How Partisanship in Cities Influences Housing Policy

Justin de Benedictis-Kessner*    Daniel Jones†    Christopher Warshaw‡

December 9, 2021

Abstract

Housing policy is one of the most important areas of local politics. Yet little is known about how local legislatures and executives make housing policy decisions and how their elections shape policy in this important realm. We leverage survey data, housing policy data, and a new data source of 13,645 city council elections and 2,725 mayoral elections in large cities in the United States and a regression discontinuity design to examine partisan divides in housing policy among the mass public as well as the impact of local leaders’ partisanship on housing policy. We provide robust evidence that electing mayors from different political parties shapes cities’ housing stock. Electing a Democrat as mayor leads to increased multi-family housing production. These effects are concentrated in cities where councils do not have power over zoning appeals. Overall, our paper shows that politics influences local housing policy, and it contributes to a larger literature on local political economy.

Keywords: Local politics, representation, elections, housing

---

*Assistant Professor, John F. Kennedy School of Government, Harvard University, jdbk@hks.harvard.edu
†Associate Professor, Graduate School of Public & International Affairs, University of Pittsburgh, daniel.jones@pitt.edu
‡Associate Professor, Department of Political Science, George Washington University, warshaw@gwu.edu
Introduction

The lack of residential development in cities has led housing prices to rise over the past four decades, especially in larger cities (Glaeser, Gyourko, and Saks, 2005; Glaeser and Gyourko, 2018). Political opposition to new housing and restrictive local land use policy have combined to stunt residential housing construction in many metropolitan areas (Einstein, 2021; Einstein, Glick, and Palmer, 2019; Trounstine, 2020). Though politics in cities has long been concerned with growth and development policy – attracting both businesses and residents (Logan and Molotch, 1987; Peterson, 1981; Stone, 1989) – some of the most contentious policymaking debates in large cities are now focused on residential housing development. Because these large cities tend to be more liberal and Democratic, many in the popular media have suggested that Democrats — both elites and members of the mass public — have caused this housing crisis (e.g. McArdle, 2018). This account of the problem raises the question of how partisanship may structure policy views and outcomes in this important policy arena. Moreover, given the clear negative externalities of skyrocketing housing prices in cities, it leads to a question of whether political leaders in cities are creating policy that represents the wishes of their constituents.

While cities and the politicians who lead them are a critical component of political representation in the United States, and local governments constitute the majority of elections and elected officials in the country, we know little about the quality of democratic representation and accountability in these settings when compared to state governments and the federal government (Trounstine, 2010; Warshaw, 2019). In particular, despite recent research on the role of local executives in the formation of city fiscal policy, very little is known about how local legislatures make political decisions, and the effects of both local legislators’ and executives’ elections on policy outside the fiscal realm. As a result, despite media attention to the housing affordability crisis in cities, whether and how politics has caused this crisis and the degree to which housing policy outcomes represent the wishes of voters remains an empirically unanswered question.
This paper examines several markers of democratic representation in local housing policy: the degree to which partisanship shapes mass opinion on housing policies and the degree to which partisan representation delivers different housing policy to constituents when they elect local politicians from different parties. Though fiscal policies may correspond with the views of the population in cities (Tausanovitch and Warshaw, 2014; Einstein and Kogan, 2016; Moy, 2021), we know little about whether housing policy is similarly responsive. Nor do we know whether elections enable this type of responsiveness. The partisanship and ideology of local politicians may be important cues for voters that enable representation (Boudreau, Elmendorf, and MacKenzie, 2015; Crowder-Meyer, Gadarian, and Trounstine, 2020; Kirkland and Coppock, 2018; Sances, 2018). Examining the degree to which local leaders’ partisanship shapes policy is therefore critical for assessing the health of democratic representation.

In this paper, we leverage a bevy of data sources to holistically assess partisanship and local housing policy. Using original survey data, we show that there are sharp partisan divides in opinions on housing policy. This polarization is reflected in broad observational data, which indicate that more Democratic cities produce multi-family housing at different rates than more Republican cities. Using a new data source of elections in large cities in the United States and a regression discontinuity design, we also examine the causal impact of city councilors’ and mayors’ partisanship on housing policy. We examine 13,645 individual city council elections and 2,725 mayoral elections in 374 large cities between 1980 and 2018. Reflecting previous work on the limits to the role of partisanship in local politics, we provide evidence that electing city councilors from different political parties has essentially no effect on cities’ housing policy outcomes. However, we provide robust evidence that mayoral partisanship has large and significant effects on housing outcomes. Though previous work has indicated the fiscal policy consequences of local officials’ partisanship (de Benedictis-Kessner and Warshaw, 2016, 2020) – leading some to suggest that partisanship only plays a role in such types of mundane budgetary policy – we show that these effects extend to other
areas of policy. Specifically, we show that mayoral partisanship affects contentious multi-family housing production. Electing a Democrat as mayor leads to increases in the supply of multi-family housing units. These effects are larger in places where the city council has no veto power over new development. Moreover, we find suggestive evidence that mayoral partisanship influences the affordability of cities: electing a Democrat as mayor appears to lower housing prices in subsequent years.

Overall, our results indicate that partisan representation is alive and well in city politics. Partisan divisions in reported policy preferences are reflected in the correspondence between housing policy in large cities and the partisanship and ideological leanings of those cities’ populations. City councilors may be limited by the institutional configurations in which they act, and their influence on housing policy pales in comparison to the size of the effects that mayoral partisanship has on the same policies. Thus our results reinforce longstanding wisdom in the urban politics literature on the power of mayors relative to other local officials (e.g. Svara, 1990). Together, our results examining both city councilors and mayors help to provide an updated and holistic assessment of the consequences of partisanship in cities for a policy area of contentious contemporary debate.

**Related Work and Theoretical Framework**

There are a variety to reasons to expect that the partisan composition of city governments should affect municipal policy. Einstein and Glick (2018) show that Democratic mayors tend to have more liberal preferences on fiscal issues. While earlier work suggests that fiscal outcomes do not differ based on the party of the mayor (Ferreira and Gyourko, 2009), more recent work has shown that the election of Democratic mayors and county legislators leads to greater spending (de Benedictis-Kessner and Warshaw, 2016, 2020). The influence of partisanship on policy outcomes might naturally extend to city councils as well. Indeed, previous research has found that legislators tend to form ideological coalitions even within
nominally nonpartisan city councils (Burnett, 2019). Partisanship may increasingly matter in local politics as subnational politics has become concerned with more national partisan issues (Hopkins, 2018; Martin and McCrain, 2019). Electing individual politicians from one party or another therefore may have the potential to both change the ideology of the median voter in the legislature and influence policy outcomes. This could be especially true in policy areas where the ideological preferences of Democratic legislators are far from the preferences of Republican legislators (de Benedictis-Kessner and Warshaw, 2020; Lee, Landgrave, and Bansak, 2020).

Housing policy, and especially multi-family housing production, has increasingly become associated with the two major political parties in the US. Recent claims by then-President Donald Trump that Democrats would “destroy” suburbs alongside criticism by national partisan elites of Democratic attempts to increase multi-family housing underscore this. At the local level, Democratic and Republican mayors have different views on housing policy (Einstein, Glick, and Palmer, 2017; Einstein et al., 2018). Democratic state legislators in California were also more likely than Republicans to support a recent landmark bill there to expand housing production. Empirical findings on voter preferences have largely paralleled these conclusions on elite opinion. While earlier findings suggest that Democratic voters largely opposed new development (Gerber and Phillips, 2003; Kahn, 2011), more recent evidence suggests that – at least relative to Republicans – Democrats are more likely to favor development (Einstein, Palmer, and Glick, 2019; Einstein and Glick, 2016; Lessem, Niebler, and Urban, 2020; Marble and Nall, 2021), especially as a response to housing supply shortages and the associated impact on local inequality. Theoretically, these ideological differences should be the driving mecha-

1Though, see Bucchianeri (2020).
nism behind potential changes in housing policy that result from the election of politicians from different parties.

Local politicians in any office may have the ability to influence housing policy. Mayors often set policy goals more broadly for cities using their budget and political leadership. In addition, alongside their local housing authorities, mayors usually control the disbursement of federal housing subsidies to local residents and property developers. Mayors also ordinarily appoint members of zoning boards of appeal that control variances to existing zoning regulations. City councilors may also play an especially important role in housing development given that zoning boards must often seek approval for their decisions from the city council (Anderson, Brees, and Reninger, 2008). City councilors may have incentives to influence development specifically in their geographic districts due to concentrated constituent pressure (Hankinson and Magazinnik, 2020). We therefore anticipate that the election to city councils and mayors’ offices of a Democrat, rather than Republican, will increase new housing production, especially for multi-family units.

While it may seem obvious that partisanship should affect local housing policy, as it does most other aspects of American politics, a variety of previous literature has argued that housing policy differs from more traditionally-ideological fiscal policy. A number of scholars have argued that while partisan polarization may exist on abstract housing policies, such divisions might not exist for concrete housing policy decisions and outcomes (Anzia, 2021; Hankinson, 2018). Others have argued that divisions – both at the elite level and among the mass public – on local policy issues like housing may correspond not with partisanship but with other factors such as homeownership (Einstein, Glick, and Palmer, 2019), self-interest (de Benedictis-Kessner and Hankinson, 2019; Marble and Nall, 2021), race and class (Hajnal and Trounstine, 2014; Schaffner, Rhodes, and La Raja, 2020), seniority (Anzia,

---

4 Though see Gabbe and Kahn (2021) for evidence that this kind of political influence does not happen among Los Angeles city council districts.

5 For one piece of anecdotal evidence, the city councils in Seattle and Minneapolis that put forth proposals to abolish single-family zoning in their cities to address housing shortages and affordability were nearly-entirely Democratic/Democratic-Farmer-Labor.
2019), preferences for privatization (Bucchianeri et al., 2021), or membership in other groups (e.g. Anzia, 2011). Thus the election of politicians from different parties might lead to little changes in the policy preferences of officials in power or policy outcomes. Finally, there is a large literature on the constraints on local officials’ influence over policy due to state control, which may limit the ability of local politicians to change policy even if they wished to do so (Peterson, 1981, 1995). This work suggests that given the numerous layers of approval needed for increases in housing development – ranging from appointed planning and zoning commissions, to boards of zoning appeals, to judicial review (Anderson and Sass, 2004) – local political leaders may have little ability to influence housing policy.

**Data and Research Design**

To assess the effects of partisanship on local housing policy, we leverage a variety of sources of original data. To examine the mass public-driven motivations for partisan influences on housing policy change, we examine city-level partisan vote shares in presidential elections and survey data on local housing policy. In order to examine the policy effects of the partisan composition of city governments, we collect data on city mayoral and legislative elections and housing policy based on permits for private housing development.

**Survey Data**

Our data on mass public opinion come from an original survey we fielded in November 2020 on a diverse, national sample of respondents via the survey firm PureSpectrum. We fielded this survey of 1,111 respondents using quotas to match the demographics of the United States as a whole. The questions on this survey included three questions on local housing policy, as well as several questions on federal spending policy and demographic questions to assess the backgrounds of our survey respondents. We examine responses to our three housing

---

6We base these quotas on the 2014-2018 ACS. In Appendix A we show the demographics of this survey sample compared to targets from the ACS and, for partisanship, from the ANES.
policy questions – on support of local rent control, local government subsidized housing to
the homeless, and allowing multifamily housing everywhere in their city – to gauge public
opinion on this contentious issue.\footnote{The full wording of all outcome questions we use are in Appendix B.}

\section*{City Election Data}

To assess partisan representation via elections, we gather data on elections from 1980-2018
in medium and large cities with a population of more than 75,000 people in 2010. We focus
on medium and large cities because these cities are likely to have more flexibility to change
policy than smaller ones.\footnote{We use a combination of data from previous papers (Ferreira and Gyourko, 2009; Gerber and Hopkins, 2011;
de Benedictis-Kessner and Warshaw, 2016), administrative records, and the crowd-sourced OurCampaigns
website to assemble election returns. For officially nonpartisan elections, we estimate candidates’ parti-
sanship based on information in OurCampaigns, matches to the voter file using the firm L2, candidates’
campaign-finance-based (CF) ideology scores (Bonica, 2014), and candidates’ partisanship in elections for
other offices.} The final dataset that we use in our analysis consists of 13,645 individual city council elections in 374 large cities between 1980 and 2018 and 2,725 mayoral elections in 358 cities from 1980 to 2018. Most of these elections – especially our legislative
elections data – are concentrated in more recent years, as displayed in Figure 1.

\begin{figure}[h]
\centering
\begin{subfigure}[b]{0.45\textwidth}
\includegraphics[width=\textwidth]{city_council_elections.png}
\caption{City Council Elections}
\end{subfigure}\hspace{1cm}
\begin{subfigure}[b]{0.45\textwidth}
\includegraphics[width=\textwidth]{mayoral_elections.png}
\caption{Mayoral Elections}
\end{subfigure}
\caption{Temporal Coverage of Elections Data}
\end{figure}

Figure 2 shows the size of the legislatures in the cities in our dataset. Typical city councils
are fairly small, and the large cities in our data have a median of 7 councilors. Most cities
have relatively small councils with fewer than 10 members, but some cities, such as New
York City, have councils with up to 51 members.
While many big cities have predominantly Democratic populations (Rodden, 2018), their representatives on city councils and in mayors’ offices are not uniformly Democratic. In Figure 3 we plot the proportion of seats held by each party (on the left) and the proportion of mayors from each party (on the right) in the big cities in our data over time. While Democrats consistently hold a larger proportion of seats on city councils than Republicans on average, Republicans do hold a nonzero share of the seats on city councils – and close to a quarter of seats on average in the last ten years. Meanwhile, only a little more than half of the mayors’ offices in our data are occupied by Democrats, while around a quarter are occupied by Republicans.
City Housing Permits Data

To study the impact of the partisanship of city leaders on housing policy, we use data on the housing development permits issued by each city in each year from the Census Bureau’s Building Permits Survey. The Building Permits Survey is sent to local building permit officials via a mail or online survey and compiled into datasets by the Census Bureau’s Manufacturing and Construction Division. These data contain statistics on new privately-owned residential construction at the level of individual permit-issuing jurisdictions by year.

Figure 4: Over-time changes in cities’ housing stock, with the total number of buildings permitted and multi-family percent of buildings (top panel), and the total number of units permitted and multi-family percent of units (bottom panel). Both panels use the full dataset of building permits from all cities with a population over 75,000 in 2010.

We use the city-level annual summary data files that contain total numbers of buildings and units permitted by the type of housing structure — either single-family detached homes

---

9These data are inherently limited, of course, to new construction for which there was a building permit issued by a government authority. However, the Census Bureau estimates that less than 3% of all privately owned housing units in permit-issuing jurisdictions are built without a permit (U.S. Census Bureau, 2011).
or multi-family buildings of two or more housing units — as well as the multi-family proportion of buildings and units that are built. We show the over-time variation in these key outcomes variables for all large cities in our target universe in Figure 4.

**Land Use Regulation**

In order to assess the impact of land use regulatory institutions at the city level, we use data on the power of local councils to veto new development. These data are from the Wharton Land Use Regulatory Index (Gyourko, Saiz, and Summers, 2008), a dataset compiled from responses to a survey mailed by researchers in collaboration with the International City/County Management Association’s (ICMA). These data were first collected in 2008 and updated in 2018 (Gyourko, Hartley, and Krimmel, 2021), and contain an array of information on the regulatory landscape in cities with regard to land use. Specifically, we use information from this dataset in the most recent year available about whether a city requires the approval of a majority of local councilors or commissioners, or of the city manager, in order for any residential land use changes that do not require re-zoning (i.e. “by-right” development). We use this source of data to assess the differential impact of city leaders’ partisanship under different regulatory regimes.

**Regression Discontinuity Design**

We use a regression discontinuity (RD) design to identify the effect of electing city councilors of different parties on fiscal policy.\(^{10}\) We exploit the fact that a sharp electoral threshold, 50%

---

\(^{10}\)Previous studies in the urban politics literature have also used the regression discontinuity design to examine the local incumbency advantage (de Benedictis-Kessner, 2018; Ferreira and Gyourko, 2009; Trounstine, 2011; Warshaw, 2019), the effects of mayoral partisanship (Ferreira and Gyourko, 2009; Gerber and Hopkins, 2011; de Benedictis-Kessner and Warshaw, 2016) and race (Hopkins and McCabe, 2012) on policy, the effects of electing mayors or city councilmembers with business experience on city policies (Kirkland, 2021; Beach and Jones, 2016), the impact of racial diversity in city councils on spending patterns (Beach and Jones, 2017), and the impacts of partisan (Macartney and Singleton, 2018) and racial (Kogan, Lavertu, and Peskowitz, 2021) representation in school boards.
of the two-party vote share, determines which party wins city council elections. The validity of the RD design depends on the assumption that only the winning candidate — and not the distribution of units’ potential outcomes — changes discontinuously at the threshold (Hahn, Todd, and Klaauw, 2001; Lee and Lemieux, 2010). One way to check the validity of this assumption is to examine the density of observations across the threshold with a McCrary test (McCrary, 2008). We conduct this diagnostic test and find a null result for both council and mayoral elections, which suggests the RDD can be used. We also conduct a nonparametric test (Cattaneo, Jansson, and Ma, 2019) and an equivalence test (Hartman, 2021) for the density of observations. These additional tests suggest that the assumption of continuity of potential outcomes is unlikely to be violated, though we cannot rule out some degree of differences in the density of observations across the threshold for mayoral elections. Consistent with the large-scale validation of electoral regression discontinuity (RD) design studies conducted by Eggers et al. (2015), we also observe no significant discontinuities in lagged values of the running variable or other key placebo variables. In order to increase statistical efficiency, we estimate treatment effects on changes in outcomes rather than on levels (Lee and Lemieux, 2010). In order to account for the lag in time between a politician taking office and their ability to influence policy outcomes, our main analyses focus on the difference between housing outcomes in the election year and the average of outcomes measured two and three years after the election. We estimate the effect of electing a Democratic city councilor (or mayor) rather than a Republican councilor (or mayor) based on the “jump” in outcome variables at the threshold. We model the relationship between the assignment and outcome variables with local

---

11 In multimember district elections, we compare the winners and runner-up for the last seat in the race (e.g., in a district with three seats up for election, we compare the votes of the 3rd and 4th placed candidates).

12 The full results from these tests and histograms showing the density of observations across the threshold are presented in Appendix C.

13 These placebo results are shown in Appendix D, which show the effect of electing a Democrat on lagged versions of the running variables and housing outcomes.

14 This strategy enables us to increase statistical power over a strategy using changes in outcomes between the election year and two years after the election by reducing noise in outcomes from individual years. de Benedictis-Kessner and Warshaw (2020), Gerber and Hopkins (2011) and de Benedictis-Kessner and Warshaw (2016) use a similar approach.
linear regression, using the default optimal bandwidth options in the \texttt{rdrobust} package in R (Calonico, Cattaneo, and Titiunik, 2014a).\textsuperscript{15} The optimal bandwidth is chosen to minimize mean-square-error (MSE) and confidence intervals are adjusted to account for remaining bias (Calonico, Cattaneo, and Titiunik, 2014b; see also Imbens and Kalyanaraman, 2012).\textsuperscript{16} In order to address the fact that there are often multiple elections in a given year for a particular city, we cluster standard errors by city-year.\textsuperscript{17}

**Results**

In this section, we examine the effects of partisanship on housing policy. We first examine the role of partisanship among members of the public and housing policy to assess polarization at the mass level in this policy area. We then turn to the effects of politicians’ partisanship on housing policy, and assess these in a cross-sectional framework, examining the association between the partisan composition of city councils and city policy, followed by the association between changes in these values. We then move to our main analytical framework and use a regression discontinuity design to examine the causal effect of city councilors’ and mayoral partisanship on policy. Together, these analytical strategies yield results suggesting that while city councilors have little influence on the development of multi-family housing, the partisanship of mayors has a large effect on permitting of new multi-family housing.

\textsuperscript{15}In our main analysis, we use the default local linear regression in \texttt{rdrobust} because Calonico, Cattaneo, and Titiunik (2014b) show that local linear regression models perform well in RD designs with optimal bandwidth selection (see also Cattaneo, Idrobo, and Titiunik, 2017, 41-42).

\textsuperscript{16}Our results are robust to this choice of bandwidth, however. We show our effects for other bandwidths than the optimal-MSE one in Appendix H.

\textsuperscript{17}We use the ‘cluster’ option in \texttt{rdrobust}. One final complication for our analysis is that while the vast majority of city councils are small (see Figure 2), with nine or fewer members, our dataset is heavily skewed toward the small number of cities with larger legislatures. To address the over-representation of cities with large councils in our dataset, we weight our regression discontinuity analyses of the effects of councilor partisanship based on the number of councilors in each city council relative to the average number of councilors, such that elections for larger councils are weighted less heavily than ones for smaller councils. This enables us to interpret the results as the effect of elections in the average city rather than the average election. This approach prevents the handful of cities with very large councils from driving our results. However, we display results using unweighted analyses, which are very similar, in Appendix L.
Partisan Polarization on Housing Policy at the Mass Level

As a first look at the influence of cities’ partisanship on housing policy, we show the descriptive association between the partisan composition of cities and the composition of permitted housing development. Figure 5 shows the correspondence between a city’s Democratic vote-share in the 2008 presidential election, along the horizontal axis, and, along the vertical axis, the multi-family share of buildings permitted (in the left panel) or multi-family share of units permitted (in the right panel). The trendline in both plots shows the smoothed local average, and indicates that cities with a more Democratic electorate permit more new multi-family housing than cities with a less Democratic electorate.18

![Figure 5: Association between city presidential voting and composition of housing permitted. Points show the multi-family proportion of buildings (left panel) and units (right panel) permitted along the vertical axis, and the 2008 Democratic presidential voteshare along the horizontal axis.](image)

Of course, these aggregate patterns might not hold at the individual level. To assess the role of partisanship in individuals’ views on housing policy, we turn to survey data on local policies. We use the three questions on our survey about housing policy to assess partisan differences in public opinion on this issue. In Figure 6 we show the percentage supporting

---

18In Appendix E we also show that cities with more Democratic populations also permit greater quantities of multi-family housing in addition to the greater multi-family shares of housing shown here, and that these patterns in the mass public replicate when using the average ideology of a city’s population (Tausanovitch and Warshaw, 2014) rather than just their partisan voteshares.
each of these housing policies by respondents’ partisanship.\textsuperscript{19} We find that Democratic respondents were more supportive of all three housing policy proposals than Republican respondents. The partisan gaps in support for these proposals ranged from 5 percentage points, for support on subsidized homeless housing, to 19 percentage points, for allowing multifamily housing everywhere in their city. These gaps represent sizable polarization in opinions between partisan groups.\textsuperscript{20}

![Figure 6: Partisan Differences in Housing Policy Opinions](image)

**Association Between Local Politicians’ Partisanship and City Housing Policy**

Perhaps unsurprisingly given these patterns at the level of the mass public, cities with more Democratic leaders are also more likely to build more multi-family housing. The left panel of Figure 7 shows the correspondence between the share of city council seats held by Democrats, along the horizontal axis, and along the vertical axis the multi-family share of units permitted. The trendline in the plot suggests a positive relationship: in cities with more Democratic city councils, the new housing built includes more multi-family units.

\textsuperscript{19}We create these binary measure of support based on respondents who reported that they favor or or strongly favor the policies, as opposed to opposing or strongly opposing the policies (for rent control and subsidized homeless housing), and for those reporting they preferred allowing multifamily housing everywhere in their city rather than only in the densest areas.

\textsuperscript{20}Two-sample t-tests for differences in proportions also indicate that these difference are statistically significant: for allowing multifamily housing, $p = 0$; for rent control, $p = 0.02$; for for subsidized homeless housing, $p = 0.06$.  

14
Multi-family housing in cities with no Democrats on their city council accounts for, on average, 30% of units permitted. Meanwhile, multi-family housing in cities with an entirely Democratic city council is 61% of units permitted. Likewise, the right panel of Figure 7 shows the correspondence between the partisanship of the mayor, along the horizontal axis, and the multi-family proportion of units permitted, along the vertical axis. Cities with Democratic mayors permit higher proportions of multi-family housing units than cities with Republican mayors.

![Figure 7: Association between partisanship and composition of housing permitted. Points show the multi-family proportion of units permitted within each 2% bin of the Democratic share of city council seats (left panel) or the partisanship of the current mayor (right panel).](image)

Of course, there are a number of other factors that might be driving these relationships. For instance, cities with greater populations might both have more Democratic populations, more Democratic members of city council, and also need to provide more dense housing in a smaller geographic area.

**Regression Discontinuity Estimates**

In order to determine the *causal* relationship between changes in the partisanship of city leaders and city policy, we turn to a regression discontinuity design. This enables us to isolate the causal effect of electing a Democratic city councilor or mayor, rather than a
Republican, on local housing policy.

We plot these results in Figure 8, with the Democratic margin in the election plotted along the horizontal axis — showing Democratic victories to the right of zero and Republican victories to the left. Along the vertical axis we plot the change in the natural log of the number of multi-family housing units plus one, with positive values meaning an increase in multi-family housing units over previous years’ level of development and negative values meaning a decrease in multi-family units. The trend lines plot local linear regressions weighted using the triangular kernel within the bandwidth selected to minimize mean-squared error (Calonico, Cattaneo, and Titiunik, 2014b). The vertical jump between the two lines at the threshold value of zero along the horizontal axis indicates the effect of electing a Democrat rather than a Republican on housing policy.

\[
\hat{\tau} = 0.09 (-0.55, 0.83)
\]

\[
\hat{\tau} = 0.85 (0.23, 1.68)
\]

Figure 8: The effect of partisanship on changes in the logged number of multi-family units permitted in the fiscal years two and three years after an election

The left panel shows that in the average city, electing a Democratic councilor changes the number of multi-family units permitted in the years after an election by about 9% relative to electing a Republican councilor.\(^{21}\) This effect is statistically insignificant, however. In contrast, electing a Democrat rather than a Republican as mayor leads to an increase in the

\(^{21}\)These results, as well as the others presented in visual format in this section, are displayed in tabular form in Appendix F.
change in the logged number of multi-family housing units permitted of approximately 0.85 several years after their election, as shown in the right panel of Figure 8. In other words, Democratic mayors increase multi-family housing production by over 80%.

How do these effects on multi-family housing production compare to the same effects of city leaders’ partisanship on single-family housing production and total housing production? We display the effects of partisanship on these outcomes in Figure 9. While the election of Democratic mayors leads to increases in multi-family housing production, it has null or negative effects on the total number and number of single-family buildings and units permitted. The largest effects on multi-family housing production appear for the number of housing units, rather than buildings – suggesting that while Democratic politicians do somewhat increase the number of developments in their city, they have larger effects on the size of those developments, which leads to increases in the number of units without necessarily increasing the number of buildings. This may reflect the fact that development of new buildings is more dependent on supply-side factors such as the availability of vacant parcels, while the size of those developments is more easily influenced by the political process.

This increase in multi-family housing units alongside a much smaller increase in the total housing units is a compositional change that can also be represented by the proportion of

![Figure 9: The effect of partisanship on changes in housing permitting in the fiscal years two and three years after an election. Thick bars show 90% confidence intervals and thin bars show 95% robust confidence intervals.](image)
total housing permitted that is multi-family. We plot the effect of electing a Democrat on the composition of housing permitted – that is, the proportion of total housing that is multi-family – in Figure 10. There are large positive effects of mayoral partisanship on the composition of housing units permitted. Electing a Democrat as mayor rather than a Republican leads to a 13 percentage point larger increase in the proportion of housing that is multi-family 2-3 years after their election.²²

![Graph](image)

(a) City Council Elections  
(b) Mayoral Elections

Figure 10: The effect of partisanship on changes in type of housing permitted in the fiscal years two and three years after an election. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

Given that we identify effects of mayoral partisanship on housing production, we also examined one downstream consequence of increased housing permits: housing prices. This analysis builds on research on housing across the disciplines of economics and urban planning that has consistently identified the effect of building more housing (and more multifamily housing) on the affordability of housing in cities (e.g. Glaeser, Gyourko, and Saks, 2005; Glaeser and Gyourko, 2018). To do so, we incorporated data from the Zillow Housing Value Index, a dataset constructed for researchers by Zillow. The index provides a monthly, smoothed, seasonally-adjusted measure of home values (single-family residences and con-

²²These effects also appear to be enduring for the years 2-4 after the election, which we show in Appendix G, alongside analyses using different time horizon averaging of the outcome variable. We also present robustness checks for these analyses using alternative transformations of the main outcome variables in Appendix I: both a non-logged per capita measure, and the natural log of the outcome plus 0.1 rather than the natural log of the outcome plus 1. In addition, we present results using unweighted versions of the city council analyses in Appendix L, and leads of outcomes rather than changes in outcomes in Appendix M.
dominiums) at the city level. For our purposes, we collapse the index to the city-by-year level. We then analyzed the effects of city councilors’ and mayors’ partisanship on the overall housing affordability of cities using these data and the same regression discontinuity design as described earlier. Our analyses in Appendix P provide suggestive evidence that electing a Democrat as mayor leads to a decrease in growth in housing prices, relative to the counterfactual of electing a Republican. However, this analysis is under-powered and should be further examined in future work.

To better understand the conditions under which partisan representation in government influences housing policy, we also examined potential institutional moderators of the effects of city councilors’ and mayors’ partisanship on policy in Appendix N. We assess the different effects of partisanship under strong mayor versus council-manager systems of government, the effects in cities that use district- or ward-based elections for city councilors versus those that use at-large elections, and the effects in cities that use partisan versus nonpartisan ballots in their local elections. We also assess the effects of city councilors’ partisanship in cities that have larger or smaller city councils. In all cases we observe only small differences in the size of the effects of partisanship. Though in no case would we be able to identify a causal effect of the institutions on the size of our main effects due to a lack of over-time changes in institutional configurations, the lack of large cross-sectional differences that we observe do help us to rule out potential institutional dependencies.

**Robustness of Main Regression Discontinuity Estimates**

Our main result thus far is that the election of a Democratic mayor – but not city councilmember – leads to an increase in multifamily housing production. In the Appendix, we demonstrate the robustness of this result to different modeling choices. We briefly discuss some of those tests here and summarize them in Table 1.

First, we show that the result is robust to different time horizons (though the effects peak two to three years after the election) and different averaging over subsequent years to con-
Table 1: Summary of Robustness Checks in Appendix for Mayoral Results

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Robustness Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix G</td>
<td>Different time periods for outcomes</td>
</tr>
<tr>
<td>Appendix H</td>
<td>Different bandwidths for RDD</td>
</tr>
<tr>
<td>Appendix I</td>
<td>Alternative transformations of non-proportion outcomes</td>
</tr>
<tr>
<td>Appendix J</td>
<td>Variety of higher order polynomials for RDD</td>
</tr>
<tr>
<td>Appendix K</td>
<td>Randomization inference, 2% bandwidth</td>
</tr>
<tr>
<td>Appendix P</td>
<td>Nonparametric Difference-in-Difference Model (PanelMatch)</td>
</tr>
</tbody>
</table>

Our main results are robust to different bandwidths for the RD model, which we document in Appendix H. As in results reported thus far, we find that Democratic mayors have an impact on the logged number of multifamily units and the proportion of multifamily units for a wide array of bandwidths, whereas all outcomes are unresponsive to Democratic councilmembers, regardless of bandwidth. We also present results using alternative transformations of the outcome variables that are not proportions in Appendix I, and find similar (but insignificant) results, though our proportion-based outcomes remain the same. We caution that the analyses using non-logged outcomes are subject to over-influence from observations with large outlier values of the outcomes, however. We also obtain similar results using higher order polynomials for our RD models in Appendix J. That appendix also documents a simple difference in averages within the optimally-selected bandwidth (i.e., a 0-order polynomial) between cities that elected a Democrat versus those that did not; again, results are similar (if somewhat smaller in magnitude), further bolstering that our main result is not simply an artifact of functional form. In Appendix K, we show that we obtain similar results using local randomization inference in a narrow 2% bandwidth on either side of the discontinuity with 10,000 simulations using the rdlocrand package in R (Cattaneo, Titiunik, and Vazquez-Bare, 2016).

Finally, in Appendix P, we present results using a different approach altogether. Namely, we estimate non-parametric difference-in-differences models using the PanelMatch method (Imai, Kim, and Wang, 2021), which compares units with similar treatment histories (i.e.
party control) and similar pre-treatment outcomes (i.e. housing permits) that are “treated” with a Democrat taking control of the mayoral office vs. those that are not treated (i.e. a Republican takes control). 23 We prefer the regression discontinuity approach presented in the main text, as it better deals with the endogeneity in the likelihood of electing a Democrat. Despite that, we do ultimately find similar, albeit less precisely estimated, results in the difference-in-differences approach.

Regulatory Institutions and Veto Power

We next assess the role of regulatory regimes — that is, the limits on development imposed by allowing city councilors and commissioners to prevent new residential development even when it is allowed under existing zoning laws. 24 This type of rule contributes to the stringent regulatory regimes that increase the price of housing in cities (Gyourko and Krimmel, 2021). Of the 374 large cities in our elections data, 39% have this rule that requires a majority or supermajority of councilors to approve “by-right” land use changes, essentially limiting new development. We note that this institutional regime is primarily a constraint, and not a positive power: it denotes the ability of city councilors to veto new residential development. We therefore would expect weaker partisan differences on housing outcomes in municipalities with this type of regulation.

In Figure 11 we plot the effects of city councilors’ and mayors’ partisanship on the types of housing permitted under each type of this regulatory regime. These results indicate that when local councilors have veto power over land use changes, this limits the degree to which partisanship influences the housing permits that are issued. Electing a Democrat to the office of city councilor or mayor has no effect on housing in cities that give this type of political power to councils. While the partisanship of city councilors still does not cause increases or decreases in the housing permitted when they do not have this veto power, the partisanship

23 Specifically, we match using Mahalanobis distance on lagged outcomes in the four years prior to treatment. 24 These regulatory institutions may work in tandem with the effects of existing zoning regulations on housing supply (Schuetz, 2009).
of the mayor does have an effect in places without this regulatory institution. Electing a Democrat rather than a Republican as mayor only increases multifamily housing permitted when city councils do not have the ability to veto new development.\footnote{We see similar differences by regulatory regime in the effect of partisanship on the multifamily proportion of units permitted, which we show in Figure A36 in Appendix N.} This result highlights the role of regulatory institutions beyond zoning to influence the growth of housing supply.

Figure 11: The effect of partisanship on changes in type of housing permitted in the fiscal years two and three years after an election, divided by the regulatory power afforded to city councils. Thick bars show 90\% robust confidence intervals and thin bars show 95\% robust confidence intervals.

### Conclusion

Large cities in the United States face a housing affordability crisis. Municipal governments are a crucial thread in the fabric of American democracy and may have played some role in the development of this crisis. Assessing the degree to which representation functions in these governments is critical for a broader understanding of democratic functioning in the United States as well as the contemporary housing policy crisis. While there is a growing
body of evidence that the partisan composition of local governments can affect a range of fiscal policy outputs (de Benedictis-Kessner and Warshaw, 2016, 2020; Gerber and Hopkins, 2011), recent work has pointed to limits to the influence of partisanship in local politics (Anzia, 2021). Some policy arenas may simply not generate disagreement among members of the public or among local politicians (e.g. Thompson, 2020). However, there is no previous study that examines this type of representation in city councils, and none that examines how partisan representation functions in many contentious policy debates that occupy municipal politics. In this paper, we provide a comprehensive assessment of the degree of partisanship’s effects on the development of housing.

We show a variety of evidence that partisanship influences housing policy. Using original public opinion data, we show that there are sharp partisan divides in policy views on housing. Democrats are far more supportive of progressive housing policy and the construction of multi-family housing. Moreover, we demonstrate that partisan representation in city governments influences housing policy. We find that there is a strong association between the partisan composition of city councils and the permitting of multi-family housing. Yet we find no causal evidence that the election of Democrats to city councils leads cities to change housing policy. This is despite the fact that housing development is a contentious local policy issue that is often debated in council meetings and over which city councilors are often thought to have control (Einstein, Glick, and Palmer, 2019; Hankinson, 2018; Hankinson and Magazinnik, 2020).

In contrast, mayors have large effects on housing policy. When a Democrat is barely elected as mayor rather than a Republican, cities permit more multi-family housing. The partisanship of local politicians can shape subsequent housing outcomes — indicating that partisan divisions among the public in housing policy opinions can translate into differences in local housing policy outcomes due to mayoral elections. We also show preliminary evidence of one important, downstream consequence of these increases in multifamily housing in our analyses of housing prices. Our results suggest that electing a Democrat as mayor may lower
housing prices. Together, these results indicate that housing policy is not immune from the effects of political partisanship in cities.

We also examine whether the size of these effects varies by the institutional constraints under which local politicians operate. In particular, we find that both the council-manager municipal form of government and nonpartisan ballots, which were instituted as part of the reform movement to insulate city politics from the mores of partisan national politics, do not prevent city politicians’ partisanship from influencing policy. The differences between the effects we observe under these institutional arrangements indicate little descriptive or causal moderation by local institutional configurations. On the other hand, the city-level zoning rules that give city councilors veto power over land use changes do moderate the effects of mayoral partisanship on housing. When these powers are strong – and allocate more power to city councilors – mayors have less influence over housing policy.

Overall, we demonstrate that city councilors’ role in a local policy landscape, which includes prominent elected or unelected executives and state government constraints, hampers their ability to reliably shift housing policy in the direction consistent with their partisan leanings. Thus while the partisan composition of local legislatures may correspond with the direction of housing policy, it is likely not caused by the partisanship of these legislators. Instead, local housing policy is more likely shifted by the influence of the mayor’s partisan leanings or other pre-existing city characteristics. In contrast to legislators in county, state, and federal governments, city councilors appear to wield little independent power to causally change policy. Mayors, on the other hand, maintain an ability to shift local policy in their ideological direction – and in the case of housing policy, they are able to do so by a substantively large amount. Yet city legislators maintain some ability to blunt mayoral attempts to shift housing production due to formal institutional powers. Thus any understanding of policymaking in cities must take seriously the distribution of power not just between city and state governments (Palmer et al., 2019), but also within city governments.

These findings extend theories of representation and responsiveness at other levels of
government and as applied to other city politicians to the most common municipal elected office of the city councilor. Moreover, our results extend theories of partisanship to housing policy, arguably the most contentious local policy issue of the current era. Council elections at the local level are not a powerful mechanism by which governments produce housing policy that represents the wishes of the electorate. Yet mayoral partisanship remains a crucial lever for housing policy representation at the local level.
References


Gyourko, Joseph, Albert Saiz, and Anita Summers. 2008. “A New Measure of the Local


Supplementary Appendix for
“How Partisanship in Cities Influences Housing Policy”

Contents

A Survey Demographics A-1
B Housing Policy Survey Questions A-2
C McCrary Tests on the Density of Observations A-3
D Placebo Tests of Lagged Running Variable and Dependent Variables A-5
E Additional Associations Between City Partisanship, Ideology, Elite Partisanship, and Housing Outcomes A-7
F Housing Policy RDD Results in Tabular Format A-11
G Long-run Effects of Partisanship A-12
H Results with Alternative Bandwidths A-14
I Analyses Using Alternative Transformations of Outcome Variables A-16
J Results with Alternative Polynomials A-19
K Results Using Randomization Inference A-21
L Analyses Using Non-Weighted Outcomes for City Councilors A-22
M Effects of Partisanship on Leads of Housing Outcomes A-24
N Moderators A-25
O Effects of Partisanship on Alternative Housing Outcomes A-32
P Difference-in-Differences Effect of Partisanship on Housing Permits A-34
A Survey Demographics

We fielded our online survey in November-December, 2020, via the platform PureSpectrum. PureSpectrum recruits respondents from a variety of web panel sample companies which all compensate survey respondents for participation in surveys. In order to collect a broad demographically-representative survey sample, we set quota targets based on demographics from the 2014-2018 ACS on age, education, race/ethnicity, and gender.

Below, we show summary statistics of our national survey sample across several key demographics characteristics and political partisanship. In Figure A1 we compare these to estimates from the 2014-2018 ACS (for demographics) and 2016 ANES (for partisanship). Overall, these comparisons suggest that our survey sample is a diverse national sample that is close, though not exactly matched, to our target population.

Figure A1: Summary statistics of key survey demographic characteristics and partisanship, compared to nationwide estimates from the 2014-2018 ACS (for demographics) and the 2016 ANES (for partisanship).

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.53</td>
<td>0.50</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1,111</td>
</tr>
<tr>
<td>White</td>
<td>0.66</td>
<td>0.48</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1,111</td>
</tr>
<tr>
<td>Black</td>
<td>0.12</td>
<td>0.33</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1,111</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.13</td>
<td>0.34</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1,111</td>
</tr>
<tr>
<td>Age</td>
<td>43.02</td>
<td>16.13</td>
<td>40</td>
<td>18</td>
<td>93</td>
<td>1,111</td>
</tr>
<tr>
<td>College educated</td>
<td>0.30</td>
<td>0.46</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1,111</td>
</tr>
<tr>
<td>Income &gt;$50k</td>
<td>0.47</td>
<td>0.50</td>
<td>0.00</td>
<td>0.00</td>
<td>1.00</td>
<td>967</td>
</tr>
<tr>
<td>Democrat</td>
<td>0.51</td>
<td>0.50</td>
<td>1.00</td>
<td>0.00</td>
<td>1.00</td>
<td>934</td>
</tr>
<tr>
<td>Republican</td>
<td>0.38</td>
<td>0.49</td>
<td>0.00</td>
<td>0.00</td>
<td>1.00</td>
<td>934</td>
</tr>
</tbody>
</table>
B  Housing Policy Survey Questions

1. Do you favor or oppose the following possible actions by your local government: [Response options: Strongly favor; Favor; Oppose; Strongly oppose; Don’t know]
   (a) ... Limiting how much landlords can raise their tenants’ rent each year
   (b) ... Offering subsidized housing to the homeless

2. Which of the following statements about multifamily housing, such as apartment buildings, comes closer to your view, even if neither is exactly right?
   • Multifamily housing should be allowed everywhere in my city to revitalize neighborhoods and local economies
   • Multifamily housing should be allowed only in dense areas of my city to preserve the character of less populated neighborhoods
C McCrory Tests on the Density of Observations

In this appendix we present the results of the McCrory test for the continuity of the density of observations across the 50% vote threshold. These tests replicate the RDD framework but using the density of observations as the outcome. If the density of observations were to have a “jump” in numbers across the threshold, it would suggest a potential violation of the assumption that potential outcomes are continuous at the threshold.

In Table A2 below we present the results of these tests using the number of observations within half-percentage-point bins of voteshare. The coefficient in the second line, indicating the change in the number of observations at the threshold, represents the RDD effect on this outcome. We find a null effect for both city council elections and mayoral elections, suggesting that the continuity assumption is likely to hold in both council and mayoral races.

Table A2: McCrory Tests

(a) City Council Elections  (b) Mayoral Elections

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th></th>
<th>Dependent variable:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of observations in bin</td>
<td></td>
<td>Number of observations in bin</td>
<td></td>
</tr>
<tr>
<td>Voteshare bin</td>
<td>182.456***</td>
<td>Voteshare bin</td>
<td>54.286***</td>
</tr>
<tr>
<td></td>
<td>(46.649)</td>
<td></td>
<td>(17.628)</td>
</tr>
<tr>
<td>Voteshare ≥ 0.5</td>
<td>7.149*</td>
<td>Voteshare ≥ 0.5</td>
<td>2.479</td>
</tr>
<tr>
<td></td>
<td>(3.617)</td>
<td></td>
<td>(1.511)</td>
</tr>
<tr>
<td>Voteshare bin × Voteshare ≥ 0.5</td>
<td>−361.404***</td>
<td>Voteshare bin × Voteshare ≥ 0.5</td>
<td>−135.844***</td>
</tr>
<tr>
<td></td>
<td>(65.972)</td>
<td></td>
<td>(24.930)</td>
</tr>
<tr>
<td>Constant</td>
<td>32.509***</td>
<td>Constant</td>
<td>12.421***</td>
</tr>
<tr>
<td></td>
<td>(2.558)</td>
<td></td>
<td>(1.068)</td>
</tr>
<tr>
<td>Observations</td>
<td>38</td>
<td>Observations</td>
<td>42</td>
</tr>
<tr>
<td>R²</td>
<td>0.577</td>
<td>R²</td>
<td>0.463</td>
</tr>
</tbody>
</table>

Note: *p<0.1; **p<0.05; ***p<0.01

We also present these results visually in Figure A2, which shows the binned number of observations both below and above the 50% vote threshold. Visual inspection supports the more formal results shown in Table A2: that there is no discernable effect on the density of observations at the threshold for council elections but a noticeable increase in the density of observations above the threshold for mayoral elections.

However, these tests are subject to a variety of researcher degrees of freedom – in particular, the choice of the size of bin within which to group observations. An alternative check suggested by Cattaneo, Jansson, and Ma (2019) involves conducting a nonparametric test for a discontinuity in the density of the running variable that does not require binning. We present the results from these nonparametric tests, estimated using the R package rddensity, in Table A3 below. Similar to the tests discussed earlier, they indicate no evidence of sorting across the threshold for council elections. However, this nonparametric test does indicate that the difference in the density of observations for mayoral races is statistically distinguishable from zero at the 95% significance threshold, suggesting some evidence of sorting in mayoral elections.
Finally, others have recently suggested constructing an equivalence test (Hartman and Hidalgo, 2018) based on the density of the forcing variable and calculating inverted $p$-values based on the null hypothesis of a difference in the density to the left and the right of the cutpoint (Hartman, 2021). We present results using this method in Table A4 below, which show the observed ratio between the density to the left and right of the threshold as well as the equivalence confidence interval and the $p$-value for the null hypothesis of a jump of greater than 50% in the density across the threshold. This test indicates that the null hypothesis of a substantively important difference in densities can be rejected for council elections at the 90% confidence level but cannot be rejected for mayoral elections. In both cases, the equivalence confidence interval suggests that the range of differences in density is fairly small in size as well.

Table A4: Density Equivalence Tests

<table>
<thead>
<tr>
<th>(a) City Council Elections</th>
<th>(b) Mayoral Elections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observed Ratio</td>
<td>Equivalence Confidence Interval</td>
</tr>
<tr>
<td>0.85</td>
<td>(0.63, 1.58)</td>
</tr>
<tr>
<td>Observed Ratio</td>
<td>Equivalence Confidence Interval</td>
</tr>
<tr>
<td>0.58</td>
<td>(0.32, 3.16)</td>
</tr>
</tbody>
</table>
D Placebo Tests of Lagged Running Variable and Dependent Variables

Figure A3: Placebo effect of partisanship on lagged democratic voteshare. Bars show 95% robust confidence intervals.

Figure A4: Placebo effect of partisanship on pre-treatment number of multi-family units permitted. Bars show 95% robust confidence intervals.
Figure A5: Placebo effect of partisanship on pre-treatment ratio of multi-family buildings. Bars show 95% robust confidence intervals.

Figure A6: Placebo effect of partisanship on pre-treatment ratio of multi-family units. Bars show 95% robust confidence intervals.
E Additional Associations Between City Partisanship, Ideology, Elite Partisanship, and Housing Outcomes

Figure A7 shows the cross sectional association between the ideological preferences of the mass public and the partisan composition of the city council (Tausanovitch and Warshaw, 2014). It shows that more conservative cities tend to have more Republican city councils, and more liberal cities tend to have more Democratic councils.

Figure A7: Association between Mass Public’s Ideology and Partisan Composition of City Council

Figure A8: Association between city ideology and multi-family housing permitted. Points show logged total multi-family buildings (top panel) and units (bottom panel) along the vertical axis, and the 2008 Democratic presidential voteshare along the horizontal axis.
Figure A9: Association between city ideology and multi-family housing permitted. Points show logged total multi-family buildings (top panel) and units (bottom panel) along the vertical axis, and the average city ideology along the horizontal axis.
Figure A10: Association between city ideology and composition of housing permitted. Points show the multi-family proportion of buildings (top panel) and units (bottom panel) permitted along the vertical axis, and the average city ideology along the horizontal axis.
Figure A11: Association between partisan composition of city councils and multi-family housing permitted. Points show logged total multi-family buildings (left panel) and units (right panel) within each 2% bin of the Democratic share of city council seats.
## F Housing Policy RDD Results in Tabular Format

### Table A5: Effect of Councilor Partisanship on Δ CBPS Outcomes

<table>
<thead>
<tr>
<th>DV</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total buildings, T+2/3 Avg</td>
<td>0.09</td>
<td>0.42</td>
<td>13.54</td>
<td>1336</td>
</tr>
<tr>
<td>Single-family buildings, T+2/3 Avg</td>
<td>0.1</td>
<td>0.43</td>
<td>11.8</td>
<td>1212</td>
</tr>
<tr>
<td>Multi-family buildings, T+2/3 Avg</td>
<td>-0.06</td>
<td>0.82</td>
<td>13.98</td>
<td>1361</td>
</tr>
<tr>
<td>Total units, T+2/3 Avg</td>
<td>0.08</td>
<td>0.56</td>
<td>11.86</td>
<td>1214</td>
</tr>
<tr>
<td>Single-family units, T+2/3 Avg</td>
<td>0.1</td>
<td>0.43</td>
<td>11.8</td>
<td>1212</td>
</tr>
<tr>
<td>Multi-family units, T+2/3 Avg</td>
<td>0.09</td>
<td>0.69</td>
<td>9.69</td>
<td>1056</td>
</tr>
</tbody>
</table>

### Table A6: Effect of Councilor Partisanship on Δ CBPS Composition

<table>
<thead>
<tr>
<th>DV</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-family proportion of buildings, T+2/3 Avg</td>
<td>-0.01</td>
<td>0.64</td>
<td>12.69</td>
<td>1268</td>
</tr>
<tr>
<td>Multi-family proportion of units, T+2/3 Avg</td>
<td>0</td>
<td>0.91</td>
<td>9.66</td>
<td>1053</td>
</tr>
</tbody>
</table>

### Table A7: Effect of Mayoral Partisanship on Δ CBPS Outcomes

<table>
<thead>
<tr>
<th>DV</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total buildings, T+2/3 Avg</td>
<td>-0.05</td>
<td>0.57</td>
<td>10.52</td>
<td>429</td>
</tr>
<tr>
<td>Single-family buildings, T+2/3 Avg</td>
<td>-0.08</td>
<td>0.45</td>
<td>9.58</td>
<td>396</td>
</tr>
<tr>
<td>Multi-family buildings, T+2/3 Avg</td>
<td>0.33</td>
<td>0.09</td>
<td>11.58</td>
<td>451</td>
</tr>
<tr>
<td>Total units, T+2/3 Avg</td>
<td>0.12</td>
<td>0.48</td>
<td>10.83</td>
<td>439</td>
</tr>
<tr>
<td>Single-family units, T+2/3 Avg</td>
<td>-0.08</td>
<td>0.45</td>
<td>9.58</td>
<td>396</td>
</tr>
<tr>
<td>Multi-family units, T+2/3 Avg</td>
<td>0.85</td>
<td>0.01</td>
<td>8.5</td>
<td>361</td>
</tr>
</tbody>
</table>

### Table A8: Effect of Mayoral Partisanship on Δ CBPS Composition

<table>
<thead>
<tr>
<th>DV</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multifamily proportion of buildings, T+2/3 Avg</td>
<td>0.03</td>
<td>0.15</td>
<td>10.74</td>
<td>429</td>
</tr>
<tr>
<td>Multifamily proportion of units, T+2/3 Avg</td>
<td>0.13</td>
<td>0.02</td>
<td>7.74</td>
<td>330</td>
</tr>
</tbody>
</table>
G  Long-run Effects of Partisanship

Figure A12: Long-term effect of partisanship on change in the logged number of multi-family units permitted. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

Figure A13: Long-term effect of partisanship on change in the multi-family proportion of units permitted. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.
Figure A14: Effect of partisanship on change in the logged number of multi-family units permitted averaged over different time horizons. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

Figure A15: Effect of partisanship on change in the multi-family proportion of units permitted averaged over different time horizons. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.
H Results with Alternative Bandwidths

Figure A16: Effect of partisanship on number of permitted multi-family buildings using alternative bandwidths. Bars show 95% robust confidence intervals, which are colored blue if they overlap with zero and red if they do not.

Figure A17: Effect of partisanship on number of permitted multi-family units using alternative bandwidths. Bars show 95% robust confidence intervals, which are colored blue if they overlap with zero and red if they do not.
Figure A18: Effect of partisanship on proportion of buildings permitted that are multi-family using alternative bandwidths. Bars show 95% robust confidence intervals, which are colored blue if they overlap with zero and red if they do not.

Figure A19: Effect of partisanship on proportion of units permitted that are multi-family using alternative bandwidths. Bars show 95% robust confidence intervals, which are colored blue if they overlap with zero and red if they do not.
I Analyses Using Alternative Transformations of Outcome Variables

A number of our main analyses use the outcome of the natural log of the number of housing units/buildings permitted plus one in order to reduce the influence of large outliers in our outcome variable on our results. The tradeoff of this choice, of course, is that our results using logged outcomes give more influence to data points with smaller values. Though this does not affect our results using proportions (e.g. the multifamily proposal of housing units or buildings), in this section we replicate our main results using two alternative transformations of the outcome variables to test the robustness of our results to the choice of outcome transformation: a non-logged per 100,000 capita measure, and the natural log of the number of housing units/buildings plus 0.1 (rather than +1). The results from these alternative transformations largely corroborate the results presented in the main paper.

In Figure A20 we present the results removing the 5 cities with the largest absolute values of the change in per 100,000 capita multifamily units.26 These results are also shown in tabular format in Tables A9 and A10. In Figure A21 we also provide the results using the full dataset of non-logged outcome variables. Finally, in Figure A22 we present results of analyses using outcomes measured as the natural log of the outcome + 0.1 rather than the natural log of the outcome + 1, as used in the main manuscript.

![Graphs](image)

(a) City Council Elections  
(b) Mayoral Elections

Figure A20: The effect of partisanship on changes in type of housing permitted in the fiscal years two and three years after an election. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

---

26These cities are Irvine, CA, Nashville, TN, Orlando, FL, Henderson, NV, and Raleigh, NC.
Table A9: RD effect of councilor partisanship on $\Delta$ CBPS per 100,000 capita outcomes

<table>
<thead>
<tr>
<th>DV</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total buildings</td>
<td>-43.724</td>
<td>0.106</td>
<td>6.17</td>
<td>737</td>
</tr>
<tr>
<td></td>
<td>(-120.164, 11.597)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family buildings</td>
<td>1.28</td>
<td>0.655</td>
<td>10.32</td>
<td>1075</td>
</tr>
<tr>
<td></td>
<td>(-4.6, 7.319)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total units</td>
<td>-20.337</td>
<td>0.48</td>
<td>8.58</td>
<td>954</td>
</tr>
<tr>
<td></td>
<td>(-139.005, 65.321)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family units</td>
<td>13.725</td>
<td>0.731</td>
<td>11.02</td>
<td>1120</td>
</tr>
<tr>
<td></td>
<td>(-55.366, 78.883)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table A10: RD effect of mayoral partisanship on $\Delta$ CBPS per 100,000 capita outcomes

<table>
<thead>
<tr>
<th>DV</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total buildings</td>
<td>82.824</td>
<td>0.491</td>
<td>14.85</td>
<td>509</td>
</tr>
<tr>
<td></td>
<td>(-167.569, 349.251)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family buildings</td>
<td>0.647</td>
<td>0.938</td>
<td>15.68</td>
<td>526</td>
</tr>
<tr>
<td></td>
<td>(-10.551, 11.421)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total units</td>
<td>94.555</td>
<td>0.435</td>
<td>14.78</td>
<td>508</td>
</tr>
<tr>
<td></td>
<td>(-163.711, 380.638)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family units</td>
<td>39.567</td>
<td>0.272</td>
<td>9.68</td>
<td>385</td>
</tr>
<tr>
<td></td>
<td>(-42.178, 149.948)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure A21: The effect of partisanship on changes in type of housing permitted in the fiscal years two and three years after an election, including outliers. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.
Figure A22: The effect of partisanship on changes in type of housing permitted in the fiscal years two and three years after an election. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.
J Results with Alternative Polynomials

Figure A23: Effect of partisanship on the change in logged multi-family units between the election year and the average of the years two and three years after the election using alternative polynomials. Bars show 95% robust confidence intervals.

Figure A24: Effect of partisanship on the change in the multi-family proportion of buildings between the election year and the average of the years two and three years after the election using alternative polynomials. Bars show 95% robust confidence intervals.
(a) City Council Elections
(b) Mayoral Elections

Figure A25: Effect of partisanship on the change in the multi-family proportion of units between the election year and the average of the years two and three years after the election using alternative polynomials. Bars show 95% robust confidence intervals.
**K Results Using Randomization Inference**

**Table A11: RI Effect of Councilor Partisanship on \( \Delta \) CBPS Outcomes**

<table>
<thead>
<tr>
<th>DV</th>
<th>Diff. in means</th>
<th>Asymptotic p-value</th>
<th>Obs.</th>
<th>BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-family units, T+2/3 Avg</td>
<td>0.15</td>
<td>0.49</td>
<td>273</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(-0.19, 0.53)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family units, T+2-4 Avg</td>
<td>0.17</td>
<td>0.41</td>
<td>273</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(-0.23, 0.57)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family units, Avg. of 2-4 years post-election - 4-yr avg pre-election</td>
<td>0.24</td>
<td>0.15</td>
<td>273</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(-0.09, 0.54)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family units, Avg. of 1-4 years post-election - 4-yr avg pre-election</td>
<td>0.28</td>
<td>0.07</td>
<td>273</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(0.04, 0.58)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table A12: RI Effect of Mayoral Partisanship on \( \Delta \) CBPS Outcomes**

<table>
<thead>
<tr>
<th>DV</th>
<th>Diff. in means</th>
<th>Asymptotic p-value</th>
<th>Obs.</th>
<th>BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-family units, T+2/3 Avg</td>
<td>0.7</td>
<td>0.01</td>
<td>113</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(0.19, 1.19)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family units, T+2-4 Avg</td>
<td>0.45</td>
<td>0.11</td>
<td>113</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(-0.08, 0.91)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family units, Avg. of 2-4 years post-election - 4-yr avg pre-election</td>
<td>0.25</td>
<td>0.27</td>
<td>113</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(-0.2, 0.61)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-family units, Avg. of 1-4 years post-election - 4-yr avg pre-election</td>
<td>0.12</td>
<td>0.57</td>
<td>113</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(-0.22, 0.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Analyses Using Non-Weighted Outcomes for City Councilors

Our main analyses of the effects of city councilors’ partisanship use a weighted version of the regression specification that allows us to identify the effects in an *average city* by down-weighting observations in cities with larger numbers of council seats that would otherwise represent a disproportionate number of our observations given their greater numbers of elections. Our main regression discontinuity design for city councils uses a model where each observation is weighted based on the ratio of the average council size to that city’s council size. However, in this section we also display the results of analyses reflecting the following unweighted regression discontinuity design. The results are qualitatively similar to those in the main text.

Figure A26: The effect of city councilors’ partisanship on changes in type of housing permitted in the fiscal years two and three years after an election without weighting by council size. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.
Figure A27: The effect of city councilors’ partisanship on changes in multi-family proportion of housing permitted in the fiscal years two and three years after an election, with 90% (thick lines) and 95% (thin lines) confidence intervals.
M Effects of Partisanship on Leads of Housing Outcomes

Figure A28: Long-term effect of partisanship on the logged number of multi-family units permitted. Bars show 95% robust confidence intervals.

Figure A29: Effects of partisanship on leads of the multi-family proportion of buildings and units permitted, with 90% (thick lines) and 95% (thin lines) confidence intervals.
N Moderators

Here, we examine three potential institutional moderators of the effects of city councilors’ partisanship on policy: the presence of a strong mayor system (rather than a city manager), the use of at-large versus district elections to elect city councilors, and the use of partisan versus nonpartisan ballots in local elections. Though we note that we cannot identify the causal effect of any of these institutional configurations on the effects we observe, the cross-sectional differences (and lack of differences that we observe) still help us to rule out potential institutional dependencies.

In order to assess the impact of different institutions at the city level, we use records of the form of government of cities in our data, their councilor election methods, and whether they use partisan ballots for their elections. These data are from the International City/County Management Association’s (ICMA) Form of Government surveys.27 These data contain information about whether a city has a strong mayor system or a council-manager form of government, the whether city councilors are elected at-large or by wards/districts, or some combination of the two, and whether local politicians are elected in officially partisan or nonpartisan races. We use this source of data to assess the differential impact of electing a Democrat or a Republican on policy in cities with different institutions.

We also include additional analyses of the differences in the effect of partisanship by regulatory regime beyond those discussed in the main manuscript, and analyses of the effect of city councilors’ partisanship on housing policy divided up by the size of the city council (i.e. how many members serve on the council). As we discuss in the main manuscript, cities that do not afford councilors veto power over land use changes have larger effects of mayoral partisanship on housing policy. Our subset analyses by the size of the city council suggest that city councilors have little influence on housing policy, even in small councils.

Form of Government

We display the effects of electing a Democrat on types of housing permitted in Figure A30 and on the composition of housing permitted in Figure A31, divided up by form of government. For both councilors and mayors, the effects of partisanship on housing outcomes appear to be relatively similar in cities with strong mayor and council-manager systems. This suggests that the influence of mayors on housing policy is not confined to cities where they operate as a “strong mayor,” and that the lack of influence by city councilors is not only due to their operation in the shadow of “strong” mayors.

Figure A30: The effect of partisanship on changes in housing permitting in the fiscal years two and three years after an election, by form of government. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

Figure A31: The effect of partisanship on changes in the composition of housing permitting in the fiscal years two and three years after an election, by form of government. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

**District and At-Large Elections**

We display the effects of electing a Democrat on the type of housing permitted in Figure A32 and on the proportion of housing permitted that is multi-family in Figure A33, divided up by the method by which city councilors in the city are elected. As Hankinson and Magazinnik (2020) argue, district elections (rather than at-large elections) may incentivize city councilors to try and block new housing development in their district, leading to overall decreases in the supply of housing. The effects of partisanship on housing outcomes appear to vary only slightly between cities with different types of councilor elections. City councilors appear to have little influence on housing policy regardless of the method by which the city elects
its councilors. Mayors are able to influence the number of multi-family housing units to a larger degree in cities with at-large city council elections, lending suggestive evidence to support the theory that districted council elections may help stymie housing development and the influence of mayors. However, the difference in the sizes of effects is not significant by election method, nor are the results for the multi-family proportion of units in line with these. In addition, very few cities change their method of electing city councilors over the course of our dataset, so we cannot make conclusions about whether this institution has any 
\textit{causal} effect on the influence of partisanship.

Figure A32: The effect of partisanship on changes in housing permitting in the fiscal years two and three years after an election, by type of councilor elections. Thick bars show 90\% robust confidence intervals and thin bars show 95\% robust confidence intervals.
Partisan Ballots

We display the effects of electing a Democrat on the type of housing permitted in Figure A34 and on the proportion of housing permitted that is multi-family in Figure A35, divided up by the type of ballot used in that city. The effects of partisanship on housing outcomes do not appear to only occur in cities with officially partisan election ballots — and in fact, the effects appear larger in places with nonpartisan ballots. Of course, the majority of cities (60% of elections in our data) hold nonpartisan elections, and very few cities change their ballot form over the course of our dataset, so we cannot make conclusions about whether this institution has any causal effect on the influence of partisanship. At the same time, these results indicate that officially partisan ballots are not necessary for the partisanship of city leaders to have an effect on policy outcomes.
Figure A34: The effect of partisanship on changes in housing permitting in the fiscal years two and three years after an election, by type of election ballot. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

Figure A35: The effect of partisanship on changes in housing permitting in the fiscal years two and three years after an election, by type of election ballot. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

**Regulatory Regime**

As we show in the main body of the paper, the regulatory regime of cities – specifically, the veto powers afforded to city councils over land use development – moderates the effect of partisanship on permits for multifamily housing. In Figure A36 we show the effects of partisanship on the composition of housing by whether or not cities give councils this veto power.
Figure A36: The effect of partisanship on changes in the composition of housing permitted in the fiscal years two and three years after an election, divided by the regulatory power afforded to city councils. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

Council Size

In this section, we present subset analyses of the effect of city councilors’ partisanship on housing by the size of the city council in that city. We divided cities up by whether they had 8 or fewer councilors, 9-11 councilors, or greater than 11 councilors. These results show some suggestive evidence that electing a Democratic councilor may influence the number of multi-family housing units when those councilors are elected to smaller councils, but these differences by council size are not definitive.
Figure A37: The effect of city councilors’ partisanship on changes in type of housing permitted in the fiscal years two and three years after an election, by the size of the city council. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

Figure A38: The effect of city councilors’ partisanship on changes in multi-family proportion of housing permitted in the fiscal years two and three years after an election, with 90% (thick lines) and 95% (thin lines) robust confidence intervals.
Effects of Partisanship on Alternative Housing Outcomes

In this section, we assess the effects of politicians’ partisanship on several alternative housing policy-related outcomes: the eviction filing rate, the eviction rate, and spending by local governments of HUD funds (used for affordable housing). Our results indicate no consistent effects of city councilor partisanship on either of the eviction outcomes. Electing a Democrat has no effect on the eviction rate (Figure A40) or the eviction filing rate (Figure A39). The analyses of HUD spending (Figure A41) suggest that electing a Democrat as mayor may lead to increases in HUD spending, but these results are not statistically significant.

![Figure A39](image1.png)

(a) City Council Elections  (b) Mayoral Elections

Figure A39: Effects of partisanship on the eviction filing rate. Bars show 90% (thick lines) and 95% (thin lines) robust confidence intervals.

![Figure A40](image2.png)

(a) City Council Elections  (b) Mayoral Elections

Figure A40: Effects of partisanship on the eviction rate. Bars show 90% (thick lines) and 95% (thin lines) robust confidence intervals.

A-32
Figure A41: Effects of partisanship on total HUD spending. Bars show 90% (thick lines) and 95% (thin lines) robust confidence intervals.
P Difference-in-Differences Effect of Partisanship on Housing Permits

In the main manuscript, we present RDD results for the effect of city councilor and mayoral partisanship on housing permits. Below, we present results from the PanelMatch method (Imai, Kim, and Wang, 2021), which compares units with similar treatment histories (i.e. party control) that are “treated” with a Democrat taking control of the mayoral office vs. those that are not treated (i.e. a Republican takes control). Figure A42 shows the effect of Democratic control of the mayor’s office on several of our primary outcome measures of multifamily housing permits. These analyses indicate that a Democrat becoming mayor may mildly increase the number of multifamily housing units and total housing units permitted, as well as the proportion of housing units permitted that are multifamily in the first two years after they take power. However, none of these results are statistically distinguishable from zero.
Figure A42: Effects of mayoral partisanship on housing outcomes using PanelMatch. Thick bars show 90% confidence intervals and thin bars show 95% confidence intervals.
Consequences for Affordability

Research on housing across the disciplines of economics and urban planning has consistently identified the effect of building more housing (and more multifamily housing) on the affordability of housing in cities (e.g. Glaeser, Gyourko, and Saks, 2005; Glaeser and Gyourko, 2018). Given that we identify effects of mayoral partisanship on housing production, we also examined this downstream consequence of increased housing permits. To do so, we incorporated data from the Zillow Housing Value Index, a dataset constructed for researchers by Zillow. The index provides a monthly, smoothed, seasonally-adjusted measure of home values (single-family residences and condominiums) at the city level. For our purposes, we collapse the index to the city-by-year level. We then analyzed the effects of city councilors’ and mayors’ partisanship on the overall housing affordability of cities using these data and the same regression discontinuity design as described earlier. Our analyses provide suggestive evidence that electing a Democrat as mayor leads to a decrease in housing prices, as shown in Figure A43. Electing a Democrat rather than a Republican as mayor appears to lead to approximately 10% lower housing values in the 2-3 years following their election. It’s important to note though that these analyses are underpowered. In Figure A44, we provide suggestive evidence that these results are concentrated in the cities that are undergoing higher degrees of housing price growth. This indicates that mayors may have the power to substantially forestall housing price growth in cities where the housing crisis is most extreme while increasing multi-family housing production.28

Figure A43: Effects of partisanship on the value of residential housing, as measured by the Zillow Housing Value Index (ZHVI). The ZHVI represents the average value of homes sold in each city in each year. Bars show 90% (thick lines) and 95% (thin lines) robust confidence intervals.

28In Appendix O we examine one potential cause of decreases in housing prices: the total amount of spending disbursed in the city from HUD. Our results suggest that electing a Democrat as mayor potentially leads to small increases in HUD spending, which combined with the effects of multifamily development may explain the decreases in housing prices. In addition, we also examine another possible outcome of increased development: evictions. Our results indicate little influence of mayoral partisanship on either evictions or eviction filings.
In Table A13 and Table A14 below we present the results of the analyses for this outcomes that are presented graphically in the text of the paper.

Table A13: Effect of Councilor Partisanship on Δ ZHVI

<table>
<thead>
<tr>
<th>DV</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in ZHVI, T+1</td>
<td>-0.01</td>
<td>0.38</td>
<td>11.19</td>
<td>988</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.05, 0.02)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+2 Avg</td>
<td>-0.01</td>
<td>0.52</td>
<td>9.99</td>
<td>924</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.08, 0.04)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+3 Avg</td>
<td>-0.02</td>
<td>0.55</td>
<td>10.87</td>
<td>935</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.1, 0.05)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+2/3 Avg</td>
<td>-0.01</td>
<td>0.54</td>
<td>10.34</td>
<td>939</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.09, 0.05)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+4 Avg</td>
<td>0.01</td>
<td>0.84</td>
<td>12.9</td>
<td>983</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.07, 0.09)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, Avg. of 1-4 years post-election - 4-yr avg pre-election</td>
<td>-0.03</td>
<td>0.32</td>
<td>11.84</td>
<td>1042</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.13, 0.04)</td>
<td></td>
</tr>
</tbody>
</table>

Table A14: Effect of Mayoral Partisanship on Δ ZHVI

<table>
<thead>
<tr>
<th>DV</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in ZHVI, T+1</td>
<td>-0.05</td>
<td>0.01</td>
<td>6.95</td>
<td>206</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.1, -0.01)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+2 Avg</td>
<td>-0.09</td>
<td>0.01</td>
<td>6.68</td>
<td>202</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.19, -0.02)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+3 Avg</td>
<td>-0.11</td>
<td>0.03</td>
<td>6.32</td>
<td>187</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.25, -0.01)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+2/3 Avg</td>
<td>-0.1</td>
<td>0.02</td>
<td>6.43</td>
<td>194</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.21, -0.02)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+4 Avg</td>
<td>-0.1</td>
<td>0.09</td>
<td>6.62</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.28, 0.02)</td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, Avg. of 1-4 years post-election - 4-yr avg pre-election</td>
<td>-0.13</td>
<td>0.01</td>
<td>7.01</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.28, -0.03)</td>
<td></td>
</tr>
</tbody>
</table>

We also analyze the effects of partisanship on housing prices, divided up by the pre-election trends in housing prices. To do so, we calculate the pre-election housing growth by subtracting the logged ZHVI three years before the election from the logged ZHVI one year before the election, and subset our analyses to city-years where this value is above or below the median across our entire dataset (approximately 9% growth). Though these results are based on fewer observations, we find that the effects of partisanship on housing prices are almost exclusively occurring in cities where housing prices are increasing more than the median, as we show in Figure A44 and Tables A15 and A16.

Table A15: Effect of Councilor Partisanship on Δ ZHVI by Pre-Election Growth

<table>
<thead>
<tr>
<th>DV</th>
<th>Pre-Election Growth</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in ZHVI, T+2/3 Avg</td>
<td>High</td>
<td>-0.02</td>
<td>0.8</td>
<td>8.37</td>
<td>327</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, T+2/3 Avg</td>
<td>Low</td>
<td>0.01</td>
<td>0.72</td>
<td>10.39</td>
<td>514</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, Avg. of 1-4 years post-election - 4-yr avg pre-election</td>
<td>High</td>
<td>-0.01</td>
<td>0.92</td>
<td>9.38</td>
<td>351</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in ZHVI, Avg. of 1-4 years post-election - 4-yr avg pre-election</td>
<td>Low</td>
<td>0.01</td>
<td>0.79</td>
<td>10.1</td>
<td>509</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Change in ZHVI, T+2/3 Avg. - 4-yr avg. pre-election

Outcome

Change in ZHVI, Avg. of 1−4 years post-election

RD coefficient + robust CI

Figure A44: The effect of partisanship on changes in ZHVI after an election, by pre-election price growth. Thick bars show 90% robust confidence intervals and thin bars show 95% robust confidence intervals.

Table A16: Effect of Mayoral Partisanship on Δ ZHVI by Pre-Election Growth

<table>
<thead>
<tr>
<th>DV</th>
<th>Pre-Election Growth</th>
<th>Coef</th>
<th>p-value</th>
<th>BW</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in ZHVI, T+2/3 Avg</td>
<td>High</td>
<td>-0.26</td>
<td>0.01</td>
<td>6.09</td>
<td>63</td>
</tr>
<tr>
<td>Change in ZHVI, T+2/3 Avg</td>
<td>Low</td>
<td>-0.02</td>
<td>0.64</td>
<td>11.05</td>
<td>145</td>
</tr>
<tr>
<td>Change in ZHVI, Avg. of 1−4 years post-election</td>
<td>High</td>
<td>-0.27</td>
<td>0.01</td>
<td>6.22</td>
<td>63</td>
</tr>
<tr>
<td>Change in ZHVI, Avg. of 1−4 years post-election</td>
<td>Low</td>
<td>-0.01</td>
<td>0.74</td>
<td>12.51</td>
<td>154</td>
</tr>
</tbody>
</table>

Furthermore, we analyze the robustness of these results on housing prices by varying both the bandwidth and the order of the polynomial used in the RDD. The results of these robustness checks are presented in Figure A45 and Figure A46.
(a) City Council Elections

(b) Mayoral Elections

Figure A45: Effect of partisanship on logged ZHVI using alternative bandwidths. Bars show 95% robust confidence intervals, which are colored blue if they overlap with zero and red if they do not.

(a) City Council Elections

(b) Mayoral Elections

Figure A46: Effect of partisanship on the change in ZHVI between the election year and the average of the years two and three years after the election using alternative polynomials. Bars show 95% robust confidence intervals.

Finally, as another check of these analyses of housing prices we use randomization inference to estimate the effect of partisanship on logged values of the ZHVI. The results of these analyses are presented in Table A17 and Table A18.

Table A17: Effect of City Councilor Partisanship on Δ ZHVI Using Randomization Inference

<table>
<thead>
<tr>
<th>DV</th>
<th>Diff. in means</th>
<th>Asymptotic p-value</th>
<th>Obs.</th>
<th>BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logged ZHVI, T+2/3 Avg</td>
<td>-0.01</td>
<td>0.76</td>
<td>231</td>
<td>2</td>
</tr>
<tr>
<td>(−0.04, 0.03)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logged ZHVI, Avg. of 1-4 years post-election - 4-yr avg. pre-election</td>
<td>0.1</td>
<td>0.02</td>
<td>73</td>
<td>2</td>
</tr>
<tr>
<td>(−0.16, −0.02)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table A18: Effect of Mayoral Partisanship on Δ ZHVI Using Randomization Inference

<table>
<thead>
<tr>
<th>DV</th>
<th>Diff. in means</th>
<th>Asymptotic p-value</th>
<th>Obs.</th>
<th>BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logged ZHVI, T+2/3 Avg</td>
<td>-0.05</td>
<td>0.16</td>
<td>73</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(-0.11, 0.02)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logged ZHVI, Avg. of 1-4 years post-election - 4-yr avg. pre-election</td>
<td>-0.1</td>
<td>0.02</td>
<td>73</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(-0.16, -0.02)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>