Mayoral Partisanship and Municipal Fiscal Policy

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Does it matter for municipal policy which party controls the mayorship in municipal government? The bulk of the existing evidence says no. But there are a variety of theoretical reasons to believe that mayoral partisanship should affect municipal policy. We examine the impact of mayoral partisanship in nearly 1,000 elections in medium and large cities over the past 60 years. In contrast to previous work, we find that mayoral partisanship has a significant impact on the size of municipal government. Democratic mayors spend substantially more than Republican mayors. In order to pay for this spending, Democratic mayors issue substantially more debt than Republican mayors and pay more in interest. Our findings show that mayoral partisanship matters for city policy. Our findings add to a growing literature indicating that the constraints imposed on city policy making do not prevent public opinion and elections from having a meaningful impact on municipal policy.

A number of recent studies have found that municipal policy outcomes are responsive to the opinion and partisanship of the mass public (Einstein and Kogan 2015; Palus 2010; Tausanovitch and Warshaw 2014). More liberal cities spend substantially more than conservatives cities and levy higher taxes on their citizens. A plausible mechanism for the link between public opinion and municipal policy outcomes is that more liberal cities tend to elect more Democratic mayors, who then expand the size of government. However, the bulk of the empirical evidence on the impact of partisanship on municipal governments’ policies suggests that the mayor’s partisanship has no effect on the size of municipal government (Ferreira and Gyourko 2009) or the share of spending that goes to a variety of specific policy areas (Gerber and Hopkins 2011). This work emphasizes the economic, political, and legal constraints facing local policy makers (Gerber and Hopkins 2011; Nivola 2002; Peterson 1981, 1995; Rae 2003; Self 2003). The juxtaposition of these two lines of research raises a puzzle. How does representation in municipal government work if partisan selection in elections is not affecting policy outcomes?

To resolve this puzzle, we build the largest and most comprehensive data set of municipal elections compiled to-date to examine the effect of mayoral partisanship on the size of municipal government in cities with more than 75,000 people. Our data set of mayoral election returns includes over 3,000 electoral contests across 307 cities over the past six decades. It spans a larger time period and a much greater number of medium and large cities than previous studies, which gives us much more statistical power than previous work to identify the precise effect of mayoral partisanship on the size of municipal government. Next, we use a regression-discontinuity design to estimate the causal effect of electing a Democratic mayor versus a Republican mayor on city policies (Ferreira and Gyourko 2009; Gerber and Hopkins 2011). For this analysis, we focus on approximately 1,000 elections in 204 cities where the top two candidates in the election were a Democrat and a Republican.

In contrast to previous research, we find that electing a Democratic mayor over a Republican mayor leads to an increase in per capita municipal expenditures, as well as additional spending in a variety of specific program areas.1 We find that Democratic mayors modestly increase per capita taxes. The bulk of the expansion in the size of government under Democratic mayors, however, appears to be paid for by increasing debt. Indeed, Democratic mayors issue sub-

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Data and supporting materials necessary to reproduce the numerical results in the paper are available in the JOP Dataverse (https://dataverse.harvard.edu/dataverse/jop). An online appendix with supplementary material is available at http://dx.doi.org/10.1086/686308.

1. The comparison of Democratic victories to Republican victories is arbitrary, as all estimates provide the impact of one party’s victory relative to a victory by the other party.
stentially more debt than Republican mayors, and cities with Democratic mayors pay more interest to service this debt. These findings are robust across different time horizons, periods of history, and cities of different sizes.

Overall, we conclude that mayoral elections matter for policy in medium and large cities. At a broader level, our results indicate that partisanship plays a role in local politics in much the same way that it does in the United States at the state and federal levels. The constraints imposed on city policy making do not prevent public opinion and elections from having a meaningful impact on municipal policy. Our findings suggest that one of the mechanisms for the link between public opinion and policy is that more liberal cities tend to elect more Democratic mayors, who then expand the size of government.

The article proceeds as follows. First, we discuss previous literature on representation and elections in municipal government. Next, we discuss our data and research design. Then we present our findings on the impact of mayoral partisanship on the size of municipal government. We also discuss a number of robustness checks, and we examine whether the impact of mayoral partisanship varies across institutional contexts. Finally, we briefly conclude and discuss the implications for future research.

BACKGROUND
There is a large literature at the state and federal levels showing that there are substantial differences between Democratic and Republican elected officials. Democrats in both Congress and state legislatures have much more liberal roll call voting records than Republicans (Lee, Moretti, and Butler 2004; Shor and McCarty 2011). Moreover, the election of a Democratic governor or state legislative majority leads state policy outcomes to shift to the left (Caughey, Warshaw, and Xu 2015). This suggests that mayoral partisanship should have an effect on municipal policy.

However, the literature on local governments suggests that partisanship acts differently at lower levels of government than on the national stage. Some have even gone so far as to say that local-level politics is divorced from the partisan conflict prevalent in national policy making because of the nature of the issues that local politics deals with. As Adrian (1952) puts it, there is “no Republican way to pave a street and no Democratic way to lay a sewer” (766). If this assertion is true, then there would be little reason to expect partisan control of city governments to matter.

In addition, cities are restricted due to statutory constraints (Ladd and Yinger 1989), economic competition with other cities (Peterson 1981), and sorting of citizens into places that provide favorable policies (Tiebout 1956). Furthermore, city governments typically overlap with other jurisdictions in the responsibility for providing services to citizens locally (Ferreira and Gyourko 2009; Peterson 1995). These constraints could mute the impact of mayoral partisanship on policy (Gerber and Hopkins 2011).

To date, the bulk of the research on partisan control of city governments supports the view that the partisanship of city officials does not matter much. Ferreira and Gyourko (2009) investigate the effect of mayoral partisanship on fiscal policies based on data from a survey of all cities in the United States with a population above 25,000 in the year 2000. Using a regression discontinuity design, they look at close elections where Democratic and Republican candidates are nearly tied in their votes to determine the effect of electing a Democratic mayor, under the assumption that these cities are otherwise similar. They find that the partisanship of the mayor elected in these close races has no effect on the size of municipal government. They attribute their null findings to the relative homogeneity of preferences within a given city (Tiebout 1956). However, another potential explanation for their null results is that their data include many small towns and cities (Gerber and Hopkins 2011, 331). In fact, the majority of the cities in their data set had fewer than 75,000 people in 2000. These places are less likely to exhibit any variation in the size of their governments. Moreover, elections in small towns are more likely to center on managerial performance rather than party or ideology (Oliver, Ha, and Callen 2012). In addition, Ferreira and Gyourko’s (2009) data set does not include many large cities (e.g., Boston, Chicago, Pittsburgh) where we might expect to see the largest effects of mayors.

Gerber and Hopkins (2011) build on Ferreira and Gyourko’s findings by examining the impact of barely electing a Democratic mayor on the allocation of city spending and revenues in large cities with a population greater than 170,000 people between 1990 and 2010. If the partisanship of a city’s mayor matters for municipal policy, then the authors expect that the effect of electing a mayor of a given party should change the division of spending between these categories. Using a similar regression discontinuity design, they demonstrate that narrowly electing a Democratic mayor leads to a decrease in the share of expenditures that cities devote to police and fire protection spending. But they find no other effects of partisan control of city governments on the share of expenditures going to different areas or the share of revenues from various sources. However, it is important to note that their analysis is based on a very small sample of cities, which greatly limits their statistical power.

In stark contrast to the literature that focuses on the constraints on urban policy makers, another line of literature
emphasizes the link between the mass public and city policies. Tausanovitch and Warshaw (2014) show that public opinion on city policies is strongly linked to national-level cleavages. Moreover, a variety of studies show that city policies are responsive to the views of their citizens. Percival, Johnson, and Neiman (2009) show an association between county-level ideology and several policy outputs in California counties. Einstein and Kogan (2015) and Hajnal and Trounstine (2010) similarly find a correlation between the partisan preferences of local constituencies and the fiscal policies that city governments produce. More recent advances in the estimation of public opinion at the local level have led to even more evidence of a connection between citizens and government. Tausanovitch and Warshaw (2014) show that city government is responsive to public opinion. The conclusion of these papers is that local governments are responsive to the policy preferences of their citizens. One potential mechanism for this responsiveness is partisan selection in mayoral elections.

**THEORETICAL EXPECTATIONS**

We begin with the assumption that a mayor’s partisanship influences his or her personal fiscal policy preferences and that the mapping between a mayor’s partisanship and policy preferences will be related to the distribution of fiscal preferences across parties that exists at the national level (Gerber and Hopkins 2011). A variety of previous work indicates that political parties are coalitions of officeholders that coordinate across levels of government (Aldrich 1995). Indeed, Democratic legislators have more liberal ideal points than Republicans in both Congress and state legislatures (Lee et al. 2004; Shor and McCarty 2011). Moreover, the election of a Democratic governor or state legislative majority leads state policy outcomes to shift to the left (Caughey et al. 2015). We expect similar tendencies to hold at the municipal level in medium and large cities. The best evidence for the fact that Democratic mayors tend to have more liberal preferences on fiscal issues comes from Einstein and Glick (2014). They conducted a survey of over 70 American mayors—including many from the nation’s largest cities—to directly measure when and why mayors prioritize redistribution. They find that Democratic mayors are much more likely to list socioeconomic inequality as one of their top-two policy issues. The implications of this previous work are clear: in the absence of constraints, Democratic mayors are likely to seek higher levels of municipal spending than Republican mayors.

Of course, mayors are constrained by a multitude of factors. Most importantly, there are a variety of state institutions that constrain municipal tax and revenue policies (Ladd and Yinger 1989, chap. 6; Mullins and Wallin 2004). Indeed, many states have passed limits on municipalities’ ability to levy property taxes (Ladd and Yinger 1989, 136–37). Some states limit property tax revenues relative to property value, while others limit municipalities’ ability to increase property tax rates or property assessments (Mullins and Cox 1995; Mullins and Wallin 2004). Moreover, about a quarter of states ban local municipalities from levying sales taxes on their citizens, and almost every state imposes some limits on sales tax levels (NCSL 1997). This implies that mayors will have limited ability to change municipal tax revenue but will have more leeway to change city expenditures.

Given the many constraints on new taxes, the best way for mayors to fund increases in spending may be to issue more municipal debt. When tax and expenditure limitations were imposed, many cities shifted away from traditional sources of revenue toward bonds to fund capital improvements because the debt service on these bonds was often exempt from these limits. In the 12 states that impose overall property tax limits, for instance, 9 of them exempt debt service from these limits (Mullins and Cox 1995). Despite the fact that many states limit new municipal debt, cities can often find creative ways to bypass debt limits. For instance, they can issue different types of revenue bonds that are not limited, such as nonguaranteed debt, which circumvents state methods of constraining city spending (Aronson and Hilley 1986; Hildreth and Zorn 2005). As a result, mayors who wish to spend money will finance these expenditures by issuing debt. We therefore expect Democratic mayors to issue more debt than Republican mayors.

We also expect that municipal institutions may matter for the ability of mayors to change policy (Hajnal and Trounstine 2010). Progressive reforms, such as the imposition of nonpartisan ballots in municipal elections and the appointment of city executives rather than an elected chief executive, were instituted in many places to insulate local governments from the changing wishes of the population. Many reformers hoped to decrease the power of parties and thought these institutions would decrease the entrenched nature of city government.

One of the the most frequently analyzed and politically debated feature of municipal government is the choice of
cities’ form of government (Lubell et al. 2009). The council-manager system eliminates the political position of an elected mayor as chief executive, and instead, cities hire a professional city manager to run the government and make daily administrative decisions. In cities with the strong mayor form of government, mayors may have more ability to influence policy compared with council-manager cities where the mayorship is often more of a figurehead position (Wolman, Strate, and Melchior 1996). Alternatively, it is possible that the agenda setting powers of mayors in council-manager systems enable them to influence fiscal policy despite their lack of formal executive powers (Svara 1999, 157–58). Indeed, Feiock et al. (2016) demonstrate that the binary classification of cities into council-manager and strong mayor systems masks considerable heterogeneity in mayors’ powers.

Nonpartisan elections, which have been instituted in the majority of US cities, might naturally influence the effect of partisanship on local policies (Gerber and Hopkins 2011). Those candidates who run under a party label in officially partisan elections might be able to change policy without fear of revealing their partisan preferences to voters in a subsequent nonpartisan election. On the other hand, mayors who are elected in nonpartisan elections might restrain their underlying policy preferences in order to avoid alienating voters, and might be more responsive to the wishes of the median voter (Caldarone, Canes-Wrone, and Clark 2009). Furthermore, the imposition of nonpartisan ballots was intended to remove the influence of party on local elected officials. The lack of partisan labels might reduce the tendency of mayors to adopt policies in line with national political cleavages (Welch and Bledsoe 1986; Bledsoe and Welch 1987).

DATA AND RESEARCH DESIGN
Previous research has been limited in its scope, focusing on a small number of cities or a limited range of time. We improve upon this by broadening the set of cities and by using a design-based causal identification strategy to isolate the impact of changing partisan control of city governments on the size of municipal government.

The target universe for our study is cities with more than 75,000 people in the year of a mayoral election. This means that a growing city would enter our target universe when its population reached 75,000 people, while a shrinking city would leave our target universe when its population dipped below this threshold. There were 380 cities with more than 75,000 people in the year 2000. This is a diverse array of cities. It includes cities such as Utica, NY, and Tracy, CA, at the smaller end, as well as large cities like New York, Los Angeles, and Chicago at the upper end of the spectrum. We focus on medium and large cities because these municipalities are likely to have more fiscal flexibility than smaller cities and towns. In addition, this is the minimum size city that appears in the Census’s Historical Data Base of Individual Government Finances every year. Finally, it is much easier to collect municipal election data for medium and large cities than for smaller cities and towns.

Municipal election data
The major hurdle to studying local elections has been a paucity of data (Trounstine 2009). In this article, we build a data set of mayoral election returns that spans a larger time period and a greater number of cities than in any previous research. For each mayoral election in cities in our target universe, we sought information on when the election occurred, the votes received by the top two candidates, and the candidates’ party affiliations. We coded candidates’ partisanship based on any clear indicators that candidates’ leaned toward one of the two parties. These indicators included past or future partisan elected offices that a candidate held, mentions in historical newspaper articles of their partisanship, and campaign-donation-based data. For instance, we would code a candidate as a Democrat if he or she ran for state legislature as a Democrat prior to running for mayor. We would also code a candidate with a “liberal” campaign finance (CF) score as a Democrat. Where cities elect mayors through a run-off system, we included the results of the final election.

We built the foundation of our database of municipal elections by merging the data on elections from 1950 to 2005 from Ferreira and Gyourko (2009); data on elections between

3. Contrast our strategy with Gerber and Hopkins (2011), whose target universe was the 130 largest US cities as identified by the US Census Bureau in 2007, which effectively meant those cities over 170,000 in population, and Ferreira and Gyourko (2009), whose target universe was cities and towns with more than 25,000 people in 2000.

4. Indeed, cities below this size are only in the Census finance data every several years because the Census employs a rotating sample strategy for smaller cities and towns.

5. In our preliminary research, we found that it was nearly impossible to find election results for most cities with fewer than 75,000 people, since these elections are often not covered by the news media. Hopkins and Pettingill (2015) also notes the difficulty of obtaining election results for smaller cities.

6. It is possible that this approach will weight our data toward more partisan candidates. However, this is the same approach that previous studies in this literature have taken (e.g., Ferreira and Gyourko 2009; Gerber and Hopkins 2011).

7. Hill and Huber (2015) show that CF scores are extremely accurate proxies for individuals’ party identification.
1989 and 2010 from Gerber and Hopkins (2011); data that we collected from the website OurCampaigns.com, which includes elections between 1950 and 2014; and campaign finance-based measures of candidates’ party ID (CF-Scores) between 1980 and 2012 (Bonica 2014). In order to reduce errors or discrepancies in these sources, we checked for conflicts between the four sources and identified those elections where any of the four disagree on either vote shares or partisan information. We then conducted a search of online sources and news archives to correct these discrepancies. We therefore have partisan information for officially partisan races or other races where party appeared on the ballot, as well as many officially nonpartisan races.

Of the target universe, we recovered some information for 3,059 mayoral elections taking place in 307 cities. However, many of these elections matched a major party candidate against an Independent or nonpartisan candidate. In other cases, we were not able to recover both candidates’ party identification. The sample that we use for our regression discontinuity design consists of the 981 contests in 204 cities where we could identify the top two-vote getters as a Democrat and a Republican. The Democrat won in 63% of the mayoral elections in this main sample. One important feature of the data is the large number of close mayoral elections. The winning margin is below 20% in over half of our observations (527 out of 981), and in nearly a fifth of the elections, the winning margin is below 5%.

The cities in our main sample contain over 30% of the US population. This data set is, to our knowledge, the most comprehensive available set of information on mayoral elections for medium and large US cities over the past 65 years. Each of the cities that appear in our data is shown visually in figure 1, with the largest city in each state and all cities with populations over 500,000 people in the year 2000 labeled. Our data contain cities from 46 different states.

**Municipal fiscal data**

To study the impact of mayors on city fiscal outcomes, we use fiscal data from the Historical Data Base of Individual Government Finances. These data are based on a Census of Governments conducted every five years and the Annual Survey of Governments collected in every nonsensus year. These data provide detailed revenue, expenditure, and employment data for US local governments. We adjusted all monetary figures into 2012 dollars. We also adjusted for cost-of-living differences between states (Berry, Fording, and Hanson 2000). In our main analysis, we use per capita expenditures and revenues to account for population differences across cities. However, we obtain generally similar, though smaller and noisier, results when we focus on the share of total spending or revenues in particular categories (see the appendix, available online, for more details).

We focus much of our analysis on total per capita expenditures because this measure captures the size of government, one of the core “liberal-conservative” issues in American politics (Ellis and Stimson 2012, 3–4). On average, cities with Democratic mayors spend about $2,167 per capita, while cities with Republican mayors spend about $1,749 per capita. Whether the correlation between mayoral partisanship and the size of municipal government is causal—rather than due to differences in the economy or other

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8. The full details of this process are available in the appendix.
9. In the appendix, we compare our sample of cities with the target universe of cities with more than 75,000 people. Overall, we find no substantively large differences between our sample and the target population.
10. Our quantity of interest—the impact of electing a Democrat over a Republican—is identified only for this subsample.
11. This larger sample of cities is particularly useful for the RD design, which requires observations close in vote margin to the threshold of zero in order to determine a local average treatment effect (LATE). The far larger number of observations within the bandwidth that can be used to compute the treatment effect are what provide a distinct advantage over smaller data sets.
12. For our RDD analysis on the causal impact of mayors, it is crucial to accurately assign fiscal data to the appropriate year. As a result, we dropped a small number observations from the Annual Survey of Government Finances where we could not determine the year in which fiscal data were collected.
13. We obtain substantively similar results if we do not adjust for cost-of-living differences between states.
14. One challenge in focusing on per capita figures is that annual population figures are often unavailable between the decennial censuses. As a result, we conduct a linear interpolation of population figures provided by the Annual Survey of Government Finances for years in which annual population figures were unavailable.
15. Our primary analysis focuses on the impact of mayoral partisanship on per capita spending and revenue rather than on the share of revenue or spending in particular programmatic categories. Focusing on spending amounts rather than shares allows us to capture uniform increases or decreases in spending across all areas due to mayoral partisanship (e.g., when a Democratic mayor increases spending across many programmatic areas). Moreover, changes in the amounts of spending are more readily interpretable than changes in shares of spending across programs. Indeed, an increase in the share of spending in a particular area could be driven by an increase in the absolute level of spending in that area or it could be driven by a decrease in the absolute level of spending in other areas. This makes it difficult to interpret the theoretical processes driving changes in the share of spending or revenue across categories.
16. One of the challenges in research on municipal politics is that there are few comprehensive sources of information on city policies. Ideally, we would use an existing dynamic measure of the “conservatism” of city policies that is analogous to the scaled measure of state policy developed by Caughey and Warshaw (forthcoming). However, there is no existing dynamic measure of policy conservatism available at the city level.
contextual features of municipal government—is the subject of the empirical analyses in the following sections.

We also analyze the impact of mayoral partisanship on individual spending categories, such as roads, housing, libraries, parks, and interest on debt. This enables us to see the areas where mayoral partisanship matters for municipal spending. In addition, we examine the impact of mayoral partisanship on total city revenue, as well as aggregate tax collections, property taxes, sales taxes, and city debt levels.

**Municipal institutions data**

In order to assess the impact of different institutions at the city level, we gather data on the form of government and whether cities have partisan or nonpartisan elections during the elections in our data. These data are from the International City/County Management Association’s (ICMA) Form of Government surveys. These surveys have responses for each city about the timing of elections, as well as the composition of city government. They also record whether a city has a strong mayor system or a council-manager form of government. In addition, the surveys ask whether partisan labels appear on the ballot in municipal elections. We use the form of government and partisan elections responses to assess the differential impact of mayoral partisanship in cities with different institutions.

**Regression discontinuity design**

We use a regression discontinuity design (RDD) to identify the effect of mayoral partisanship on the size of municipal

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17. The ICMA collected these institutional data every five years from 1981 to the present via a survey of city and county government officials.
government. This design uses the fact that a continuous dimension often has cutoff values that place individual units into different qualitative categories. The RDD has been used by researchers to determine the effect of units being in a given category in such varied applications as class size in education, job training programs, and locations close to geographic boundaries. By assuming some degree of randomness in the placement of units around these threshold cutoff values, a researcher can mimic experimental assignment to treatment categories. For the purposes of this article, we exploit the fact that whether a Democrat occupies the office of mayor changes discontinuously at 50% of the two-party vote share (Ferreira and Gyourko 2009; Gerber and Hopkins 2011). Around this discontinuity, the winner is likely to be determined by pure chance as long as there is some unpredictable component of the ultimate vote (Lee 2008). Thus, the winner of these narrow races is quasi-random. By emulating a random experiment, our regression discontinuity design enables us to causally identify the local average treatment effect of electing a Democratic mayor rather than a Republican mayor on the size of municipal expenditures by researchers to determine the effect of units being in a given category in such varied applications as class size in education, job training programs, and locations close to geographic boundaries. By assuming some degree of randomness in the placement of units around these threshold cutoff values, a researcher can mimic experimental assignment to treatment categories. For the purposes of this article, we exploit the fact that whether a Democrat occupies the office of mayor changes discontinuously at 50% of the two-party vote share (Ferreira and Gyourko 2009; Gerber and Hopkins 2011). Around this discontinuity, the winner is likely to be determined by pure chance as long as there is some unpredictable component of the ultimate vote (Lee 2008). Thus, the winner of these narrow races is quasi-random. By emulating a random experiment, our regression discontinuity design enables us to causally identify the local average treatment effect of electing a Democratic mayor rather than a Republican mayor on the size of municipal government expenditures by .04 [0, .1], which is consistent with our main results. We also find no discontinuities in the partisan composition of city government at the time of the mayoral election (table 1, rows 1–4). We also find no discontinuities in contemporaneous spending (row 5) or the difference in lagged spending between time t and t − 2 (row 6). Our placebo tests suggest that the distribution of units’ potential outcomes is continuous at the treatment threshold. Thus, the RD design appears to be well suited for examining the impact of mayoral partisanship on city fiscal outcomes.

Lee and Lemieux (2010, 331–33) suggest differencing the dependent variable in RD designs as a way to increase statistical efficiency. Following this approach, we estimate treatment effects on changes in fiscal outcomes rather than on levels. Specifically, our main analysis focuses on the difference between fiscal outcomes in the year the mayor was elected and two years after the election.

**MAIN RESULTS**

In this section, we present our main results based on a RDD. First, we analyze the effect of electing a Democratic mayor on municipal spending. We find that Democratic mayors in medium and large cities spend $96 more per capita than Republican mayors (fig. 2). The average city in our data spends about $1,819 per capita in total expenditures. So Democratic mayors increase the average city’s spending by 5%. This is equivalent to about one-tenth of the cross-sectional standard deviation in per capita expenditures between cities. We also find that, relative to Republican mayors, Democratic mayors increase general expenditures by $85 per capita, which is equivalent to a 5% increase in general expenditures.

Next, we turn to the effect of Democratic mayors on spending across different policy areas. Table 2 shows the point estimates from our regression discontinuity models of the effect of mayoral partisanship on city spending, as well as other details of the models, such as the bandwidth, robust confidence intervals, and p-values. The left column shows the results using the raw version of the outcome variables, while the right column shows the results using logged versions of the outcome variables. The logged results reduce the effect of outliers, while the raw results have the advantage of easy interpretability.

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19. This is the lagged version of the dependent variable in our main analysis.

20. Gerber and Hopkins (2011) use a similar approach.

21. We obtain similar results if we focus on the difference between fiscal outcomes in the year the mayor was elected and 3–6 years after the election.

22. In appendix C, we show that this result is substantively robust to different bandwidths.

23. On the log scale, we find that Democratic mayors increase expenditures by .04 [0, .1], which is consistent with our main results.

24. General expenditures consist of all city expenditures other than utility expenditures, liquor stores expenditure, and employee-retirement or other insurance trust expenditure.
While the statistical significance of different spending areas varies, the point estimates for individual spending areas are almost all positive. In several spending areas, we find significant effects of Democratic mayors using the raw output variable but insignificant effects using the logged output variable. The most robust effect on an individual spending area is that Democratic mayors increase interest payments by $19 per capita (20%) compared to Republican mayors. In contrast to Gerber and Hopkins (2011), we find no statistically significant evidence that Democratic mayors decrease spending on police or fire protection relative to Republican mayors. Instead, our results tentatively suggest that Democratic mayors increase police spending, although the results do not quite approach conventional levels of statistical significance. We also find no evidence that Democratic mayors increase spending on education, welfare, healthcare, administrative expenses, sanitation, or utilities. The null results for education and welfare spending are somewhat surprising. However, more than half of the cities in our data do not actually spend anything on either of these policy areas.\footnote{On average, city governments spend less than one-half of 1\% of their budgets on public welfare and less than 5\% of their budgets on education (Hajnal and Trounstine 2010). Moreover, the median city spends $0 on these two categories.}

In addition, most school boards are directly elected with well-defined roles and autonomy from the municipal government (Berry and Howell 2007; Hess 2002). These factors limit the ability of mayors to exert influence in these policy areas in most cities.

We next analyze the effect of a Democratic mayor on municipal revenues and taxes per capita. Table 3 shows that Democrats raise taxes by the relatively modest amount of $42 per capita (5.8\%). Much of the increase in city tax revenues comes from increasing sales taxes revenues per capita by $10 per capita (7\%). We find no robust evidence that Democratic mayors increase property taxes, perhaps due to the many constraints on city property tax levies (Mullins and Wallin 2004).

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**Table 1. Covariate Continuity Tests for the Mayoral RD Design**

| Outcome Variable                        | Estimate (Robust CI) | Pr > | N | BW |
|-----------------------------------------|----------------------|------|---|----|
| Democratic vote share in t - 2          | .02 (.06, .1)        | .55  | 241 | 9.4 |
| Democratic vote share in t - 4          | -.01 (.06)           | .95  | 602 | 7.29 |
| Democratic mayor in t - 2               | -.01 (.29, .21)      | .76  | 350 | 9.04 |
| Democratic mayor in t - 4               | .04 (.16, .21)       | .77  | 873 | 9.6 |
| Total expenditures (t)                  | -31.02 (-508.16, 461.81) | .93  | 1,047 | 9.67 |
| Change in total expenditures (t)        | -39.34 (-188.28, 78.57) | .42  | 1,003 | 6.68 |

Note. Estimated using the default local-linear regression bandwidth (BW) and robust confidence intervals calculated by rdrobust (Calonico, Cattaneo, and Titiunik 2014a).

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**Figure 2. The effect of mayoral partisanship on per capita municipal expenditures.**

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\footnote{25. On average, city governments spend less than one-half of 1\% of their budgets on public welfare and less than 5\% of their budgets on education (Hajnal and Trounstine 2010). Moreover, the median city spends $0 on these two categories.}
Overall, we find no evidence that Democratic mayors increase total city revenues. This is somewhat surprising given our earlier findings that Democratic mayors spend substantially more than Republican ones. If Democratic mayors do not increase total city revenue, how do they pay for the higher spending levels we highlighted earlier? The answer is that they increase debt.\(^{26}\) We find that Democratic mayors issue $251 (11%) more in per capita debt than Republican mayors.\(^{27}\) Moreover, the increase in municipal debt under Democratic mayors persists for at least five years after the election (app. D).

### Robustness

In order to examine the robustness of our results, we ran several additional sets of analysis. These robustness checks

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\(^{26}\) It is important to note that this debt is not counted as revenue by the Census fiscal data. Indeed, the "Glossary of Selected Terms Used in US Census Bureau Publications of Government Finances" states that the municipal revenue variable includes "all amounts of money received by a government from external sources . . . other than from issuance of debt, liquidation of investments, and as agency and private trust transactions."

\(^{27}\) We also examined how mayoral partisanship influences different types of municipal government debt. We find that Democratic mayors increase guaranteed ("full faith and credit") debt by $175. However, they have no significant effect on nonguaranteed ("revenue") debt.
help rule out the possibility that our results are artifacts of any particular subset of data.

First, we examined the effect of mayoral partisanship on per capita expenditures using subsets of our data based on particular sources. Table 4 shows the results. The first row shows our main results. In the second row, we show the effect of a Democratic mayor on expenditures in cities with more than 75,000 people that appeared in Ferreira and Gyourko (2009)'s data set. In the third row, we show the effect of a Democratic mayor on expenditures in observations that appeared in Gerber and Hopkins (2011)'s data set.28 The fourth row shows the effect of a Democratic mayor in elections where we obtained data from OurCampaigns.com. The results are substantively similar across all three sets of data. Moreover, all three sets of results are significant at the 10% level. This indicates that our results are not driven by our coding of mayoral partisanship.

Given that we find a robust effect of mayoral partisanship on municipal expenditures in medium and large cities using the replication data of both Ferreira and Gyourko (2009) and Gerber and Hopkins (2011), we also explored what factors drove the generally null findings in these studies. In Ferreira and Gyourko (2009), it appears that their null findings are primarily driven by the small cities in their sample. Consistent with our theoretical argument, when we examine cities in Ferreira and Gyourko (2009)'s data with between 25,000 and 75,000 people, we find a statistically insignificant effect of a Democratic mayor on per capita expenditures.

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Table 3. City Fiscal Outcomes: Revenues per Capita

| Outcome Variable            | Per Capita Coefficient | Pr > |z|   | BW  | Logged Per Capita Coefficient | Pr > |z|   | BW  | N  |
|----------------------------|------------------------|------|----|-----|-----|-------------------------------|------|----|-----|-----|-----|
| Revenues                   | −4.41                  | 1    | 8.16| .01 | .83 | 8.68                          | 981  |
| Revenues − own sources     | 13.63                  | .7   | 9.22| −.01| .91 | 12                            | 980  |
| Taxes                      | 42.39                  | .06  | 6.41| .02 | .21 | 9.96                          | 981  |
| Property tax               | 18.36                  | .17  | 5.86| −.1 | 1.6 | 10.34                         | 981  |
| Sales tax                  | 10                     | .04  | 8.49| .33 | .06 | 8.13                          | 981  |
| Intergovernment revenue    | −34.2                  | .23  | 5.27| −.07| .24 | 6.26                          | 981  |
| Debt                       | 250.91                 | .03  | 4.9 | .1  | .03 | 7.57                          | 981  |

Note. Estimated using the default local-linear regression bandwidth (BW) and robust confidence intervals (in parentheses) calculated by rdrobust (Calonico, Cattaneo, and Titiunik 2014a).

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Table 4. Effect of Mayoral Partisanship on per Capita Expenditures using Data from Different Sources

| Data Set                      | Coefficient | Pr > |z|   | BW  | N  |
|-------------------------------|-------------|------|----|-----|-----|-----|
| Full data set                 | 95.78       | .04  | 10.45| 981 |
| Ferreira and Gyourko (2009)    | 159.57      | .02  | 9.21 | 560 |
| Gerber and Hopkins (2011)      | 269.5       | .08  | 5.82 | 98  |
| OurCampaigns                  | 126.01      | .06  | 9.1  | 499 |

Note. Estimated using the default local-linear regression bandwidth (BW) and robust confidence intervals (in parentheses) calculated rdrobust (Calonico, Cattaneo, and Titiunik 2014a).

28. In our electoral RD design, the estimand is the local average treatment effect (LATE) of narrowly electing a Democratic mayor rather than a Republican mayor. Thus, we drop elections from their dataset that did not have a Democratic and a Republican candidate in the race since the LATE is not defined in those cases.
penditures. Another methodological difference between our analysis and Ferreira and Gyorko (2009) is that their analysis includes elections with all values of the two-party vote share in their sample, while ours only includes elections within an optimal bandwidth around the discontinuity of 50% (Calonico, Cattaneo, and Titiunik 2014a). Indeed, in the appendix, we show that our main results are somewhat smaller when we use a bandwidth that includes the entire data set in our analysis. Gerber and Hopkins (2011) do not directly examine the effect of mayoral partisanship on the size of municipal government. Instead, they primarily focus on the effect of mayoral partisanship on the allocation of spending across programmatic categories. In appendix E, we show that we also obtain generally null results when we focus on the allocation, rather than the amount, of spending in each area. We believe this reflects the fact that Democratic mayors generally increase spending across many program areas, while Republican mayors decrease spending across many program areas. Thus, the amounts of spending change more than the allocation across areas.

We also explore whether our results are driven by a few very large cities with unusually large partisan effects (table 5). Following Gerber and Hopkins (2011), we define large cities as those with more than 170,000 people. We define medium cities as those with 75,000–170,000 people. While neither effect size crosses conventional statistical significance levels, the effect of a Democratic mayor on per capita expenditures appears to be similar in medium and large cities. This suggests that our findings are not driven by a few large cities in our data.

Next, we examined whether the impact of mayoral partisanship on the size of municipal government has changed over time (see table 6). Overall, we see little evidence of substantial heterogeneity in the effects of mayors over time. While the point estimates are smaller in the earlier time periods, none of the differences across time period are statistically significant. Thus, our main results do not appear to be sensitive to the exact time period that we study.

29. Given the difficulty of collecting election data on cities of this size (Hopkins and Pettingill 2015), there may also be errors in their coding of municipal partisanship or election outcomes.

30. Gerber and Hopkins (2011)’s null results may also be partially driven by their choice to compare Democratic mayors with both Independent and Republican mayors. As they acknowledge, this means that “candidates running for mayor [in their analysis] could include both people to the right of the Democratic candidate and people to the left” (Gerber and Hopkins 2011, SI, 6).

31. The Pr > |z| or probability that this observed difference is due to chance is 0.87, and so we fail to reject the null hypothesis that the difference between medium and large cities is zero.

32. The Pr > |z| or probabilities that these observed differences are due to chance are 0.48 and 0.68, and so we fail to reject the null hypotheses that the difference between the first and second time periods or first and third periods are zero.

33. Note, however, that the difference is not statistically significant. The Pr > |z| or probability that this observed difference is due to chance is 0.23, and so we fail to reject the null hypothesis that the difference between Southern and non-Southern cities is zero.

34. For this analysis, we subset our data to the period 1950–2006 to ensure that each time horizon uses a similar data set.

35. The constant effect size after two years is consistent with the results in in Caughey et al. (2015) about the long-term impact of governors on policy.

Table 5. Effect of Mayoral Partisanship on per Capita Expenditures in Medium and Large Cities

| Data Set            | Coefficient | Pr > |z| | BW  | N  |
|---------------------|-------------|------|---|----|----|
| Full data set       | 95.78       | .04  | 10.45 | 981 |
| (3.8, 210)          |             |      |      |    |
| Medium cities       | 104.86      | .15  | 6.74 | 471 |
| (75,000–170,000)    |             |      |      |    |
|                        | (−38.6, 261.3) |    |      |    |
| Large cities        | 124.74      | .16  | 9.93 | 510 |
| (170,000+)          |             |      |      |    |
|                        | (−48.8, 304.5) |    |      |    |

Note. Estimated using the default local-linear regression bandwidth (BW) and robust confidence intervals (in parentheses) calculated by rdrobust (Calonico, Cattaneo, and Titiunik 2014a).

We also examined whether the impact of mayoral partisanship on the size of municipal government varies when we exclude the South from our analysis. Table 7 shows that the effect of mayoral partisanship is somewhat larger when we exclude the South than in our main results. Moreover, there is no significant effect of mayoral partisanship in the south. This could be due to greater ideological polarization between Democratic and Republican mayoral candidates in the non-South than in the South.

Finally, in figure 3, we explored the sensitivity of our main results on per capita expenditures to alternative time horizons. We find that it takes mayors two years to have an effect on municipal expenditures. However, after two years, the effect of a Democratic mayor stays relatively constant until at least six years after the initial election. Thus, our main results do not appear to be sensitive to the time horizon that we select for mayors to have an impact on fiscal policies.

DIFFERENCES ACROSS MUNICIPAL INSTITUTIONS

In this section, we examine whether the impact of mayoral partisanship varies in cities with different institutions. We
test whether the impact of mayors on policies differs in officially partisan versus nonpartisan cities and whether those cities with a strong mayor system differ from those with a council-manager form of government. However, it is important to note that these comparisons could be conflating the causal effect of institutions with other cross-sectional differences between cities. Indeed, our research design identifies the local average treatment effect (LATE) of a Democratic mayor on city fiscal outcomes. It does not enable us to causally identify differences in the impact of mayoral partisanship across institutions.

The differential impact of partisan mayors in cities with partisan and nonpartisan ballots is shown in table 8. We find an effect of Democratic mayors on expenditures in nonpartisan cities, but no statistically significant effect in officially partisan cities. While the estimated effect is larger in nonpartisan cities, the difference between the effect of mayors in partisan and nonpartisan elections is not statistically significant.37

We next look at the differential ability of mayors to affect policy in cities with strong mayor systems relative to cities with mayor-council systems where the city manager is the chief executive of the municipal government. These results are shown in table 9. While the estimated effect is somewhat larger in council-manager cities, the difference in the effect of mayoral partisanship between the two systems is not statistically significant. This demonstrates that our estimate of the effect of Democratic mayors is not driven by one form of government.

36. Our findings here are similar to Gerber and Hopkins (2011), who also report no statistically significant difference between the impact of mayors in cities with partisan and nonpartisan elections.

37. The lack of differences across institutions are also in line with Gerber and Hopkins’s (2011, SI 5) finding that municipal institutions do not affect the impact of a mayor’s partisanship on the allocation of municipal spending across programmatic categories.
and cities with Democratic mayors pay much more interest to service this debt.

We also examine whether the impact of mayoral partisanship varies in cities with different institutions. We find no significant differences in the effect of mayoral partisanship in cities with partisan and nonpartisan elections, or cities with strong-mayor and council-manager systems. This demonstrates that the effect of Democratic mayors is not driven by one form of government. It also indicates that reform institutions designed to insulate local politics from the control of parties do not seem to change the effect of the mayor’s partisan affiliation on policy.

Overall, we conclude that despite the multitude of constraints on city governments, elections have an important impact on municipal policy in medium and large cities. Moreover, partisan selection plays a role in local politics in much the same way that it does in the United States as a whole. In contrast to the argument that Democratic and Republican mayors do not have a partisan way of implementing city policy, we show that Democratic mayors substantially expand the size of government relative to Republican mayors. Our findings also provide a mechanism for the link between public opinion and municipal policies (Tausanovitch and Warshaw 2014). It seems likely that one of the mechanisms for responsiveness in municipal government is that more liberal cities tend to elect more Democratic mayors, who then expand the size of government. This extends theories of policy responsiveness at other levels of government, and shows that elections at the local level are an important way that democracy in the United States reflects the will of its people.

Future research should examine whether the partisanship of mayors affects nonfiscal policies, such as gay rights policies. Future work should also examine whether the partisan composition of city councils affects municipal policies. Finally, future research should continue to explore the interaction between the impact of mayors and the institutional constraints on municipal governments.

Table 8. Differences between Effect of Mayor in Cities on per Capita Expenditures with Partisan and Nonpartisan Elections

|                  | Coefficient | Pr > | z  | BW  | N   |
|------------------|-------------|------|----|-----|-----|
| Partisan elections | 73.4        | .25  | 6.47 | 501 |
| (−57.7, 222.7)   |             |      |     |     |
| Nonpartisan elections | 175.87     | .09  | 10.03 | 440 |
| (−28.5, 370.5)   |             |      |     |     |
| Difference       | −102.47     | .41  |     |     |

Note. Estimated using the default local-linear regression bandwidth (BW) and robust confidence intervals (in parentheses) calculated by rdrobust (Calonico, Cattaneo, and Titiunik 2014a).

Table 9. Differences between Effect of Mayor in Cities with and without City Managers

|                  | Coefficient | Pr > | z  | BW  | N   |
|------------------|-------------|------|----|-----|-----|
| Council-manager system | 120.82   | .07  | 5.62 | 341 |
| (−9.9, 303.9)    |             |      |     |     |
| Strong mayor system | 60.55    | .5   | 8.03 | 572 |
| (−114.5, 233.8)  |             |      |     |     |
| Difference       | 60.27      | .62  |     |     |

Note. Estimated using the default local-linear regression bandwidth (BW) and robust confidence intervals (in parentheses) calculated by rdrobust (Calonico, Cattaneo, and Titiunik 2014a).
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