survey is very coarse), we are not able to use this index as an outcome variable; the index will be used only to carry out heterogeneity analyses. In Table A.5 we present the definitions of the five indexes that we are able to compute using the responses to these three surveys, and details which of the questions are used in each case. Table A.6 reports the descriptive statistics of these indexes. According to this data, 74.3% of California cities have at least one of these regulations; residential regulations are the ones more ubiquitous (67.3% of cites have at least one), followed by growth controls and commercial regulations (41.2% and 46.7% of cities have one); political controls (voter approval and supermajorities) are more rate (only 11% of cites have them).

B.4 Appendix References:

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Table A.5: Computation of the Land use Regulation index

a) Residential Zoning index (min=0. max =5)
Residential height limit + Floor-to-Area Ratio + Minimum square footage) + Residential development limited to infill areas + Adequate public facility ordinance
b) Growth Control index (min=0. max=5)
Population limit + Residential permit limit + Urban growth boundary + Growth management program +Open space preservation
c) Commercial Regulation index (min=0. max=2)
Square footage restrictions + Adequate public facility ordinance
d) Political Controls index (min=0. max=2)
Voter approval requirement + Supermajority in the council required
e) Land Use Regulation index (min=0. max=14)
Residential Zoning index + Growth Control index + Commercial Regulation index + Political Controls index

Notes: (1) Each of the components of the individual indexes is a binary variable equal to one if the city has a land use regulation of that type. (2) These indexes have been computed with information supplied by Kristopher Jackson and coming from the surveys in Glickfeld and Levine (1992), Levine et al. (1996), and Jackson (2018).

Table A.6: Land use Regulation index: Descriptive statistics

	Mean	Std.Dev.	Min.	Max.
	a) # of Regulations			
b) Residential Zoning index	1.413	1.334	0	5
c) Growth Control index	0.629	0.939	0	5
d) Commercial Regulation index	0.512	0.592	0	2
e) Political Controls index	0.114	0.328	0	2
f) Land Use Regulation index	2.668	2.424	0	11
	b) l(# of Regulations>0)			
a) Residential Zoning index	0.673	0.437	0	1
b) Growth Control index	0.412	0.492	0	1
c) Commercial Regulation index	0.467	0.498	0	1
d) Political Controls index	0.111	0.315	0	1
e) Land Use Regulation index	0.743	0.437	0	1

Notes: In panel *a* we report the descriptive statistics of the variable number of regulations and in panel *b* those of a binary variable indicating whether the city has at least one regulation in the category. See Table A.7.

B.5 Data sources and descriptive information

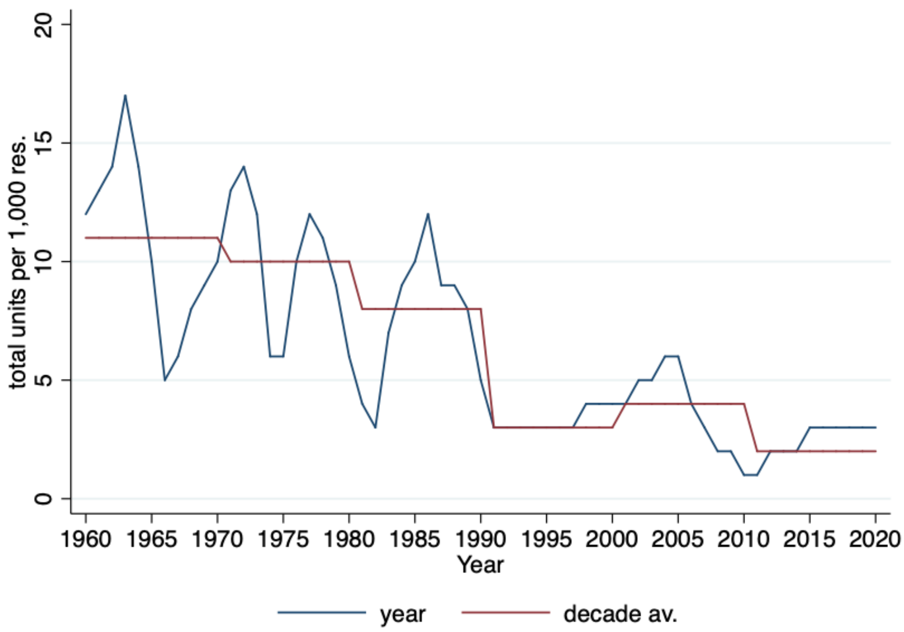
Table A.7: Variable definitions and data sources

Variables	*Definition*	*Source*
	(a) City-level variables	
Housing Units	Number of units permitted: total, single family, and multifamily	U.S. Census Bureau Building Permits Survey (1990-2019)
Population	Resident population	U.S. Census population estimates.
Density	Population/Land area of the city	Own calculations using GIS
l(Coast=1)	Distance to sea < 5 miles	Own calculations using GIS
l(CBD=1)	Distance to CBD <=5 mi	
l(Suburb=1)	Distance to CBD > 5 mi & <=30 mi	U.S. Census Bureau
l(Exurb=1)	Distance to CBD > 30 mi & <=60 mi	
l(Rural=1)	Distance to CBD > 60 mi	
Income p.c.	Household Median Income	
%Homeowners	% living in owned properties	U.S. Census Bureau. American Community Survey (ACS) (1990, 2000, 2010-2017)
Housing price	Median home value	
Rent	Median gross rent	
% Vacant houses	% of vacant houses	U.S. Census Housing Vacancies and Homeownership (CPS/HVS) (1990, 2000, 2010-2017)
% White, %Black, etc.	% of white pop., %black pop., etc.	U.S. Census Current Population Survey (1990, 2000, 2010-2017)
%College	% with college education	
% Democrat	% of individuals registered as Democratic political party	Voter Registration Statistics: California Secretary of State (1999-2017)
%Turnout	Voter participation in local elections	Own calculations using California Election Data Archive (1995-2017)
% Margin	Difference between the vote share of the developer and that of the competitor	
Council size	Number of seats in the council	
l(At large=1)	One if electoral geography is at large. zero if it is by-district	
l(Campaign finance limit=1)	One if the city has a limit that is more stringent than the one of the State of California	California Election Data Archive (1995-2017)
l(Off cycle elections=1)	Local election held in odd-numbered years	
Land use regulation index	#Number of land use regulations	Own calculations using the data in Glickfeld and Levine (1992), Levine et al. (1996), and Jackson (2018)

Table A.7 (continued):

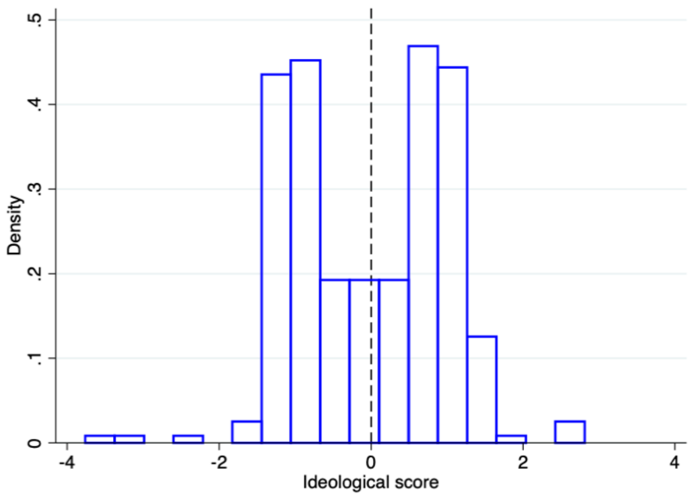
Variables	*Definition*	*Source*
	(b) Candidate-level variables	
l(White=1). l(Black=1). etc.	One if candidate is non-Hispanic white, zero if not; one if candidate is black, zero if not, etc.	Coded using the wru package in R (Imai. K.. & Khanna. K. 2016).
l(Woman=1)	One if woman. zero if male	Coded based on list of common male and female names
l(Incumbency=1)	One if the candidate is the incumbent, zero if not	California Election Data Archive (1995-2019)
l(Experience=1)	One if the candidate has occupied any local political position in the past, zero if not	
Ideology Score	Ideology CF score; negative values indicate Liberal, positive values indicate Conservative	Bonica (2014) CF score. own calculation for candidates to city councils
l(Conservative=1)	One if the candidate is Conservative, zero if Liberal (CF score >0)	
l(Ideology Score ≠ .)	One if there is information about the CF score, zero if not	

Figure A.3:
Evolution of the number of units permitted



Notes: (1) California 1960-2020; (2) Variables expressed per capita x 1000. The blue line is the year value and the red line is the decadal average. (3) Source: US Census. Building Permits Survey.

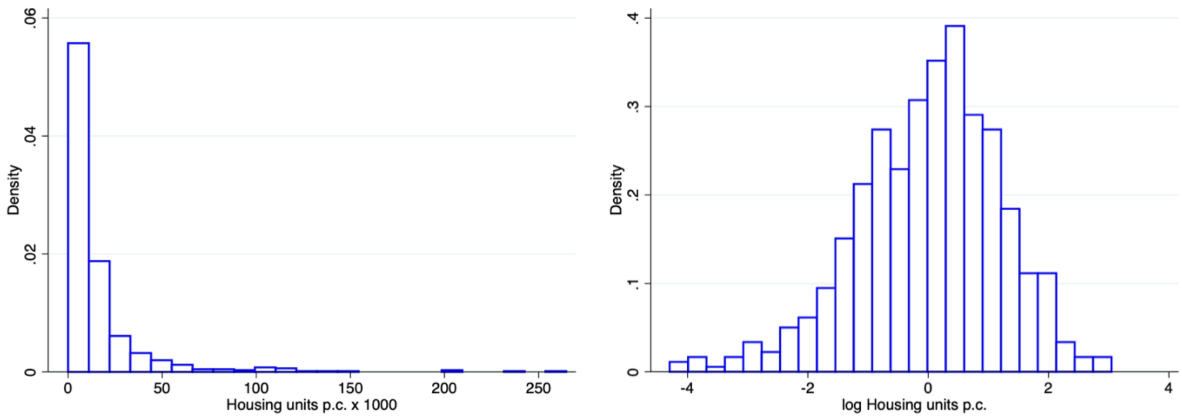
Figure A.4: Histogram of the Ideological score



Notes: Ideological Score of local councilmembers in California. 1995-2017. computed following Bonica (2015). The score goes from more Liberal (-) to more Conservative (+).

Figure A.5: Histogram of outcome variable

(a) Housing units p.c. (b) Log Housing units p.c.



Notes: (1) Panel (a) show the histogram of the number of Housing units permitted per 1000 residents; Panel (b) shows the logged value of this variable. (2) Sample: elections of the period 1995-2017.

Table A.8: Comparing developer and non-developer elections

	Elections without developers		Elections with developers		Stand. Mean diff. (SMD
	Mean	(Std.)	Mean	(Std.)	
Population	72.773	(250.268)	61.035	(184.941)	-0.085
Density	0.193	(0.581)	0.184	(0.422)	-0.039
l(Coast=1)	0.01	(0.101)	0.015	(0.122)	0.063
l(CBD=1)	0.068	(0.252)	0.06	(0.238)	-0.046
l(Suburb=1)	0.373	(0.484)	0.375	(0.484)	0.006
l(Exurb=1)	0.25	(0.433)	0.278	(0.488)	0.086
l(Rural=1)	0.309	(0.462)	0.287	(0.452)	-0.068
Income p.c.	62.015	(38.834)	62.923	(45.626)	0.021
% Homeowners	0.592	(0.139)	0.579	(0.133)	-0.044
% White	0.675	(0.203)	0.681	(0.215)	0.029
%College education	0.253	(0.180)	0.273	(0.188)	0.094
%Democrat	0.357	(0.132)	0.355	(0.129)	-0.015
%Turnout	0.316	(0.180)	0.308	(0.183)	-0.044
Housing price	242	(170)	268	(182)	0.148
Rent	1.114	(423)	1.192	(445)	0.180
Land use regulation index	0.172	(0.164)	0.180	(0.159)	0.050
l(Small council=1)	0.826	(0.379)	0.849	(0.358)	0.062
l(At large election=1)	0.784	(0.412)	0.741	(0.438)	-0.098
l(Campaign fin. limits=1)	0.893	(0.309)	0.920	(0.271)	0.093
l(Off cycle election=1)	0.254	(0.435)	0.291	(0.454)	0.083
# Obs.	6,338		961		

Notes: (1) The table reports the mean and standard deviation of a set of variables for the sample of elections in which none of the candidates is a developer and the sample of mixed elections where a developer runs against a non-developer (which is the sample used in the RDD analysis). (2) Standardized Mean Difference.

Appendix C: Regression Discontinuity

C.1 Validity and robustness

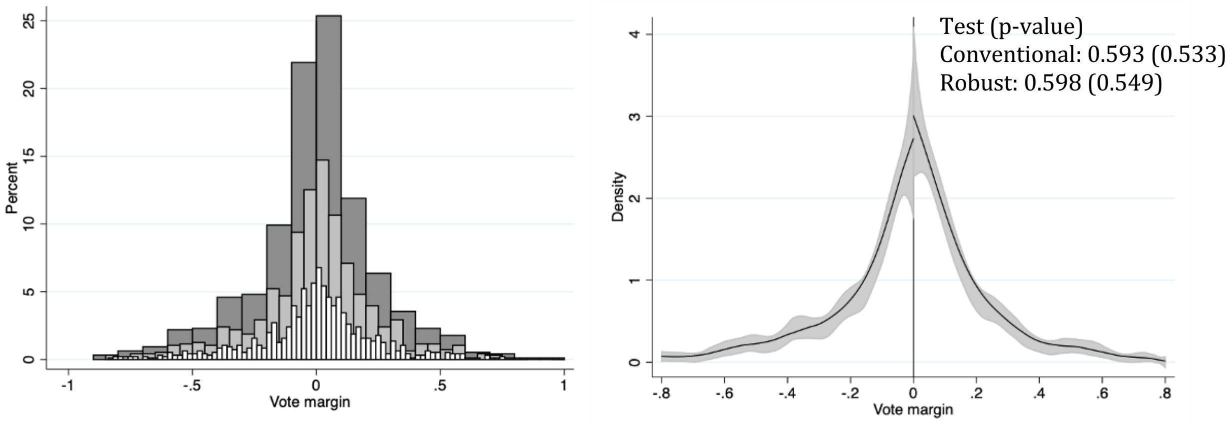
Table A.9: Covariate balance

Variables	Coeff.	Pr >|z|	Robust c.i.	Bandw	#Obs.	#Eff. obs.
	a) City-level variables					
log Population	0.174	0.295	(-0.179. 0.592)	0.128	953	693
log Density	-0.088	0.486	(-0.368. 0.181)	0.099	953	636
l(Coast=1)	-0.071	0.653	(-0.427. 0.224)	0.119	953	679
l(CBD=1)	-0.053	0.753	(-0.392. 0.343)	0.097	953	633
l(Suburb=1)	0.017	0.914	(-0.328. 0.329)	0.115	953	672
l(Exurb=1)	0.068	0.703	(-0.301. 0.479)	0.107	953	652
l(Rural=1)	-0.010	0.949	(-0.351. 0.298)	0.115	953	673
log Income p.c.	-0.046	0.524	(-0.195. 0.099)	0.123	809	541
% Homeowners	-0.138	0.334	(-0.527. 0.179)	0.098	953	616
% White	0.073	0.528	(-0.245. 0.477)	0.099	953	636
%College education	0.051	0.687	(-0.241. 0.365)	0.106	953	643
%Democrat	-0.077	0.528	(-0.433. 0.222)	0.110	953	649
%Turnout	-0.057	0.768	(-0.347. 0.757)	0.118	953	676
log Housing price	-0.092	0.356	(-0.344. 0.124)	0.099	878	545
log Rent	-0.050	0.314	(-0.187. 0.060)	0.091	858	552
Land use regulation index	0.157	0.263	(-0.097. 0.673)	0.113	953	665
Council size	0.100	0.394	(-0.154. 0.390)	0.106	953	649
l(At large election=1)	0.014	0.960	(-0.315. 0.332)	0.135	953	699
l(Campaign fin. limits=1)	0.024	0.865	(-0.276. 0.328)	0.160	953	754
l(Off cycle election=1)	-0.047	0.770	(-0.340. 0.268)	0.166	953	755
	b) Candidate level variables					
l(White=1)	0.035	0.655	(-0.211. 0.355)	0.134	953	704
l(Woman=1)	-0.062	0.804	(-0.322. 0.249)	0.149	953	770
l(Incumbent=1)	-0.167	0.211	(-0.503. 0.111)	0.098	953	740
l(Experience=1)	0.043	0.989	(-0.297. 0.291)	0.107	953	3652
Ideology Score	0.076	0.754	(-0.471. 0.651)	0.131	535	370
l(Conservative=1)	0.199	0.324	(-0.231. 0.731)	0.118	535	359
l(Ideolo. Score=missing)	0.101	0.432	(-0.288. 0.486)	0.088	953	614

Notes: (1) RD Estimates: triangular kernel with first-order polynomial fitted on the optimal bandwidth, (2) We report the Conventional RD estimates. the Robust 95% c.i. computed as per Calonico et al. (2014), and the robust p-value (Pr >|z|). Standard errors clustered at the city x election level. (3) All variables are standardized except those in logs.

Figure A.6 Manipulation test

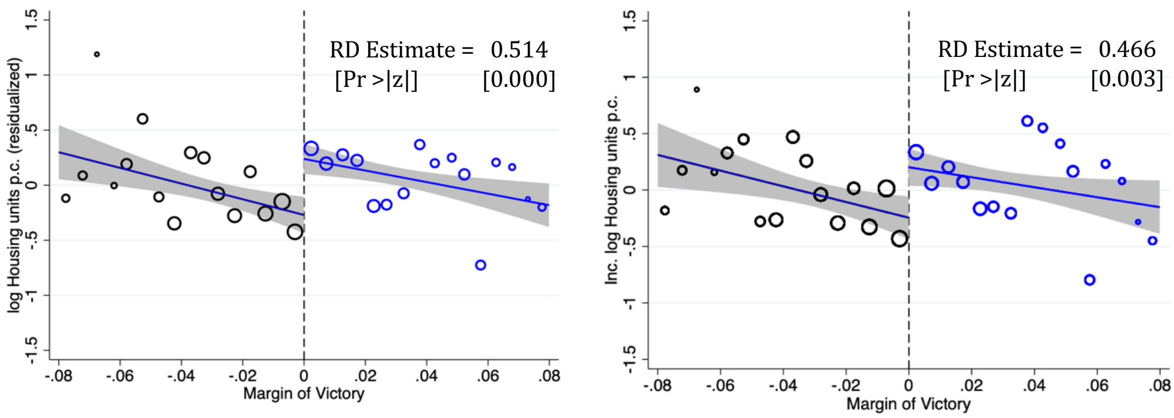
(a) Histogram (b) Cattaneo et al. (2017)



Notes: (1) Panel (a) shows the histogram of the forcing variable for bins of size 10%, 5% and 1%, (2) Panel (b) shows the result of the Cattaneo et al. (2017) test for the default options; we report in the box the value of the conventional and robust tests and the p-values.

Figure A.7: Robustness checks: Dependent variable

(a) Residualized (b) Differenced



Notes: (1) Each point represents the sample average of the dependent variable for 0.5% bins of the Margin of Victory. (2) Dependent variable: logged number of total units permitted per capita during the first term of office of the council member (years 1 to 4); in Panel (a) the variable is the residual of a regression against lagged Housing permits p.c. and Time f.e.(3); in Panel (b) the variable is the increases wrt the previous term of office (year 0 & -1). (3) Sample: observations with positive values of Housing permits. (4) The straight line is a first order polynomial in the Developer's Margin of Victory. (5) The grey areas show the 95% c.i. and the box includes the RD point estimate and the robust p-value.

Table A.10: Validity checks: Effect on other developers

	Dependent variable:			
	#Developers elected	#Related oc. elected	#Developers running	#Related oc. running
	(1)	(2)	(3)	(4)
RD Estimate	0.871	0.004	0.092	-0.045
Pr >|z|	[0.000]	[0.978]	[0.789]	[0.594]
Robust c.i.	(0.674, 1.065)	(-0.143, 0.147)	(-0.438, 0.576)	(-0.247, 0.141)
Bandwidth	0.127	0.120	0.096	0.117
#Observations	953	953	953	953
Effective #Obs.	661	650	597	644

Notes: (1) In column 1 we look at the effect on the number of developers elected (including the winning candidate). In column 2 we look at the effect on the number of professions related to development but that have not been included in the main variable used through the analysis. In columns 3 and 4 we look at the number of candidates running for each of the aforementioned groups. (2) RD Estimates: triangular kernel with first-order polynomial fitted on the optimal bandwidth. We control for lagged units and Time fixed effects. (3) We report the Conventional RD estimates, the Robust 95% c.i. computed as per Calonico et al. (2014), and the robust p-value (Pr >|z|). Standard errors clustered at the city level. (4) Sample: elections of the period 1995-2017.

Table A.11: Validity checks: Balance in opponents' occupations

	Dep. variable: dummy equal to one if occupation of opponent is:				
	Businessmen	Finance or Attorney	City employee	Education	All other occupations
	(1)	(2)	(3)	(4)	(5)
RD Estimate	0.106	-0.114	0.123	0.064	-0.003
Pr >|z|	[0.457]	[0.375]	[0.380]	[0.651]	[0.981]
Robust c.i.	(-0.173, 0.385)	(-0.367, 0.138)	(-0.151, 0.397)	(-0.213, 0.341)	(-0.237, 0.267)
Bandwidth	0.115	0.111	0.117	0.093	0.106
#Observations	995	995	995	995	995
Effective #Obs.	673	663	676	624	650

Notes: (1) In this table we look at the balance of the occupation of the opponent of the developer in terms of occupation, for occupations that have enough observations in the database; the dependent. variable is equal to one if the opponent is Businessmen (col. 1), Finance or Attorney (col. 2), City employee (col. 3), Education workers (col. 4), or any other occupation (col. 5). (2) RD Estimates: triangular kernel with first-order polynomial fitted on the optimal bandwidth. We control for lagged units and Time fixed effects. (3) We report the Conventional RD estimates, the Robust 95% c.i. computed as per Calonico et al. (2014), and the robust p-value (Pr >|z|). Standard errors clustered at the city x election level. (4) Sample: elections of the period 1995-2017.

Table A.12: Validity checks: Correlated effects

	Same ethnicity	Same gender	No incumbents	Same experience	Same ideology
	(1)	(2)	(3)	(4)	(5)
RD Estimate	0.530	0.531	0.511	0.549	0.525
Pr >|z|	[0.001]	[0.006]	[0.001]	[0.004]	[0.000]
Robust c.i.	(0.221. 0.935)	(0.169. 0.989)	(0.222. 0.891)	(0.189. 1.008)	(0.255. 0.883)
Bandwidth	0.093	0.076	0.111	0.102	0.088
#Observations	715	633	637	513	929
Effective #Obs.	431	355	458	338	567

Notes: (1) In column 1 we look at mixed elections between a Developer and a Non-Developer that have the same ethnicity (i.e.. White-White, Black-Black, Asian-Asian, or Hispanic-Hispanic; in column 2 we repeat the same exercise but with two candidates with the same gender; in column 3 we look at races where none of the candidates is the incumbent; in column 4 both candidates have previous political experience or none have; in column 5 both candidates have the same ideology (Conservative-Conservative or Liberal-Liberal). (2) RD Estimates: triangular kernel with first-order polynomial fitted on the optimal bandwidth. We control for lagged units and Time fixed effects. (3) We report the Conventional RD estimates, the Robust 95% c.i. computed as per Calonico et al. (2014), and the robust p-value (Pr >|z|). Standard errors clustered at the city x election level. (4) Sample: elections of the period 1995-2017.

Table A.13: Validity checks: Real estate vs Businessmen

Included in the treated group:	Real estate	Real estate	Businessmen	Businessmen. Attorneys & Finance
Excluded from control group:	Businessmen	Businessmen. Attorneys & Finance	Real estate	Real estate
	(1)	(2)	(3)	(4)
RD Estimate	0.687	0.685	0.120	0.042
Pr >|z|	[0.000]	[0.000]	[0.503]	[0.816]
Robust c.i.	(0.391. 1.106)	(0.371. 1.126)	(-0.296. 0.604)	(-0.300. 0.380)
Bandwidth	0.068	0.074	0.075	0.114
#Observations	768	670	758	986
Effective #Obs.	407	364	390	635

Notes: (1) In column 1 we study mixed elections between Real estate candidates (Developers or Realtors) and candidates from all other occupations except Businessmen. In column 2 we add to this latter group candidates with occupations as Attorney or Finance. In column 3 we study mixed elections between a Businessmen and a candidate from all other occupations except Real estate. In column 4 we include in the same group candidates with occupations as Businessmen, Attorneys or Finance, and compare them to candidates from all other occupations except Real estate. (2) RD Estimates: triangular kernel with first-order polynomial fitted on the optimal bandwidth. We control for lagged units and Time fixed effects. (2) We report the Conventional RD estimates, the Robust 95% c.i. computed as per Calonico et al. (2014), and the robust p-value (Pr >|z|). Standard errors clustered at the city x election level. (3) Dependent variable: log Housing of units permitted per capita during the term (1 to 4 years).

Table A.14: Comparing non-close and close elections

	Non-close elections		Close elections		Stand. Mean diff. (SMD)
	Mean	(Std.)	Mean	(Std.)	
Population	71.265	(174.444)	55.126	(190.563)	-0.163
Density	0.215	(0.485)	0.167	(0.381)	-0.095
l(Coast=1)	0.018	(0.135)	0.013	(0.115)	-0.056
l(CBD=1)	0.067	(0.251)	0.057	(0.231)	-0.059
l(Suburb=1)	0.367	(0.482)	0.379	(0.485)	0.035
l(Exurb=1)	0.292	(0.455)	0.270	(0.444)	-0.069
l(Rural=1)	0.273	(0.446)	0.295	(0.456)	0.069
Income p.c.	60.471	(43.752)	64.635	(46.838)	0.126
% Homeowners	0.578	(0.138)	0.600	(0.130)	0.164
% White	0.649	(0.224)	0.699	(0.207)	0.232
%College education	0.260	(0.171)	0.281	(0.196)	0.114
%Democrat	0.368	(0.130)	0.348	(0.127)	-0.156
%Turnout	0.295	(0.244)	0.346	(0.328)	0.176
Housing price	255	(157)	276	(194)	0.119
Rent	1.174	(398)	1.201	(464)	0.062
Land use regulation index	0.186	(0.152)	0.175	(0.163)	-0.070
l(Small council=1)	0.835	(0.371)	0.857	(0.350)	0.061
l(At large election=1)	0.774	(0.419)	0.859	(0.349)	0.220
l(Campaign fin. limit=1)	0.913	(0.282)	0.924	(0.265)	0.040
l(Off cycle election=1)	0.284	(0.451)	0.294	(0.456)	0.022
# Obs.	631		330		

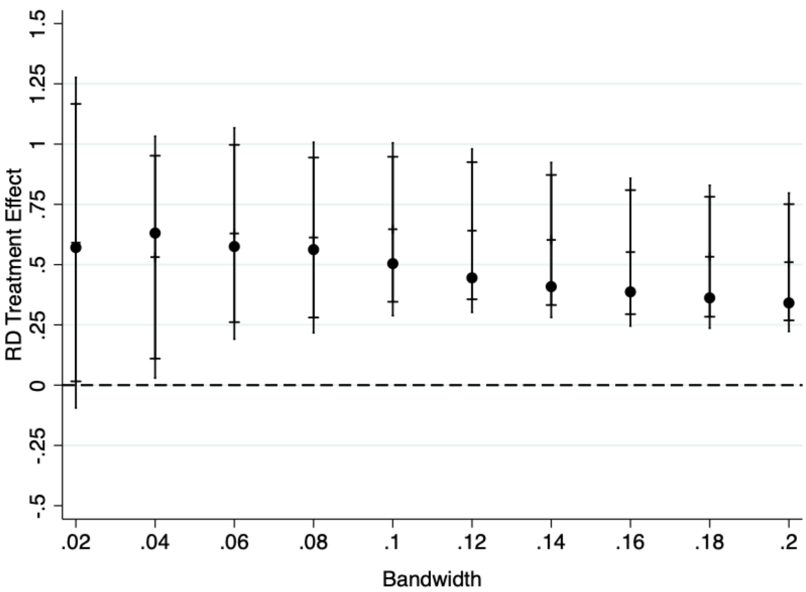
Notes: (1) The table reports the mean and standard deviation of a set of variables for the samples of close and not-so-close elections; close elections are those with a margin of victory of the winner lower than 0.091, which is the optimal bandwidth used in the main RDD specification. (2) We include the Standardized mean difference (SMD) for each variable.

Table A.15: Validity checks: Difference-in-differences

	Dep. Variable: log Housing units p.c.							
	Term -1 (years -2 & 3)		Term 1 (years 1 to 4)			Term 2 (years 5 to 8)		
	(1)	(2)	(3)	(4)	(5)	(5)	(6)	(7)
DiD Estimate	0.282	0.150	0.301	0.346	0.411	0.121	0.104	0.089
Pr >|z|	[0.167]	[0.589]	[0.065]	[0.033]	[0.042]	[0.763]	[0.665]	[0.549]
Adj. R2	0.567	0.713	0.672	0.721	0.735	0.683	0.699	0.699
#Obs.	1,435	1,435	1,435	1,435	1,435	1,129	1,129	1,129
Place f.e..	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Basic controls	No	Yes	No	Yes	Yes	No	Yes	Yes
Council controls	No	No	No	No	Yes	No	No	Yes

Notes: (1) The table shows the results of estimating the effect of developers' presence in the city council using a Local Projections-Differences-in-Differences specification ('LP-DiD', see Dube et al., 2024). We report the result aggregating the variable at the term level (four years), with Term zero (years 0 & -1) being the base period. Treated units are defined as those that have at least one developer in the council in Term 1 and none in Term 0. Control units do not have any developer in the council in these periods; we also impose a 'clean controls' condition that requires than control units also do not have developers in Term -1. (2) We also present results controlling for the basic set of controls (see Table 2) and also for contemporaneous characteristics of the council (number of councilmembers that are businessmen, minority or liberals). (3) Standard errors clustered at the city level.

Figure A.8: Robustness checks: Bandwidths

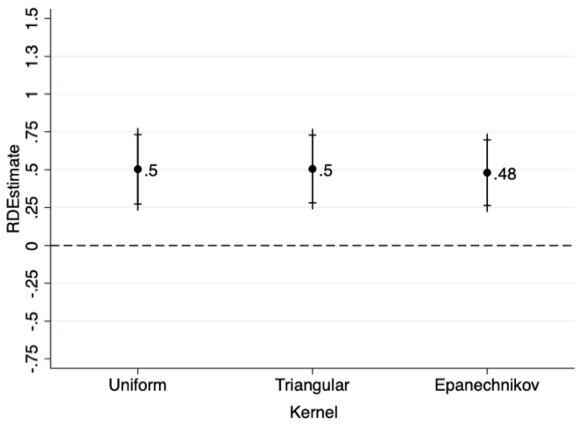


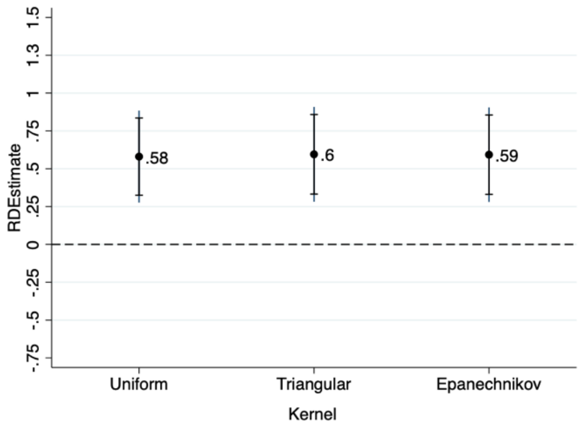
Notes: (1) The figure displays the results of the main RDD specification (triangular kernel with first order polynomial) for different bandwidths, including lagged Housing units p.c. and Time f.e. as controls. (2) We report the Conventional RD estimates (indicated by a black dot) and the bias-corrected ones (indicated by a short dash), and the Robust 95 & 90% c.i., computed as per Calonico et al. (2014). Standard errors clustered at the city level. (4) Dependent variable: log of Housing units p.c. permitted during the full term of office (years 1 to 4).

Figure A.9: Robustness checks: RD specification

(a) 1st Order Polynomial

(b) 2nd Order Polynomial





Notes: (1) Panel (a) reports the results for different types of kernel of fitting a local polynomial of order one on the optimal bandwidth. Panel (b) reports the same results for a polynomial of order two. (2) RD Estimates: triangular kernel with first-order polynomial fitted on the optimal bandwidth. We control for lagged units and Time fixed effects. (3) 95% and 90% c.i. displayed; standard errors clustered at the city x election level. (4) Dependent variable: log of number of total units permitted per capita during the full term of office (years 1 to 4. (5).

Table A.16: Robustness checks: Sample selection

	Dep. Variable: log Housing units p.c.				
	Add related professions to treated	Exclude unclear cases from controls	Exclude largest cities	Exclude short term elections	Exclude Runoff elections
	(1)	(2)	(3)	(4)	(5)
RD Estimate	0.404	0.524	0.533	0.560	0.601
Pr >|z|	[0.002]	[0.001]	[0.000]	[0.000]	[0.000]
Robust c.i.	(0.161. 0.713)	(0.228. 0.919)	(0.251. 0.897)	(0.042. 0.965)	(0.017. 1.077)
Bandwidth	0.086	0.086	0.076	0.077	0.074
#Observations	1.290	796	937	915	808
Effective #Obs.	767	466	531	527	483
Lag log Units p.c.	Yes	Yes	Yes	Yes	Yes
Time f.e..	Yes	Yes	Yes	Yes	Yes

Notes: (1) In column 1 we add to the treated group all those cases that could be defined as Developers under a laxer definition. In column 2 we exclude from the control group all cases that might be potentially contaminated (there is some chance this group includes unidentified developers). In column 3 we exclude the four largest cities of California from the sample (Los Angeles. San Diego. San José & San Francisco). In column 4 we exclude short term elections (the winning candidate has to run again in two years). In column 5 we exclude runoff elections (that is elections that do not use the plurality system). (2) RD Estimates: triangular kernel with first-order polynomial fitted on the optimal bandwidth. We control for lagged units and Time fixed effects. (2) We report the Conventional RD estimates. the Robust 95% c.i. computed as per Calonico et al. (2014), and the robust p-value (Pr >|z|). Standard errors clustered at the city x election level. (3) Dependent variable: log Housing of units permitted per capita during the term (1 to 4 years).

Table A.17: Robustness checks: Differenced dependent variable

	Dependent variable: Δlog Housing units p.c.				
	(1)	(2)	(3)	(4)	(5)
RD Estimate	0.433	0.481	0.514	0.540	0.566
Pr >|z|	[0.005]	[0.001]	[0.002]	[0.002]	[0.003]
Robust c.i.	(0.147. 0.816)	(0.206. 0.853)	(0.207. 0.917)	(0.217. 0.918)	(0.195. 0.978)
Bandwidth selector	MSE	MSE	MSE	CER	MSE
Polynomial order	1	1	1	1	2
Bandwidth	0.108	0.104	0.081	0.074	0.145
#Observations	945	945	945	945	945
Effective #Obs.	618	608	546	556	694
Time f.e..	No	Yes	Yes	Yes	Yes
City controls	No	No	Yes	No	No

Notes: (1) Δlog Housing units p.c.=log Housing units p.c. build during the term of office (years 1 to 4) – log Housing units p.c. build during the previous two years (years 0 & -1). See Table 3.

Table A.18: Robustness checks: Clustering options

	Dependent variable: Δlog Housing units p.c.			
	(1)	(2)	(3)	(4)
RD Estimate	0.558	0.549	0.556	0.562
Pr >|z|	[0.000]	[0.000]	[0.000]	[0.000]
Robust c.i.	(0.295. 0.908)	(0.237, 0.861)	(0.295. 0.905)	(0.316. 0.891)
Bandwidth selector	MSE	MSE	MSE	MSE
Bandwidth	0.084	0.091	0.085	0.083
#Observations	953	953	953	953
Effective #Obs.	556	591	561	549
Lag log Units p.c.	Yes	Yes	Yes	Yes
Time f.e..	Yes	Yes	Yes	Yes
Cluster	None	Election	City	County

Notes: (1) See Table 3.

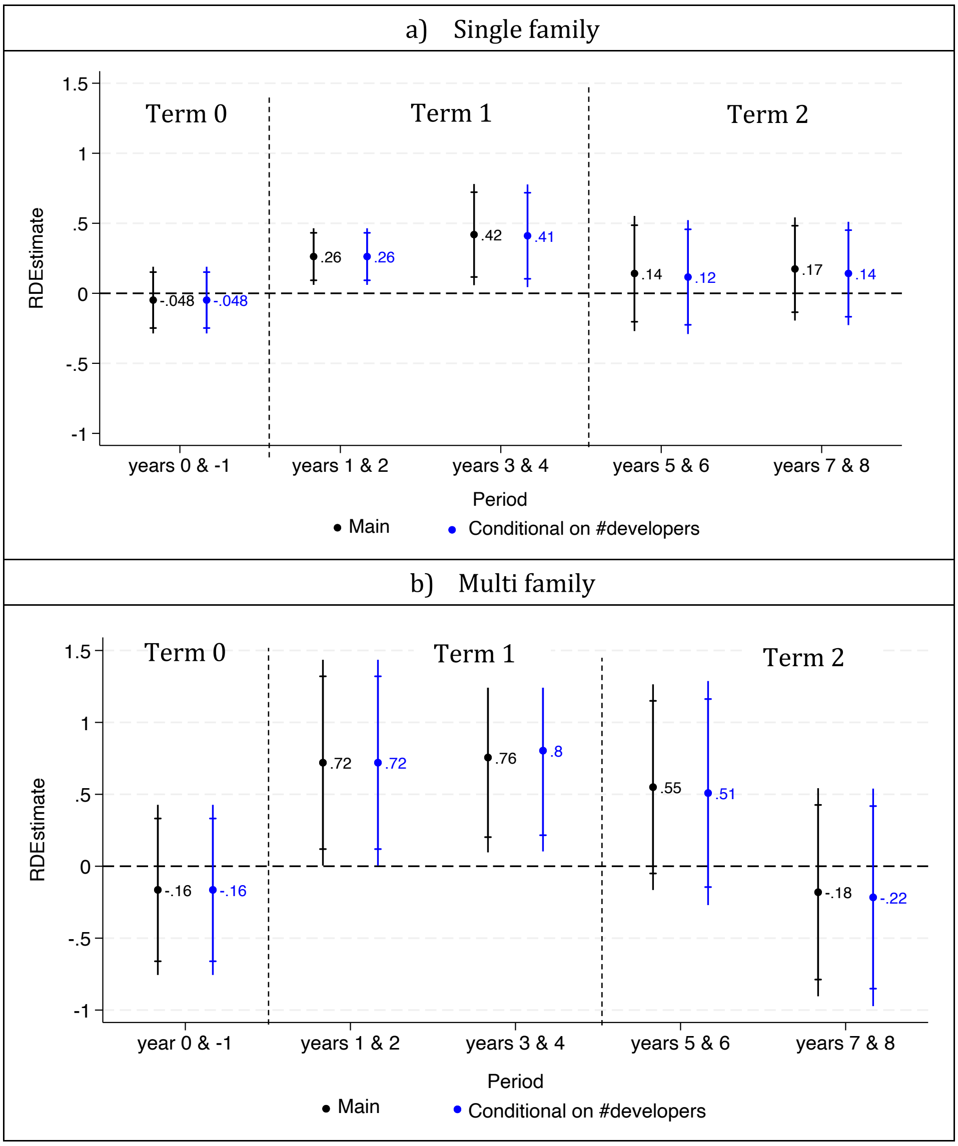
Table A.19: Robustness checks: Real estate group

	All candidates (1)	Developers (2)	Realtors (3)
RD Estimate	0.549	0.576	0.462
Pr >|z|	[0.000]	[0.008]	[0.012]
Robust c.i.	(0.237, 0.861)	(0.163. 1.096)	(0.110. 0.910)
Bandwidth	0.091	0.090	0.095
#Observations	953	414	539
Effective #Obs.	591	254	337

Notes: (1) The table reports the effect on Housing Units permitted by All candidates and also separately by Type of real estate profession (i.e., Developers and Home Builders and Realtors and similar professions). (2) RD Estimates: triangular kernel with first order polynomial fitted on the optimal bandwidth. We control for lagged units and Time fixed effects. We report the Conventional RD estimates. the Robust 95% c.i. computed as per Calonico et al. (2014), and the robust p-value (Pr >|z|). (3) Dependent variable: logged number of total units permitted per capita during the full term of office (years 1 to 4); (4) Sample: elections of the period 1995-2017.

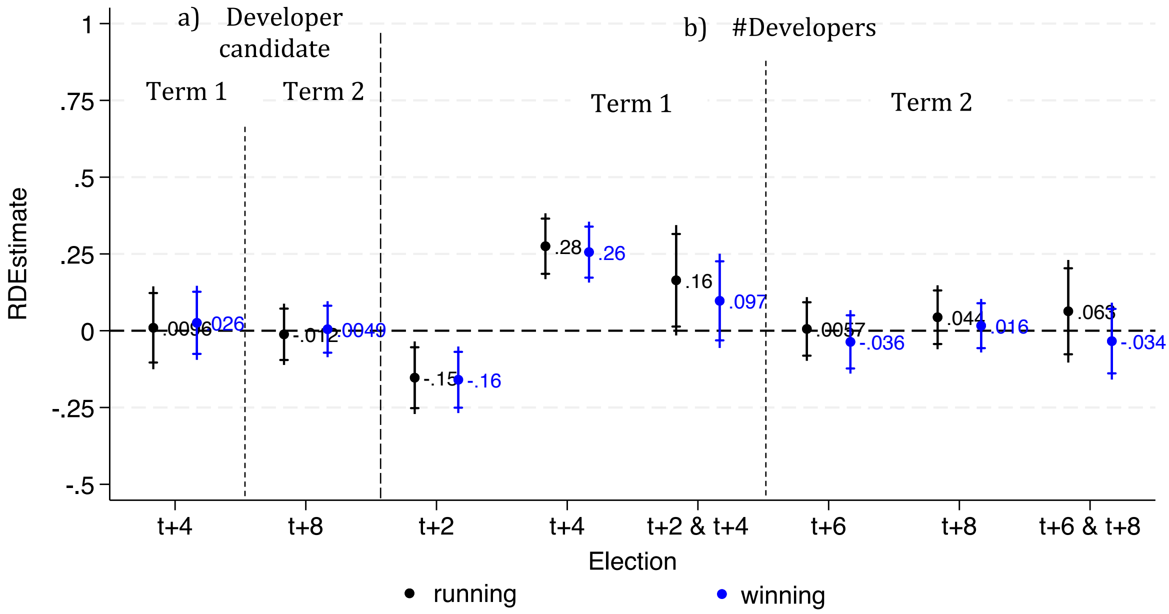
C.2 Additional results

Figure A.10: Dynamic effects by Type of unit



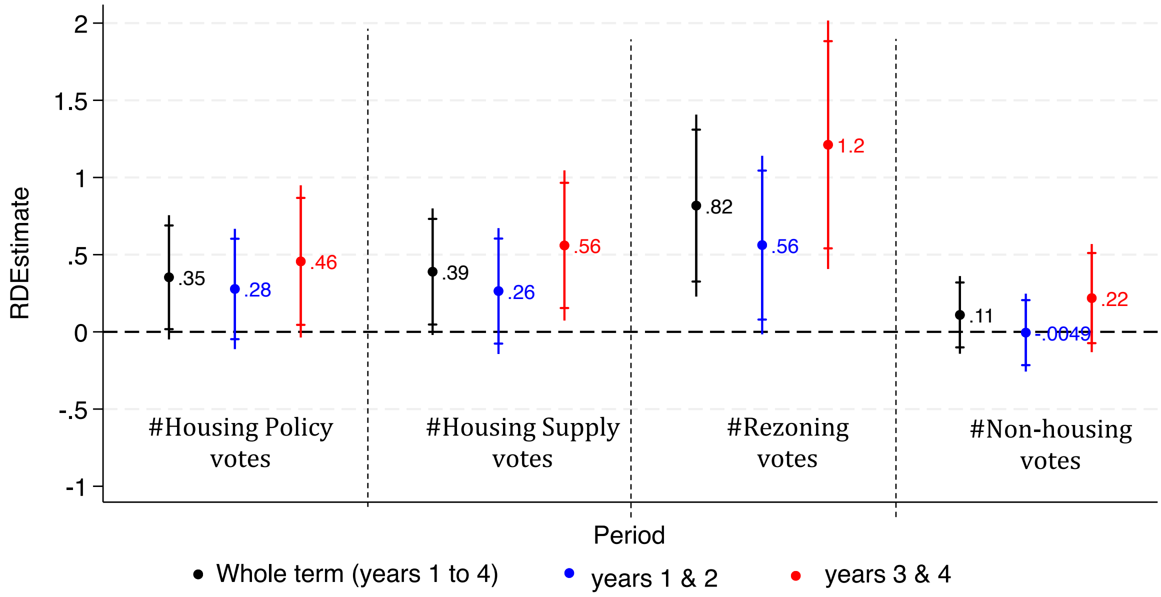
Notes: (1) Panel (a) displays the RD Estimates using as dependent variable the number of single-family units permitted per capita. The figure displays the results for the number of permitted units permitted during each two-year period (i.e.. years 1 & 2. years 3 & 4. etc.). (2) The main results are displayed in black; these are RD Estimates: triangular kernel with first-order polynomial, including lagged Housing units p.c. and Time f.e. as controls. The results after controlling for the number of developers elected at the different elections (years 2. 4 and 6) are displayed in blue. (3) Panel (b) displays the results of the estimation of a Two-part model, estimated using the 'twopm' command in Stata; part one accounts for the extensive margin through a logit model where the dependent variable is a dummy equal to one if the number of multi-family units permitted during the period is positive; part two accounts for the intensive margin through an OLS model where the dependent variable is the log of the number of multi-family units. Both parts are specified as a local RDD. a triangular kernel with a first-order polynomial and a bandwidth of 0.1 and including lagged Housing units p.c. and Time f.e. as controls. (4) 95% and 90% c.i. displayed; standard errors clustered at the city x election level.

Figure A.11: Developer reelection: individual developer vs group



Notes: (1) Panel (a) displays the RD Estimates using as dependent variable a binary variable indicating whether the developer candidate running in t is running or winning again in t+4 and t+8; Panel (b) uses as dependent variable the number of developers running in the elections held during the first term (that is, in t+2, t+4 and t+2 & t+4 together) and also in those in the second term (t+6, t+8 and t+6 and t+8 together). (2) The RDD is a triangular kernel with a first-order polynomial and a bandwidth of 0.1. (3) 95% and 90% c.i. displayed; standard errors clustered at the city x election level

Figure A.12: Housing policy votes: #Votes by policy and period



Notes: (1) The figure shows the effects of the election of a developer on the number of votes related to local housing policies; we show the results for four different categories of votes: Housing Policy, Housing Supply, Rezoning, and Non-housing votes. (2) We use an RDD estimation with local randomization. the bandwidth of 0.7% has been selected using the command rdwinselect for Stata (Cattaneo et al. 2016) and we perform a randomization tests using the ritest command for Stata (Heβ. 2017); the variables are measured at the election x year level; standard errors are clustered at the election level when performing the test. (3) See Appendix B.2 for information of the procedure to obtain the council vote data

Table A.20: Housing policy votes: %Motions approved

	Votes on:			
	Housing policy	Housing supply	Rezoning	Non-housing
	(1)	(2)	(3)	(5)
	a) Dep. variable: %Motions approved by Majority			
RD Estimate	0.027	0.012	-0.048	-0.067
Pr >|z|	[0.373]	[0.430]	[0.694]	[0.793]
Mean dep. Var. (controls)	0.797	0.818	0.899	0.851
Mean dep. Var. (treated)	0.819	0.828	0.855	0.799
	b) Dep. variable: #Votes (reduced sample)			
RD Estimate	0.387	0.419	1.194	0.099
Pr >|z|	[0.096]	[0.056]	[0.022]	[0.253]
Bandwidth	0.007	0.007	0.007	0.007
Effective #Obs.	110	110	110	110

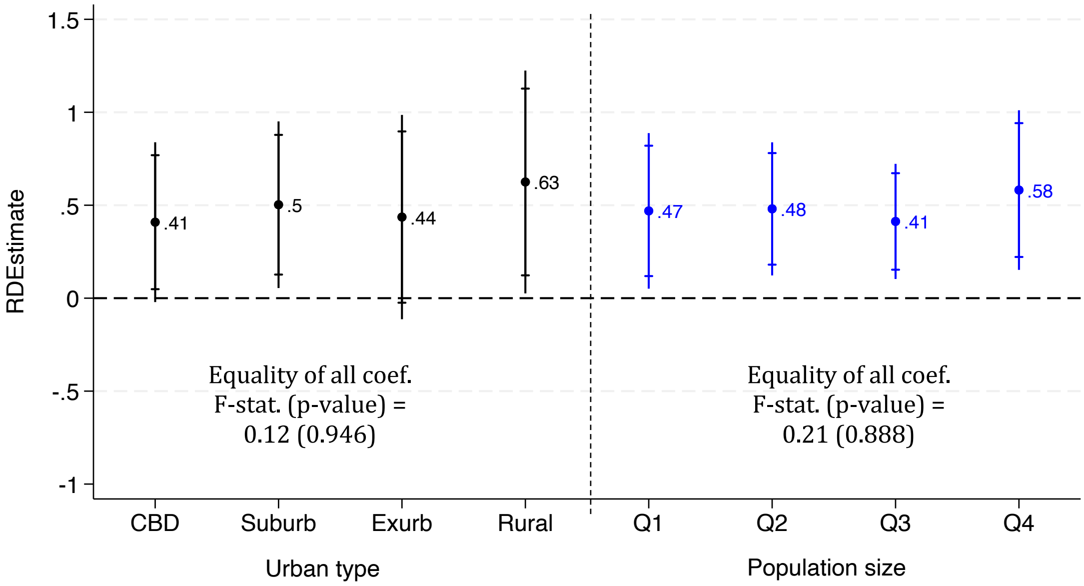
Notes: (1) The table shows the effects of electing a developer on the percentage of motions accepted during the term (approved by majority, in Panel A), with results broken down by vote type. (2) The RD coefficient is estimated using local randomization; a 0.7% bandwidth was selected using the rdwinselect command in Stata (Cattaneo et al., 2016), and randomization tests were performed using the ritest command (Heß, 2017). (3) In Panel B, we report the RDD coefficient for the number of votes to show that the results hold with this reduced sample (some motions lack specific "aye" vote data). (4) P-values are in brackets; standard errors are clustered at the city x election level.

Table A.21: Housing affordability

	a) Low Income Housing		b) Affordable housing votes	
Period	Term 1	Term 2	Term 1	
	l(LIHTC units>0)		#Votes	%Approved
	(1)	(2)	(3)	(4)
RD Estimate	0.074	0.141	0.643	-0.033
Pr >|z|	[0.344]	[0.041]	[0.090]	[0.587]
Effect in %Δ	18.73	37.30	64.32	-3.90
Mean dep. Var.	0.395	0.378	0.563	0.834
Bandwidth	0.096	0.095	0.007	0.007
#Observations	896	896	--.--	--.--
Effective #Obs.	564	564	195	110

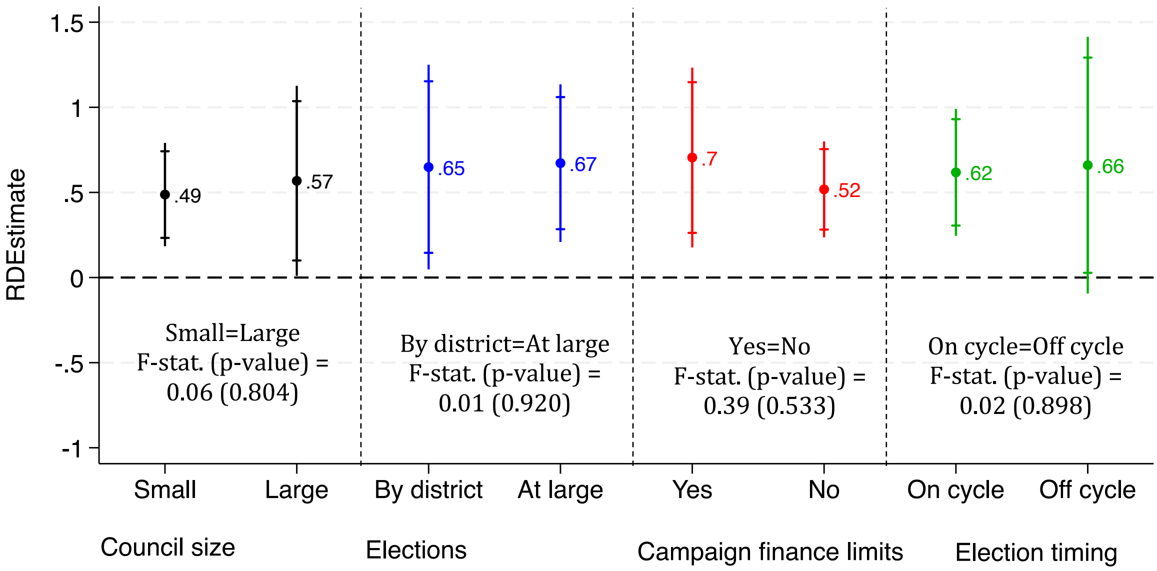
Notes: (1) The table presents the RD results using housing affordability indicators. (2) In Panel a we look at the effect on the number of Low-Income Housing Tax Credit units, reporting results for the extensive margin (whether the city build any at least one unit during the term, l(LIHTC units>0)); In Column 1 we present the results for the first term (years 1 to 4) and in Column 2 the results for the following term (years 5 to 8). RD Estimates: triangular kernel with first order polynomial fitted on the optimal bandwidth. We report the Conventional RD estimates and the robust p-value (Pr >|z|). (3) In Panel b present the results of the RD estimation using local randomization using as outcome the number of Affordable Housing votes and the share of these votes that are approved by majority; these variables are measured at the election x year level because not all the cities have available minutes data for all the years of the term; standard errors are clustered at the election level when performing the test. See also Tables 5 and A.20. (4) See section B.2 in the Appendix for information of the procedure to obtain the council vote data.

Figure A.13: Heterogeneous effects: Urban type & Population size



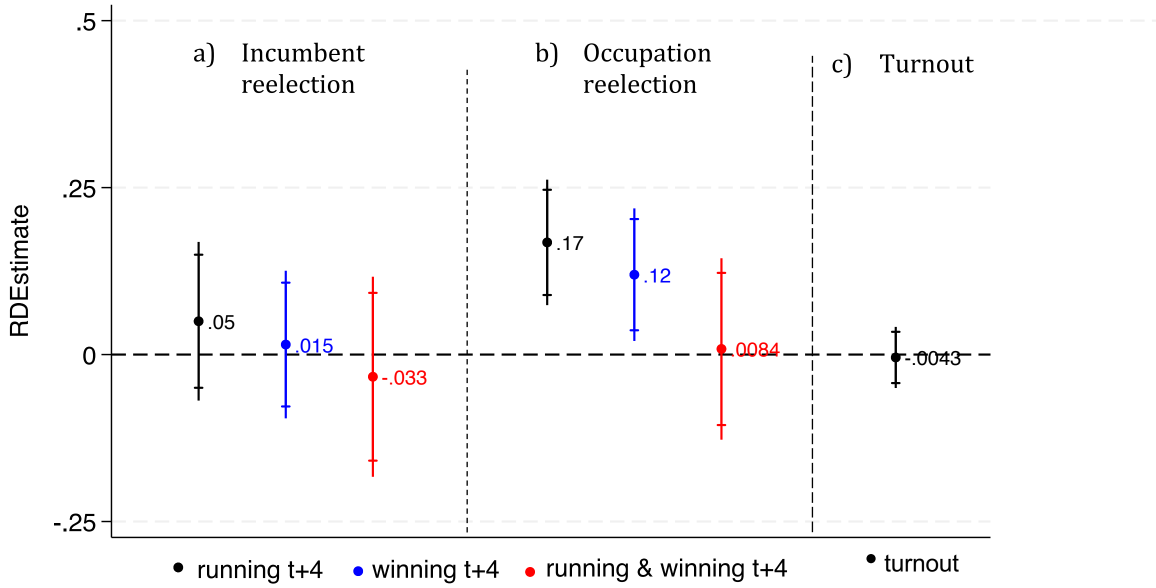
Notes: (1) The graph shows a series of RD subgroup analysis for different Urban types (CBD, Suburb, Exurb, and Rural), and for the four quartiles of Population size. (2) Interacted OLS-RDD estimated on the optimal bandwidth of the main analysis; we control for time fixed effects and lagged logged Housing units p.c. (5) Sample: elections of the period 1995-2017. (6) We show the 90% and 95% c.i. and we report a test of equality of all the coefficients in each analysis.

Figure A.14: Heterogeneous effects: Political institutions



Notes: (1) The graph shows a series of RD subgroup analysis for different Urban types (CBD, Suburb, Exurb, and Rural), and for the four quartiles of Population size. (2) Interacted OLS-RDD estimated on the optimal bandwidth of the main analysis and using matching weights (Carril et al., 2020); we control for time fixed effects and lagged logged Housing units p.c. (5) Sample: elections of the period 1995-2017. (6) We show the 90% and 95% c.i. and we report a test of equality of all the coefficients in each analysis.

Figure A.15: Electoral backlash



Notes: (1) Graph a shows the results of the estimation of the RDD using as outcome a binary variable indicating whether the incumbent (that is, the winner at the elections in year t) is running, winning and winning conditional on winning at elections in t+4. Graph b uses as outcome a binary variable indicating whether in t+4 there is any candidate or elected representative with the same occupation than the incumbent. Graph c uses turnout as outcome. (2) The RDD is a triangular kernel with a first-order polynomial and a bandwidth of 0.1. (3) 95% and 90% c.i. displayed; standard errors clustered at the city x election level.

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