Representation in Municipal Government

Chris Tausanovitch*
Department of Political Science
UCLA

Christopher Warshaw†
Department of Political Science
Massachusetts Institute of Technology

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Abstract: Municipal governments play a vital role in American democracy, as well as in governments around the world. Despite this, little is known about the degree to which cities are responsive to the views of their citizens. In the past, the unavailability of data on the policy preferences of citizens at the municipal level has limited scholars' ability to study the responsiveness of municipal government. We overcome this problem by using recent advances in opinion estimation to measure the mean policy conservatism in every U.S. city and town with a population above 20,000 people. Despite the supposition in the literature that municipal politics are non-ideological, we find that the policies enacted by cities across a range of policy areas correspond with the liberal-conservative positions of citizens on national policy issues. In addition, we consider the influence of institutions, such as the presence of an elected mayor, the popular initiative, partisan elections, and term limits. Our results show that these institutions have little consistent impact on policy responsiveness in municipal government. These results demonstrate a robust role for citizen policy preferences in determining municipal policy outcomes, but cast doubt on the hypothesis that simple institutional reforms enhance responsiveness in municipal governments.

*Assistant Professor, Department of Political Science, UCLA, ctausanovitch@ucla.edu

†Assistant Professor, Department of Political Science, Massachusetts Institute of Technology, cwarshaw@mit.edu

Cities and other local governments play a crucial role in American democracy. There are nearly 90,000 local governments in the United States. Collectively, these local governments employ approximately 11 million workers, collect nearly a quarter of the nation's revenues, and allocate a large share of the country's public goods (U.S. Census of Government, 2011; Trounstine, 2010). As a result, it is crucial to know whether city governments represent the views of their citizens.

There is a large literature showing that elected officials at the national (Stimson, MacKuen, and Erikson, 1995) and state (Erikson, Wright, and McIver, 1993; Lax and Phillips, 2012) levels are highly responsive to the policy preferences of their constituents. In contrast, scholars of urban politics have focused on the economic, political, and legal constraints facing local policymakers (Gerber and Hopkins, 2011; Leigh, 2008; Nivola, 2002; Peterson, 1981, 1995; Rae, 2003; Self, 2003). Due to the multitude of constraints on local governments, most past work has concluded that political factors have little influence on local policy outputs (Craw, 2006; Gerber and Hopkins, 2011; Morgan and Watson, 1995; Peterson, 1981; Ruhil, 2003; Wolman, Strate, and Melchior, 1996). However, there have been no comprehensive studies about whether city policies are actually responsive to the views of their citizens. This gap in the literature is largely due to the fact that previous scholars have lacked a measure of the policy preferences of city residents (Trounstine, 2010). Most previous studies have used proxies for public opinion such as partisanship or demographic groups rather than a direct measure of the policy conservatism of citizens in each city and town (Craw, 2010; Hajnal and Trounstine, 2010).

In this study, we examine the relationship between the policy preferences of the mass public and municipal policy outcomes. Our work utilizes new estimates of the policy con-

servatism of all cities and towns with more than 20,000 people. Our measures of city policy conservatism are generated by jointly scaling the ideal points of over 275,000 people from nine recent large-scale surveys, and then using recent advances in opinion estimation to develop more accurate estimates at the city-level. In all, we examine representation in nearly 2,000 cities and towns across the country.

In contrast to previous work that emphasizes the constraints on city elected officials, we find that city governments are responsive to the views of their citizens across a wide range of policy areas. Moreover, the substantive impact of citizens' preferences on policy outcomes is quite large. After controlling for a number of factors that influence city policies, the most liberal cities spend over twice as much per capita as the most conservative cities. They also have higher taxes per capita and less regressive tax systems than conservative cities.

Next, we examine whether variation in political institutions affects democratic responsiveness in city governments. Many of these institutions were established by reformers to cultivate 'better' government by reducing the power of narrow interests and wresting power from local bosses. For instance, some cities have elected mayors, while other cities eschew elected mayors in favor of city councils and professional managers. But the broader impacts of these reforms is unclear. In particular, we do not know whether they enhance representation in city government (Trounstine, 2008). In this paper, we study the impact of four institutions designed to enhance representation. In contrast to the expectations of reformers, we find that no institution seems to consistently improve responsiveness.

The paper proceeds as follows. First, we discuss previous literature on representation in municipal government. Next, we examine the previous literature on the impact of local political institutions on democratic responsiveness. Third, we discuss our research design.

Next, we present our findings on the responsiveness of city policy outcomes to public opinion and the effect of political institutions on representation. Finally, we briefly conclude and discuss the implications for future research.

Responsiveness in City Government

Many scholars argue that municipal governments are unresponsive to the views of their citizens (Craw, 2006; Gerber and Hopkins, 2011; Morgan and Watson, 1995; Peterson, 1981; Ruhil, 2003; Wolman, Strate, and Melchior, 1996). This view suggests that elected city leaders have limited control over policy outcomes due to a multitude of institutional constraints. First, cities are subordinate to states and the national government. There are a variety of statutory or constitutional constraints on specific local policies, particularly in the area of taxation (Ladd and Yinger, 1989). Moreover, there are a number of areas where responsibility over policy is shared between levels of government (Berman, 2003; Craw, 2006; Nivola, 2002; Peterson, 1995). Federal and state governments also exert indirect control over local policy by providing restricted grants and funding streams for specific programs. Second, cities face constraints stemming from economic competition (Bailey and Rom, 2004; Ladd and Yinger, 1989; Peterson, 1981; Rae, 2003). Indeed, cities have little control over the movement of people, industry, and capital across their borders.

There are reasons, however, to believe that city governments should be responsive to the views of their citizens. The central assumption of American politics scholarship over the past 30 years is that elected officials are primarily motivated by electoral incentives (Kousser, Lewis, and Masket, 2007; Mayhew, 1974). Re-election minded officials have in-

centives to adhere to the will of their constituents in order to gain their votes. Indeed, a variety of scholars have found that citizens hold local officials accountable for their decisions in office. Arceneaux (2005) finds that survey respondents connect their evaluation of mayors' performance on traffic congestion and other salient issues to their vote choice. Similarly, Howell and Perry (2004) shows that respondents' evaluations of city services in four large cities (Charlotte, Chicago, Detroit, and New Orleans) were significantly related to mayoral approval ratings. Finally, Stein, Ulbig, and Post (2005) find that mayoral approval significantly predicts vote choice in several recent Houston mayoral elections.

Moreover, responsiveness does not necessarily depend on a traditional view of the legislator-constituent relationship, in which constituents observe the actions of legislators and reward whoever best represents their policy preferences. Tiebout (1956) offers a model of city politics in which citizens locate themselves in cities which best match their preferences for public goods provision. It may be the case the citizens vote on the basis of vague notions of approval for the policies of their city, and that their choice to move or stay creates a market-based mechanism for city representation. In the Tiebout model, citizens need not have a deep knowledge of the actions of their public officials, they need only know what level of public goods they are receiving. This logic applies equally well to other policies besides public goods provision, for instance the kind of public goods provided. One implication of a Tiebout type model is that representative institutions may not matter very much. Elected politicians are incentivized to pursue policies that retain and attract like-minded citizens, regardless of whether they are city councilors or mayors, partisan or non-partisan, or whether voters can change policy directly at the ballot box.

Some recent work supports the notion that local policymakers are responsive to their

constituents. For instance, Gerber and Hopkins (2011) show that Democratic mayors spend less on police and fire services than their Republican counterparts.[1] Palus (2010) examines policy representation in twenty-six large cities, and finds strong evidence that the ideological preferences of citizens are reflected in the spending decisions of governments. At the county-level, Choi et al. (2010) find that Democratic votes for president are correlated with greater expenditure levels and a larger share spent on redistribution.

H1: City policies are responsive to the policy preferences of their citizens.

The Impact of Institutions on Representation in Cities

There are a number of institutions that reformers have established to improve the quality of municipal government (Lubell et al., 2009; Trounstine, 2008). In this section, we focus on four such institutions: the presence of a city manager rather than an elected mayor, the presence of direct democracy provisions, the presence of non-partisan elections for mayor and city council, and the presence of term limits.

These institutions are a good test case for the importance of municipal institutions because they were designed with representation in mind. In particular, reformers around the turn of the nineteenth century sought to cultivate 'better' government by decreasing the power of party machines, increasing professionalization and promoting political involvement by the 'right' kind of people. The Progressive Era reformers wanted to diminish the power of narrow interests and wrest power from local bosses. Although the power of party bosses greatly diminished over the course of the 20th century, the broader impacts of these reforms

[1]However, Gerber and Hopkins (2011) find no difference between Democratic and Republican mayors in a variety of other policy areas.

is unclear. In particular, we do not know whether they enhance or reduce representation in cities as a whole, especially now that the power of local political parties are greatly diminished even in cities that retain pre-reform institutions (Trounstine, 2008).

According to one recent study, "the most frequently analyzed and politically debated feature of municipal government is the balance of electoral versus managerial power in the executive branch of city government" (Lubell et al., 2009). In the early twentieth century, most cities had an elected mayor that led the executive branch and a city council that handled legislative functions (Schiesl, 1980). The Progressive reform movement came to link mayor-council systems with the inefficiency and corruption of party machines (Murphy, 2002). Reformers argued that city governments should be run by experts rather than politicians (National Municipal League, 1916). The "reform" council-manager system eliminated the political position of an elected mayor as chief executive. Instead, cities hired a professional city manager to run the government and make daily administrative decisions. The mayor was reduced to a figurehead with little real power. Most cities have adopted a council-manager form of government (Ruhil, 2003; Svara, 1990). While city managers may be better than elected mayors at promoting efficiency and economic development (Stein, 1990), the dominant view among scholars is that cities with an elected mayor are more responsive to the views of their citizens than cities with a "reform" council-manager system (Sharp 1997; but see Lubell et al. 2009). This leads to the hypothesis that:

H2: Cities with elected mayors are more responsive to the views of their citizens than cities with a council-manager system.

Progressive reformers also believed that partisan elections helped to increase the power of party bosses. As a result, they promoted the creation of nonpartisan elections for mu-

nicipal office (Trounstine, 2010). In nonpartisan elections, parties do not officially nominate candidates for office, and candidates' party affiliations generally do not appear on the ballot. Most cities in the United States have adopted nonpartisan elections. Scholars have reached conflicting results on the effect of non-partisan elections on representation. Hansen (1975) finds some evidence that cities with non-partisan have weaker representation. More recent work on non-partisan judicial elections has found that judges elected through non-partisan elections are more responsive to public opinion since they cannot rely on partisan cues to signal their policy positions (Caldarone, Canes-Wrone, and Clark, 2009). But others argue that non-partisan elections typically have lower turnout than partisan elections, which may increase the power of special interests (Schaffner, Streb, and Wright, 2001). We examine the following hypothesis:

H3: Cities with partisan elections are more responsive to their citizens' policy preferences than cities with non-partisan elections.

A more recent reform designed to increase democratic responsiveness is the development of direct democracy provisions. The potential for citizen initiatives may create stronger incentives for elected officials to be attentive to constituent interests. As a result, scholars argue that policy choices are more likely to be responsive to voters' preferences when direct democracy exists (McCabe and Feiock, 2005). While few studies have studied the effect of direct democracy on representation at the local level (Lubell et al., 2009), the evidence at the state level is mixed. A number of studies have found that majoritarian interests are more likely to prevail in states with direct democracy institutions (Gerber, 1999; Tolbert, 1998). But other studies find no significant relationship between the presence of the citizen initiative and democratic responsiveness (Lax and Phillips, 2012). We examine the following

hypothesis:

H4: Cities with direct democracy provisions are more responsive to the views of their citizens than citizens without direct democracy.

Reformers in the late 20th century have also argued that the presence of term limits affects the link between elected officials and their constituents (Carey, Niemi, and Powell, 2000). Some scholars find evidence that the turnover caused by term limits leads to less experienced elected officials (Kousser, 2005). This reduces the capacity of lawmakers to assess and respond to public opinion. Moreover, it may reduce legislators' incentives to respond to public opinion by limiting the value of elected office (Carey et al., 2006). However, other scholars argue that the turnover caused by term limits leads elected officials to better reflect current constituents' preferences (Petracca, 1993). This leads to our last hypothesis:

H5: Cities with term limits for their officials are more responsive to their citizens' policy preferences than cities without term limits.

Research Design

Measuring City Policy Preferences

As the starting place for our model of city *policy conservatism*, we estimate a large sample of citizens' ideal points using an approach similar to the one taken by Tausanovitch and Warshaw (2013). First, we pool together data from eight recent large-scale surveys of the American public (the 2006, 2007, 2008, 2009, 2010, and 2011 Cooperative Congressional Election Surveys (CCES) and the 2000 and 2004 Annenberg National Election Surveys (NAES)).

Each of these surveys asked between 14 and 32 policy questions to 30,000-80,000 Americans.

We assume that all survey respondents have a quadratic utility function with normal errors. Each item j presents individuals i with a choice between a "Yes" position and a "No" position. We assume that respondents' policy preferences lie in one-dimensional policy space. A preliminary test of this assumption is provided in Appendix B.[2] We estimate respondents' ideal points using a Bayesian Item-Response (IRT) model (Clinton, Jackman, and Rivers, 2004). In all, we estimate the ideal points of over 275,000 Americans.

Next, we estimate city-level policy conservatism by combining our individual-level data with a multilevel regression and poststratification (MRP) model (Park, Gelman, and Bafumi, 2004). This approach employs Bayesian statistics and multi-level modeling to incorporate information about respondents' demographics and geography in order to estimate the public opinion of each geographic sub-unit (see Jackman 2009; Gelman and Hill 2006 for more about multi-level modeling). One way of thinking about an MRP model is to compare it to a weighted survey estimate that applies very finely tuned weightings, based on Census data, of specific demographic-geographic types. It estimates each individual's response as a function of both demographic and geographic predictors. MRP models have been found to produce very accurate estimates of public opinion by state and congressional district with national samples of just a few thousand respondents (Lax and Phillips, 2009; Warshaw and Rodden, 2012). To validate our estimates of city policy conservatism, we compare them

[2]A potential critique of this approach is that it is plausible that Americans' preferences on city policies are distinct from their preferences on national policies. Indeed, scholars of municipal politics have often highlighted the fact that cities consider issues that are quite different from the sorts of policy issues that are considered at the federal level (Oliver, Ha, and Callen, 2012) To test this hypothesis, on the 2012 Cooperative Congressional Election Study we asked both a battery of federal policy questions and a battery of questions that was oriented towards state and local politics. Overall, we find no evidence that separate forces are at work in determining citizens' positions on municipal policy questions and federal policy questions. More information on this analysis is in Appendix B.

with estimates of presidential vote share in each city derived from precinct-level election returns (Harvard Election Data Archive , 2012). Our estimates of city policy conservatism are correlated with presidential vote share in the 2008 election at .76. This suggests that our estimates are accurately capturing cities' policy preferences on a left-right continuum.

Figure 1 shows the policy preferences of the 51 cities with a population larger than 250,000 people. We find significant variation in the policy preferences of cities. Not surprisingly, we find that San Francisco, Washington DC, and Seattle are three of the most liberal cities in the country. Mesa AZ, Oklahoma City OK and Virginia Beach VA are three of the most conservative cities.

Measuring the Policy Outcomes

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 measure of the "conservatism" of city policies that is analogous to the measure of state policies developed by Erikson, Wright, and McIver (1993). However, there is no existing measure of policy conservatism available at the city level. As a result, we use a mixed approach and measure city policy outcomes using data from a variety of sources.

First, we developed a new scaled measure of *policy outcomes* using data from the International City/County Management Association's (ICMA) 2010 survey of government sustainability. The ICMA survey asks city officials a series of questions about policies that have been enacted by the city government, which they are asked to answer on a factual basis. The survey has an emphasis on environmental policies, but also asks about an array of other

policies, such as whether the city provides financial incentives for affordable housing, provides funding for preschool education, or has a program for the purchase or development of historic property, among many others. These questions are scaled in the same way as our measure of citizens' policy conservatism, using the 2-parameter quadratic item response model introduced into political science by Clinton, Jackman, and Rivers (2004). Much as individuals choose whether to support a given policy, city government must choose whether to enact these policies, providing us information about the conservatism of the city as a decision-making body.

The resulting measure is as close as we were able to come to a broad liberal-conservative policy score for each city. This measure is a one-dimensional summary of a wide variety of policy "stances," but in this case the stances are actual enacted policies. However, this measure is not without drawbacks. The survey is intended to evaluate local efforts towards environmental sustainability, and so many of the questions are focused on policies geared towards energy, the environment, and conservation. We find little evidence of a higher-dimensional structure in this data, lending credence to our assumption that this set of questions represents policy more broadly, but it is always possible that this unidimensionality is the result of the exclusion of certain policy issues. This is one reason why our analysis uses three other measures of policy outcomes that we describe below. A full list of questions used on the ICMA survey is provided in Appendix C, and the estimates themselves are available from the authors.

We generate three other city policy measures using data from the U.S. Census Bureau's 2007 Census of Governments, which provide detailed revenue, expenditure, and employment

data for U.S. local governments[3]. First, we estimate the *per capita taxes* in each city. Per capita taxes capture the total potential for redistribution within a particular city, and the tax burden is a major issue both within cities and nationally. Next, we estimate the *per capita expenditures* in each city. Per capita expenditures capture the size of government, one of the core 'liberal-conservative' issues in American politics. Finally, we estimate the *regressiveness of city taxation* based on the share of each city's revenues that are derived from sales taxes. Higher shares of sales taxes indicates a local tax structure that falls more heavily on poor residents, whereas tax structures based more heavily on property tax and income taxes are generally more redistributive.

City Institutions

Next, we examine the association between city institutions and responsiveness. Data on municipal institutions was obtained from a variety of sources. We collected data on cities that have *elected mayors* or council-manager systems from the 1987 Census of Governments. This data was verified against more recent data from the ICMA's Form of Government surveys. Data on the presence of *direct democracy* in cities was obtained from the ICMA's Form of Governments survey. We filled in data for missing cities from the Initiative & Referendum Institute at the University of Southern California. We obtained information on whether cities have *partisan elections* or nonpartisan elections from the ICMA's Form of Governments survey. We filled in data for cities that were not present in the ICMA data using data from Gerber and Hopkins (2011) and an Internet search of city websites. Finally,

[3]In some cases, we augment data for cities that failed to respond to the Census of Governments with data from the Census Bureau's most recently available annual Annual Survey of Governments

we collected information on whether cities have *term limits* for their elected officials using the ICMA's Form of Government surveys.

Explaining Variation in City Policies

In order to examine the relationship between city conservatism and policy outcomes, we construct a multi-level model that controls for a variety of political, economic, and legal factors. In particular, we are concerned about the effects of factors that contribute to a city's governing capacity. Large cities or rich cities can be expected to be involved in more areas of public life than cities that lack the resources to engage in as many projects. We expect smaller, poorer cities to have simpler tax systems and lower taxes, fewer environmental regulations, and lower expenditures. These effects occur for reasons that have little to do with politics. Cities are constrained by the resources available to them and the extent of the duties they can reasonably be expected to perform. For this reason we include controls for *city population*, the *median income*, *median housing value*, and the percentage of each city's population that is African-American (*percent black*).

It is also important to account for heterogeneity in the constraints facing municipal policymakers across states. Indeed, city governments only have powers allocated to them by state laws and constitutions. As a result, the state legal and political context can exert an important influence on municipal policy decisions. We account for state heterogeneity by including random effects for each state in our multilevel models.

While our multi-level model is well suited to examine the association between city conservatism and policy outcomes, it is difficult to interpret the results for the effect of institutions

on representation. As we will see, responsiveness of policy to the mass public's conservatism is non-linear, often due to what seems to be a conservative "floor" (cities can only spend so little, for instance). A very simple linear model does an adequate job of summarizing responsiveness, but does not capture the potential differences across different institutional settings. As a result, a quadratic model would be preferred. However, this introduces four more interaction terms into our model, and the squared terms have to be interpreted in conjunction with the non-squared terms. A simpler approach is to use so-called matching methods to approximate balance between institutional conditions, and then use simple non-parametric smoothing methods to show the effects in each institutional condition.

Matching methods are attractive for analyses involving large datasets where balance can plausibly be established by trimming observations. The large set of cities in our dataset allows us to 'simulate' the balance achieved by a random experiment by matching similar cities. Unlike a random experiment, however, this will depend on whether the matching method chosen matches units that are in some sense close enough to each other. Ho et al. (2007) make the case that matching reduces model dependence and provides more accurate causal inferences compared to standard ordinary least squares methods.

For this analysis, we use coarsened exact matching (Iacus, King, and Porro, 2012). Coarsened exact matching is a simple, transparent matching method in which continuous variables are coded as categorical variables, with observations in the same category considered "alike." All observations that do not have a match are dropped. For each institutional hypothesis, we find matches between cities with one institution, and cities with the other. The "control" group may then be compared to the "treatment" group. If the matching has succeeded (that is to say, that balance is achieved on all possible confounders), then we can simply compare

the slope of the relationship between outcomes and policy preferences for the two groups. We match on median income, median home values, population, the presence of each institution, and city conservatism. The categorizations that are used to match for each variable are described in further detail in Appendix D.

Are City Policies Responsive to their Citizens?

What is the relationship between city policy outcomes and city conservatism? Figure 2 shows the relationship between citizens' conservatism and four different city policies for the 2,000 cities in our dataset. Each panel shows scatter plots of a policy outcome on the y axis, and mean policy preferences of a given city on the x axis. The panel on the top left is our general policy scale. The panel on the top right shows the relationship between city conservatism and taxes per capita. On the bottom left, we show the association between city conservatism and the share of taxes that come from sales taxes. Finally, the bottom right plot shows the relationship between policy policy preferences and expenditures per capita. The top ten most populous cities are labeled in each panel with their official abbreviation. We also label Washington, DC, which is a notable outlier on most policy outcomes. The size of the circles representing each city are proportional to population. It is important to note, however, that the analyses are not weighted by population. Loess curves are fitted to each scatterplot.

These simple bivariate relationships go consistently in the direction we would expect. On the general policy scale, cities with more liberal populations tend to get more liberal policy, and this relationship is remarkably strong and linear. Likewise, liberal cities collect per more taxes per capita and have substantially higher expenditures per capita. Moreover, liberal

cities have less regressive tax systems. The share of sales revenues that comes from sales taxes is lower in liberal cities and higher in conservative cities.

These effects are all large, with upward slopes that cover most of the span of the policy outcome. However, in the case of expenditures per capita and taxes per capita, the relationship is difficult to see due to a small number of high values that stretch the scale of the y-axis. In Figure 2, we re-plot these policy outcomes, censoring the y-axis far below the maximum values. In both cases the effect is large, but seems to taper off on the right side of the spectrum, perhaps indicating a minimum level of taxes and service provision that is supported by conservatives.

Despite a strong bivariate relationship, a number of factors appear to moderate this relationship, as well they should. It appears from Figures 1 and 2 that more populous places have a tendency to be closer to the liberal side of the policy and public preferences, and that there may be a tendency for larger cities to adopt more liberal policies irrespective of preferences. We expect this to be the case, because liberal policy is usually associated with more government activity and larger cities have more capacity for activity. This may also be the case for richer cities.

In order to account for these possibilities, we run a multi-level regression model that includes possible cofounders, such as the size, wealth, and ethnic diversity levels of each city (Table 2). Controlling for other factors that influence city policy outcomes leaves the core relationships that we find in our bivariate analysis relatively unchanged. City policy conservatism has a robust, statistically significant, and substantively important relationship with the type of policy that cities implement. These relationships are similar in models that account for possible confounders.

In order to understand the substantive significance of these effects, it is important to consider the scale of the outcome policies under examination. How strong should we expect these relationships to be if democracy is very strong? One way to look at this question is to examine the size of the "errors" from our model for each policy outcomes. Figure 4 shows the estimated distribution of errors from a Bayesian implementation of our multilevel model with uninformative priors. These histograms represent the estimated posterior distribution of the residuals for the model- in other words, the distribution of differences from the predictions of the model and the observed outcome variables. The median error in predicting our policy scale is 0.56 standard deviations. The median error in the predicted share of taxes from sales tax is just 11%. The median error for taxes per capita is only 22 dollars, and the median error for expenditures is 47 dollars. How should these error be interpreted? Quite simply, they suggest that citizens could expect their per capita tax levy to be within 22 dollars of the taxes in similar cities with the same political preferences. In substantive terms, the relationship between preferences and outcomes is tight.

Do Institutions Affect Responsiveness in Cities?

Next, we examine our hypotheses about the impact of city institutions on responsiveness to public opinion. Table 3 shows the results of a simple multilevel regression with random effects for states. The key variables are the interactions between city conservatism and each institution. These interactions measure whether each institution is making cities more responsive to the preferences of their citizens. Across all four institutions, we find no consistent statistically significant interactive effect between institutions and policy conservatism. Only

two of these twelve coefficients are significant, for different institutions. We have no *a priori* reason to suspect that these effects should vary over different policy outcomes. This suggests that institutions are having little effect on representation in municipal governments.

Next, we examine the results of our matching analysis of the impact of institutions on representation. For each institution, the set of observations in one institutional condition are matched with corresponding observations that do not have that institution (e.g., cities with term limits are matched with those without term limits). Both sets of points are color coded, grey for cities with in one institutional condition, and black for cities in the other.

Figures 5 - 8 show the results of our matching analysis.[4] Each of the four panels has as its y-axis the same four policy outcomes from Figure 2. Each plot shows a loess curve fitted to the resulting scatterplots of the matched data, with a separate curve for each institutional condition. The scatterplots for the relationship between each city policy outcome and mean city policy preferences are shown. For each institutional condition, a loess curve is drawn through the corresponding points, weighted to balance institutional conditions with unequal numbers of matches.[5]

A few preliminary observations are in order. Firstly, the number of points in the top left panel is much smaller than the number of points in the other panels due to the relatively small number of cities that respond to the ICMA survey. As a result, there is a tendency for the curves in this panel to be the most different from each other due to random error. Likewise, within each panel, the curves are likely to differ most due to random error where the data is sparse, such as at the far right and far left of the graph.

[4]The full quantitative results of regression models using our matched datasets are available from the authors.

[5]Weighting follows the procedure from Iacus, King, and Porro (2012).

Figure 5 shows the results of the matching analysis for the type of government: mayoral or council-manager. Cities with elected mayors are drawn in grey, and cities with city managers are drawn in black, as are the corresponding loess curves. Figure 5 shows a remarkable lack of difference between the curves across three of the four policy outcomes. The policy scale in the upper-left panel is the only outcome that shows any difference between cities with elected mayors and council-manager systems. Here, the grey line is slightly steeper than the black line, indicating more responsiveness by cities with mayors. This is a statistically significant difference, but this relationship does not hold up in the other analyses. Other apparent differences, such as the far left side of the bottom right panel with expenditures as the dependent variable, are supported by very few data points. Overall, the responsiveness curves for mayor and council-manager cities are practically indistinguishable for per capita taxes, per capita expenditures, and the percentage of city revenues that come from sales taxes. Thus, our results provide little evidence for H3, our hypothesis that cities with directly elected mayors are more responsive. City manager systems, designed to be more professional and less political, appear to be just responsive to public opinion as their mayoral counterparts. Given the same set of public policy preferences, a city with a mayor looks almost exactly the same as a city with a city manager for most policy outcomes.

This pattern of little institutional difference is continued in Figure 6, where cities with partisan elections are shown in grey. This is the case with the fewest good matches. Despite the lower sample size, however, the responsiveness curves are again very similar. Cities with partisan elections and cities without partisan elections appear to have roughly the same level of responsiveness. Differences in the curves are too small to attribute to systematic differences across institutions, and in the case of expenditures per capita the two lines are

virtually identical. Thus, our results suggest that whether cities have partisan or nonpartisan elections has no impact on the link between public opinion and public policy outcomes.

Figure 7 shows the results for cities with (in grey) and without (in black) a popular initiative process. Due to differences between cities with and without popular initiatives, more observations are dropped for this analysis than for the analysis involving type of government. However, the overarching patterns are the same as for previous institutions. Across most of the support of the data, the estimated relationship between cities' policy conservatism and their policy outcomes is nearly identical for cities with and without direct democracy. There is one exception: a slight difference in responsiveness on the share of taxes coming from sales taxes. But have no *a priori* reason to expect that the effects of direct democracy should vary over different policy outcomes. As a result, we view the non-null finding on just one of four policy outcomes as very weak evidence for hypothesis H4, that direct democracy enhances representation. Overall, it appears to be the case that public views are about as well represented in cities where citizens are not able to vote on legislation at the ballot box as cities where they are.

Figure 8 shows the result of the matching analysis in the case of city council term limits. Cities with term limits are shown in grey. We have more data for this institution than previous ones. Once again, however, the curves for cities with and without term limits are close to identical over most of the support of the data for each policy outcome. The only exception is the share of taxes going to sales taxes. In this case, cities without term limits appear to be slightly more responsive than cities with term limits. Overall, our findings provide no support for H5, that term limits lead to greater representation. If anything, our findings suggest that term limits may harm representation on some policy outcomes.

Across four different policy outcomes, no institution consistently improves representation in municipal government. These institutions, however, exist under conditions that are different from when many of them were formulated. Although the literature on representation in cities has emphasized their role in changing the politics of local government and breaking party monopolies, their influence on systematic representation today has been underexplored. Despite much attention to these institutions, it appears that they have little effect on policy responsiveness. Progressive reformers may not have been too surprised to learn that these institutions are not as influential today as they may have been in the past. After all, the party machines that these policies were designed to mitigate are long gone.

Conclusion

A 2002 piece in the *Annual Review of Political Science* summarized the literature on municipal politics by stating that, "Politics has not always fared well in the political science literature on the cities, at least not in the United States" (Murphy, 2002). In contrast to much of this literature, we find that city policy is not apolitical, nor is it divorced from national political schisms. The policy outcomes in city and town governments can be predicted by the policy conservatism of their citizens. "Liberal" cities seem to get "liberal" policy and "conservative" cities seem to get "conservative" policy on average, controlling for other factors that might account for policy differences. This suggests that not only is city government political, but that it may have more in common with state and national politics than previous scholars have recognized.

However, unlike at the state and national level, we find scant evidence that differences

in municipal political institutions affect representation. Neither the choice of mayor versus city council government, partisan or non-partisan elections, the legality of illegality of ballot measures, or whether or not elected officials face term limits seem to affect the strength of the relationship between public policy preferences and city policies. This is contrary to hypotheses based on evidence from the existing literature, both from within the city politics literature and from scholarship on states and nations. While we are hesitant to put too sharp of a point on a null result, the similarity between responsiveness in different institutions is striking across different policy outcomes, even when we allow this relationship to have a very general functional form. Considering the emphasis in the literature on the importance of these institutions, the fact that we find few differences in responsiveness across institutions is striking.

Our results suggest that the effects of institutions on democratic representation may have been overstated by previous studies. But it is difficult to evaluate the extent to which our results are generalizable to other contexts. Part of the difficulty in generalizing these effects is establishing the categories that they should be applied to. Even within the category of local governments, there are many different types besides municipal governments: there are school districts, counties, utility districts, and many more. Cities themselves have scopes of authority and responsibility that differ widely (Oliver, Ha, and Callen, 2012), a fact that we have dealt with here merely by controlling for the size of populations and economies. A further complication is that the institutions of different levels of government may interact. Many of the institutions we have examined, however, share important features of state and national governments. Council manger governments share many features with parliamentary government and mayoral government is quite similar to a presidential system. Term limits

have been implemented at all levels of government. The salience, prominence or even legality of party labels may vary at different levels of government. Moreover, direct democracy provisions such as popular initiatives and referenda have been used at all levels of government.

Future research should seek to incorporate these institutional differences into their theories in order to examine the degree to which the effect of institutions varies across different levels of government. For instance, future work should examine why institutions such as direct democracy and term limits appear to have a greater effect on representation at the state level than at the municipal level.

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	Policy Conservatism	Median Income	City Population	Percent Black	Median Housing Value
Mean:	-0.05918	0.4769	0.7380	0.1176	1.4670
SD:	0.2604	.1762	2.366	0.1639	0.9444
Min.:	-1.01925	0.1472	0.2001	0.0010	0.3550
1st Qu.:	-0.21525	0.3475	0.2595	0.0160	0.8695
Median:	-0.03742	0.4358	0.3631	0.0440	1.2200
3rd Qu.:	0.11777	0.5808	0.6117	0.1460	1.7250
Max:	0.66881	1.3989	80.0828	0.9770	9.9360

Table 1: Summary Statistics for Independent Variables

	Scaled Policy Outcomes		Per Capita Expend.		Per Capita Taxes		Sales Tax Share	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	0.13*	0.19	1.83**	1.79**	0.90**	0.60**	0.35**	0.45**
	(0.07)	(0.15)	(0.21)	(0.22)	(0.14)	(0.15)	(0.05)	(0.05)
Policy Conservatism	1.20**	1.04**	-0.79**	-0.40**	-0.37**	-0.16**	0.08**	0.09**
	(0.18)	(0.19)	(0.10)	(0.12)	(0.05)	(0.05)	(0.02)	(0.02)
Median Income		0.29		-0.73**		0.07		-0.22**
		(0.35)		(0.20)		(0.09)		(0.04)
City Population		-0.01		0.05**		0.04**		0.00
		(0.01)		(0.01)		(0.00)		(0.00)
Percent Black		0.13		0.30*		0.31**		-0.13**
		(0.39)		(0.18)		(0.08)		(0.04)
Median Housing Value		-0.15**		0.23**		0.18**		0.01
		(0.06)		(0.04)		(0.02)		(0.01)
AIC	1106.05	1115.80	4141.06	4078.10	1741.77	1426.61	-1276.20	-1300.64
BIC	1122.40	1148.47	4162.67	4121.31	1763.25	1469.57	-1256.66	-1261.58
Log Likelihood	-549.03	-549.90	-2066.53	-2031.05	-866.88	-705.31	642.10	658.32
Deviance	1098.05	1099.80	4133.06	4062.10	1733.77	1410.61	-1284.20	-1316.64
Num. obs.	440	439	1638	1637	1588	1587	976	975

$^{*}p < 0.1$, $^{**}p < 0.05$

Table 2: Association Between City Liberalism and Policy Outcomes

	Scaled Policy Outcomes		Per Capita Expend.		Per Capita Taxes		Sales Tax Share	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	0.13*	0.01	1.83**	1.76**	0.90**	0.59**	0.35**	0.48**
	(0.07)	(0.18)	(0.21)	(0.23)	(0.14)	(0.15)	(0.05)	(0.05)
Policy Conservatism	1.20**	0.88**	-0.79**	-0.23	-0.37**	-0.17*	0.08**	0.01
	(0.18)	(0.39)	(0.10)	(0.22)	(0.05)	(0.10)	(0.02)	(0.04)
Elected Mayor		0.34**		-0.04		-0.01		0.00
		(0.10)		(0.05)		(0.02)		(0.01)
Partisan Elections		0.01		-0.05		0.02		-0.02
		(0.16)		(0.09)		(0.04)		(0.02)
Direct Democracy		0.00		0.13**		0.04**		-0.01
		(0.10)		(0.06)		(0.02)		(0.01)
Term Limits		-0.10		-0.03		-0.03		0.00
		(0.10)		(0.06)		(0.02)		(0.01)
Median Income		0.38		-0.77**		0.01		-0.27**
		(0.38)		(0.22)		(0.10)		(0.04)
City Population		0.00		0.05**		0.03**		0.00
		(0.01)		(0.01)		(0.00)		(0.00)
Percent Black		0.06		-0.03		0.21**		-0.19**
		(0.40)		(0.21)		(0.09)		(0.04)
Median Housing Value		-0.16**		0.26**		0.19**		0.01
		(0.07)		(0.04)		(0.02)		(0.01)
Conservatism x Mayor		0.25		-0.15		0.04		0.01
		(0.38)		(0.19)		(0.08)		(0.04)
Conservat. x Part. Elect's		-0.04		-0.50**		-0.12		-0.05
		(0.49)		(0.25)		(0.11)		(0.06)
Conservat. x Direct Dem.		0.26		0.09		0.01		0.09**
		(0.38)		(0.21)		(0.09)		(0.04)
Conservat. x Term Limits		-0.55		0.13		0.12		0.06
		(0.40)		(0.20)		(0.09)		(0.04)
AIC	1106.05	1059.72	4141.06	3200.55	1741.77	1122.52	-1276.20	-1050.05
BIC	1122.40	1123.98	4162.67	3283.18	1763.25	1204.82	-1256.66	-975.01
Log Likelihood	-549.03	-513.86	-2066.53	-1584.27	-866.88	-545.26	642.10	541.02
Deviance	1098.05	1027.72	4133.06	3168.55	1733.77	1090.52	-1284.20	-1082.05
Num. obs.	440	410	1638	1293	1588	1266	976	804

$^{*}p < 0.1$, $^{**}p < 0.05$

Table 3: Effect of Institutions on Representation

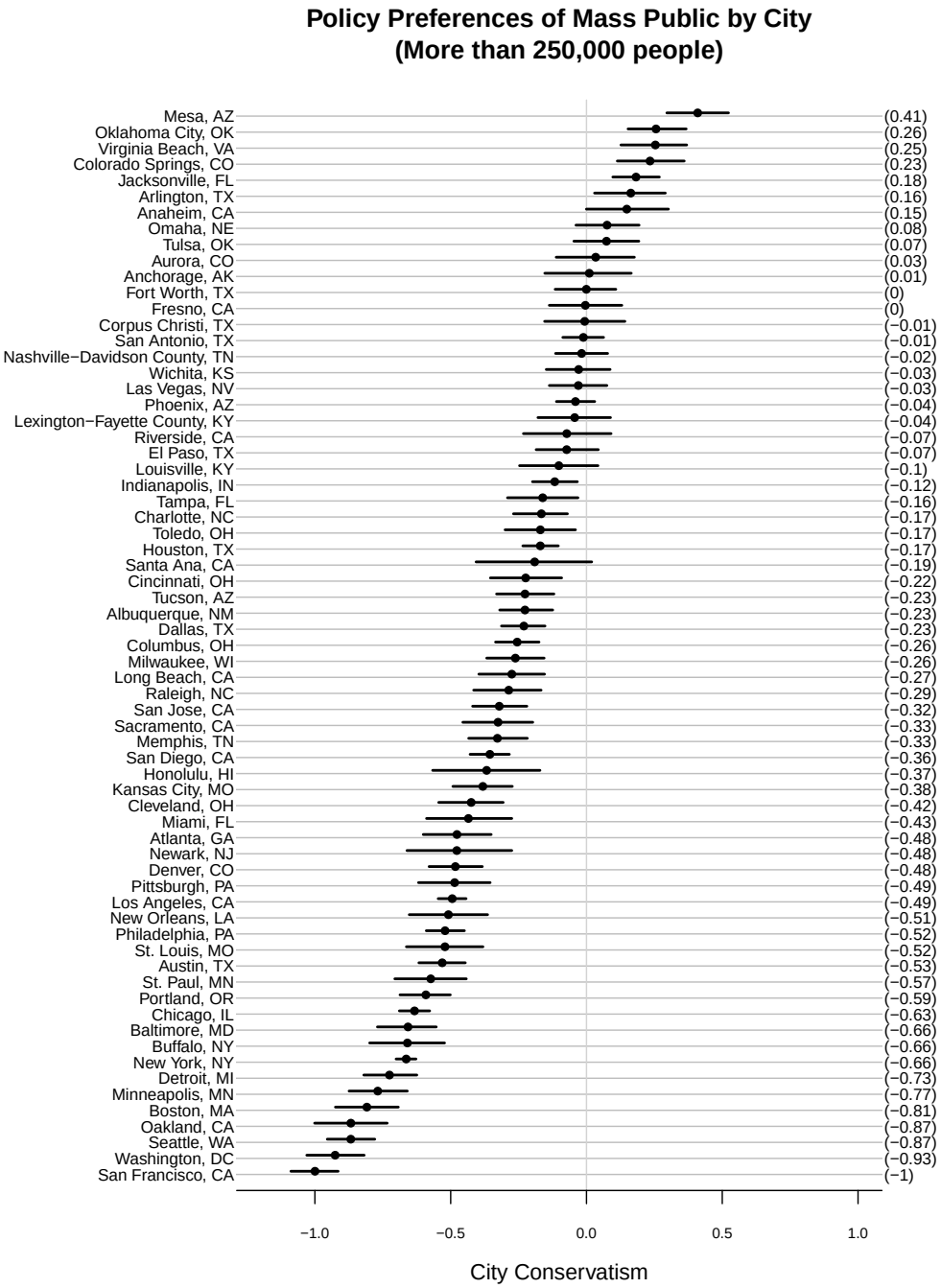

Figure 1: Policy Conservatism of Large Cities

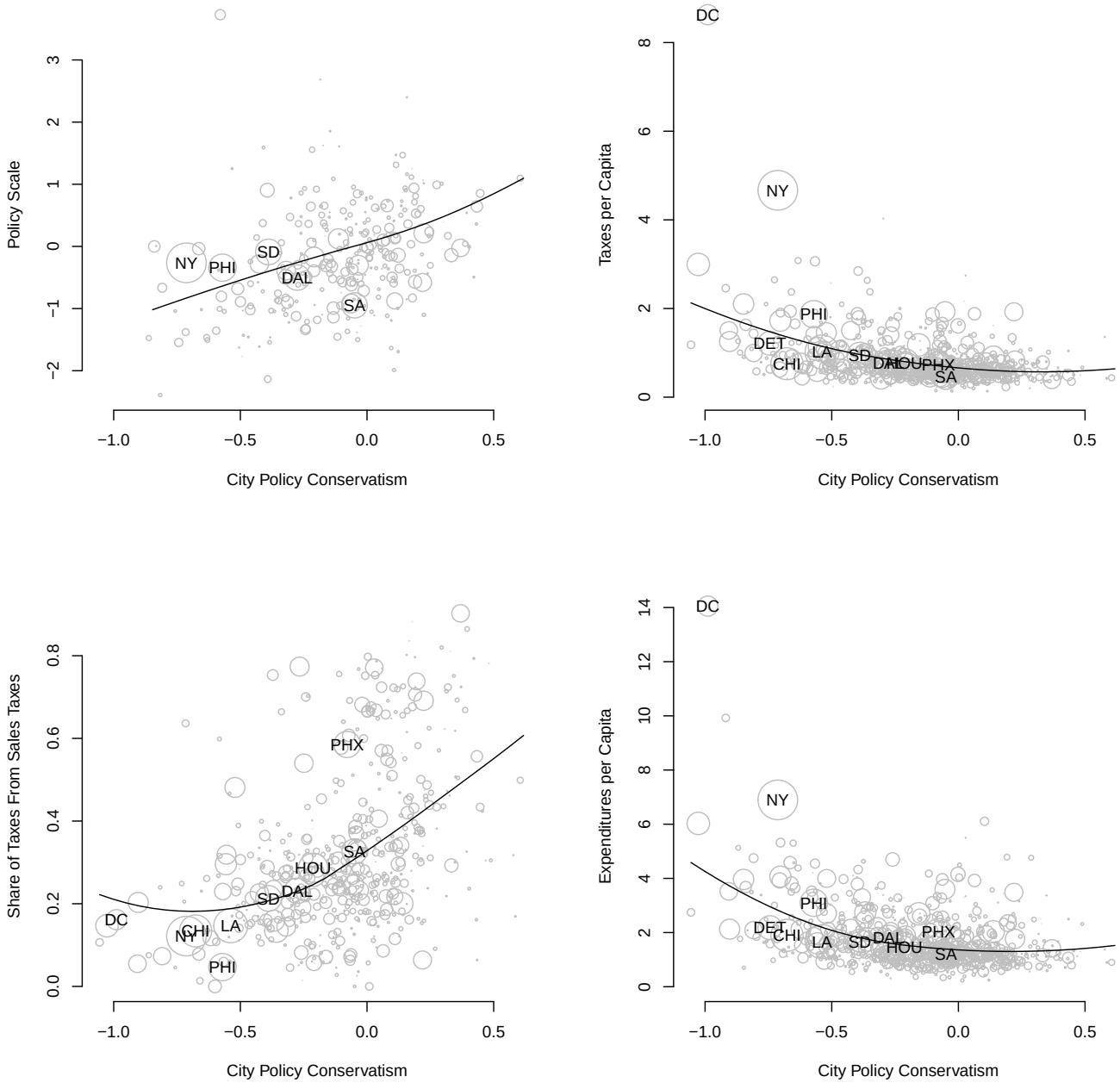

Figure 2: Responsiveness

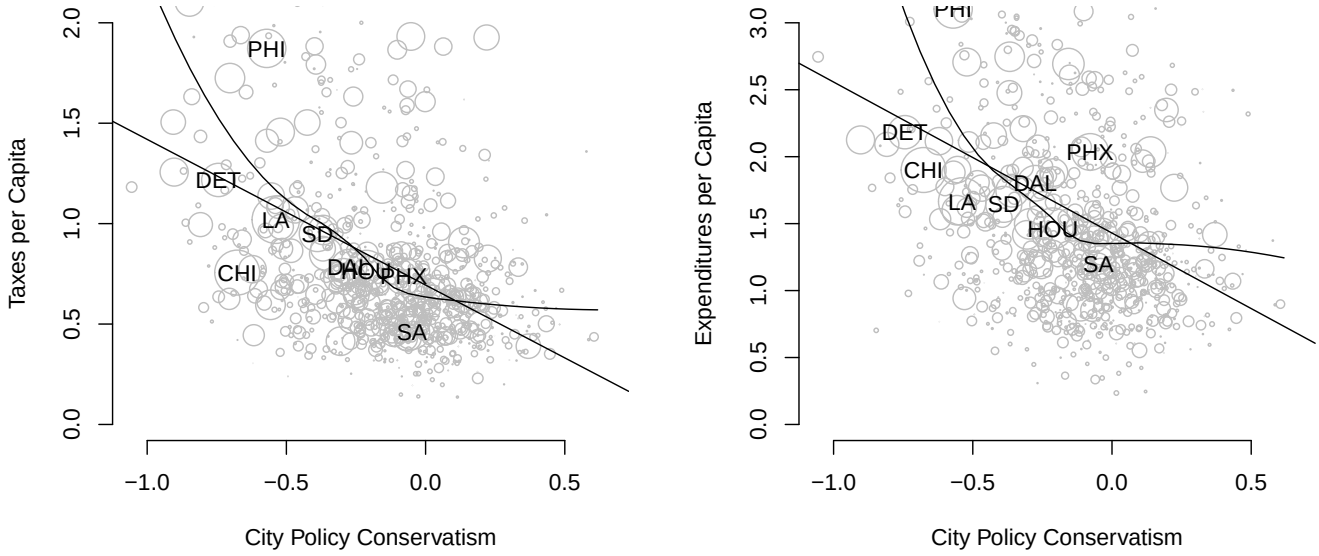

Figure 3: Responsiveness- Zoomed

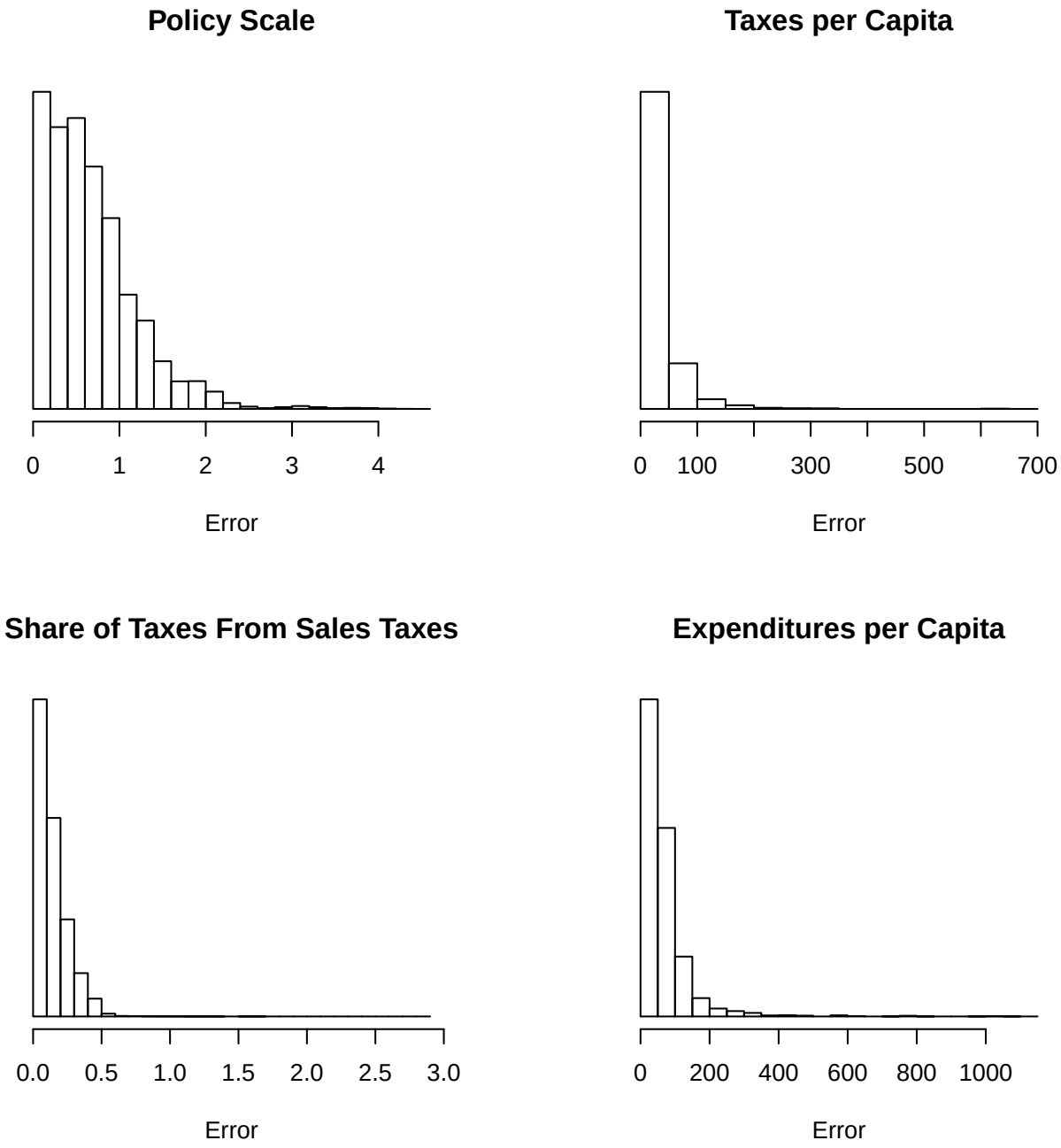

Figure 4: Error Distribution of Responsiveness Residuals

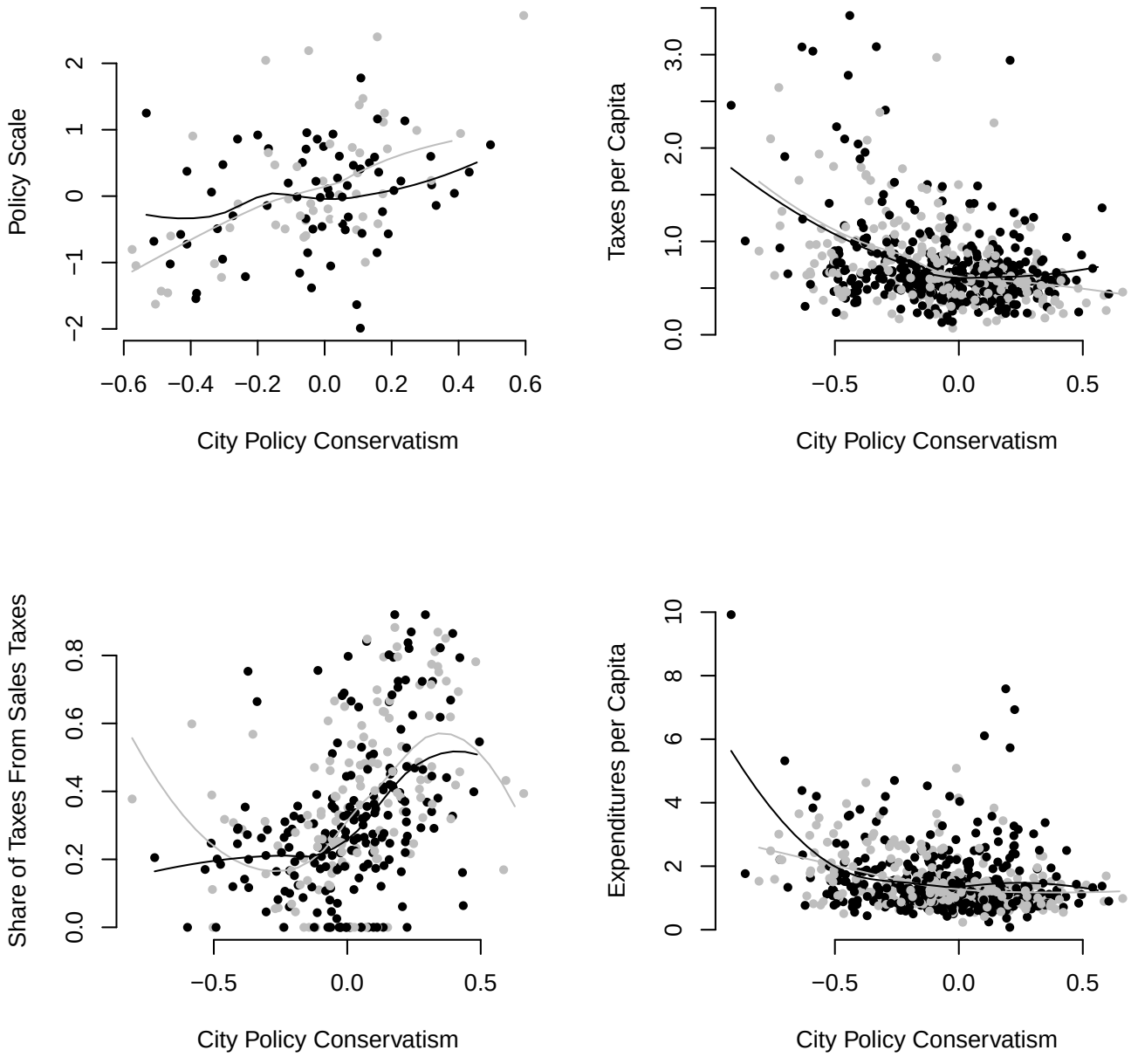

Figure 5: Type of Government

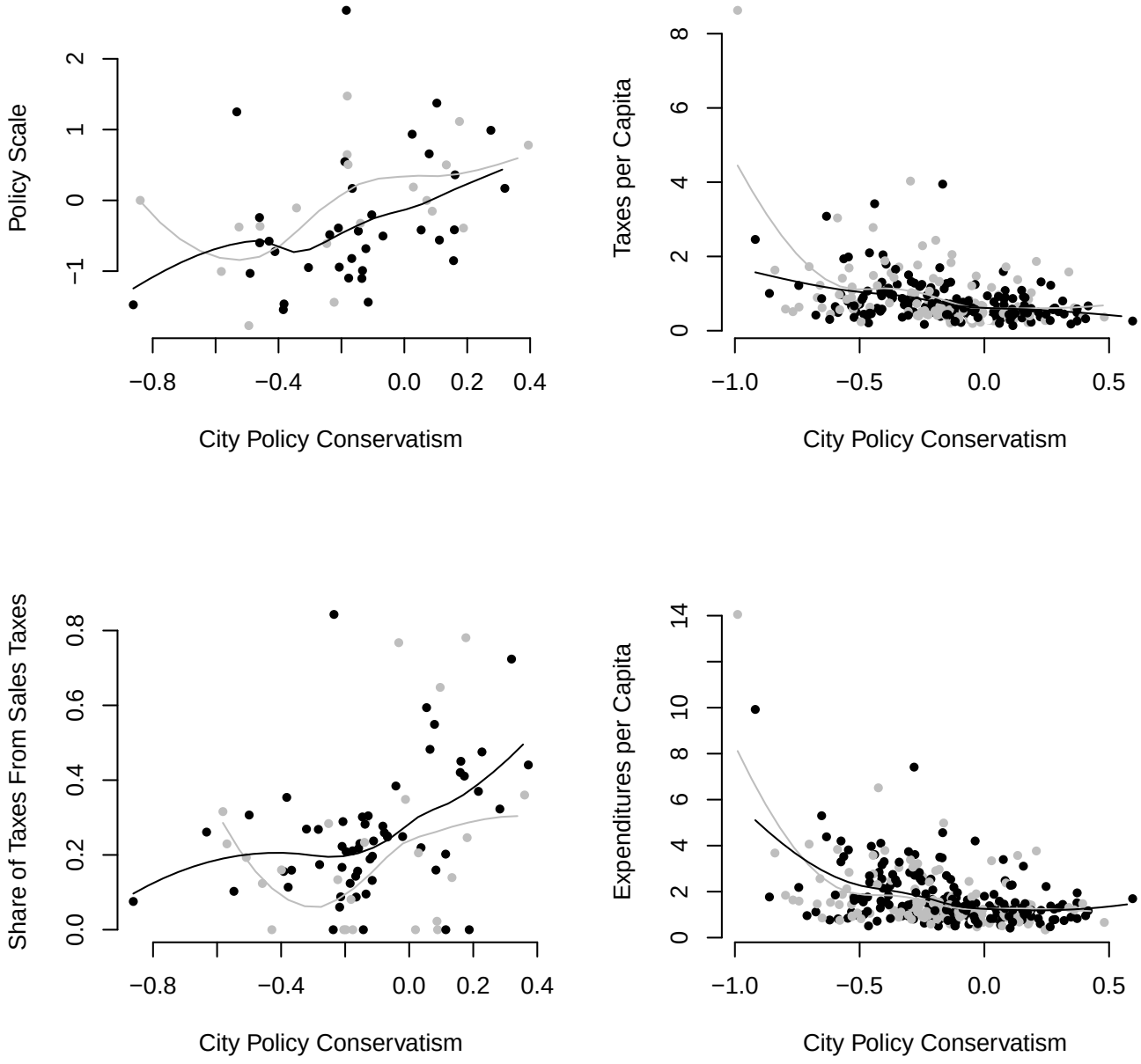

Figure 6: Partisan Elections

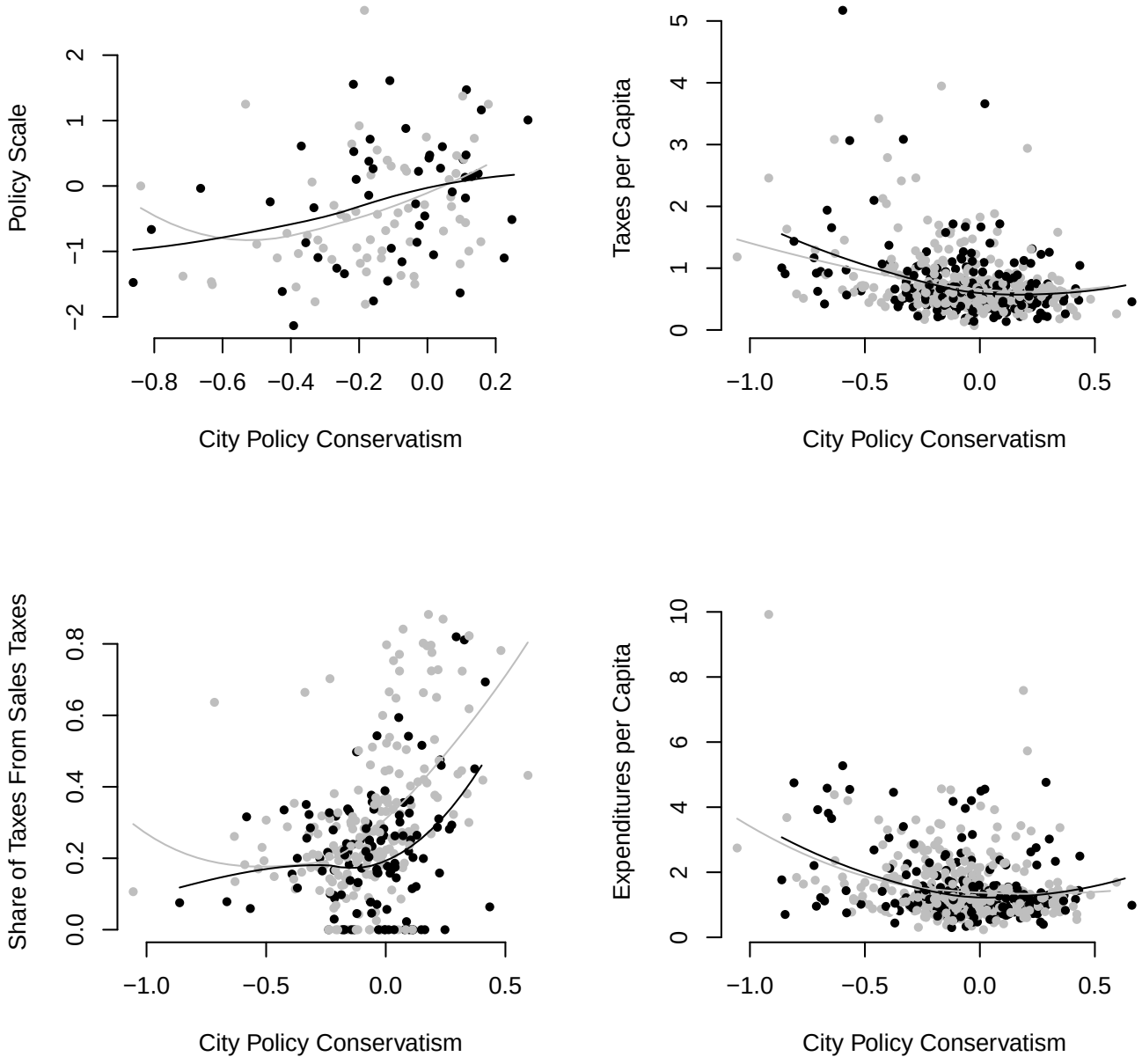

Figure 7: Direct Democracy

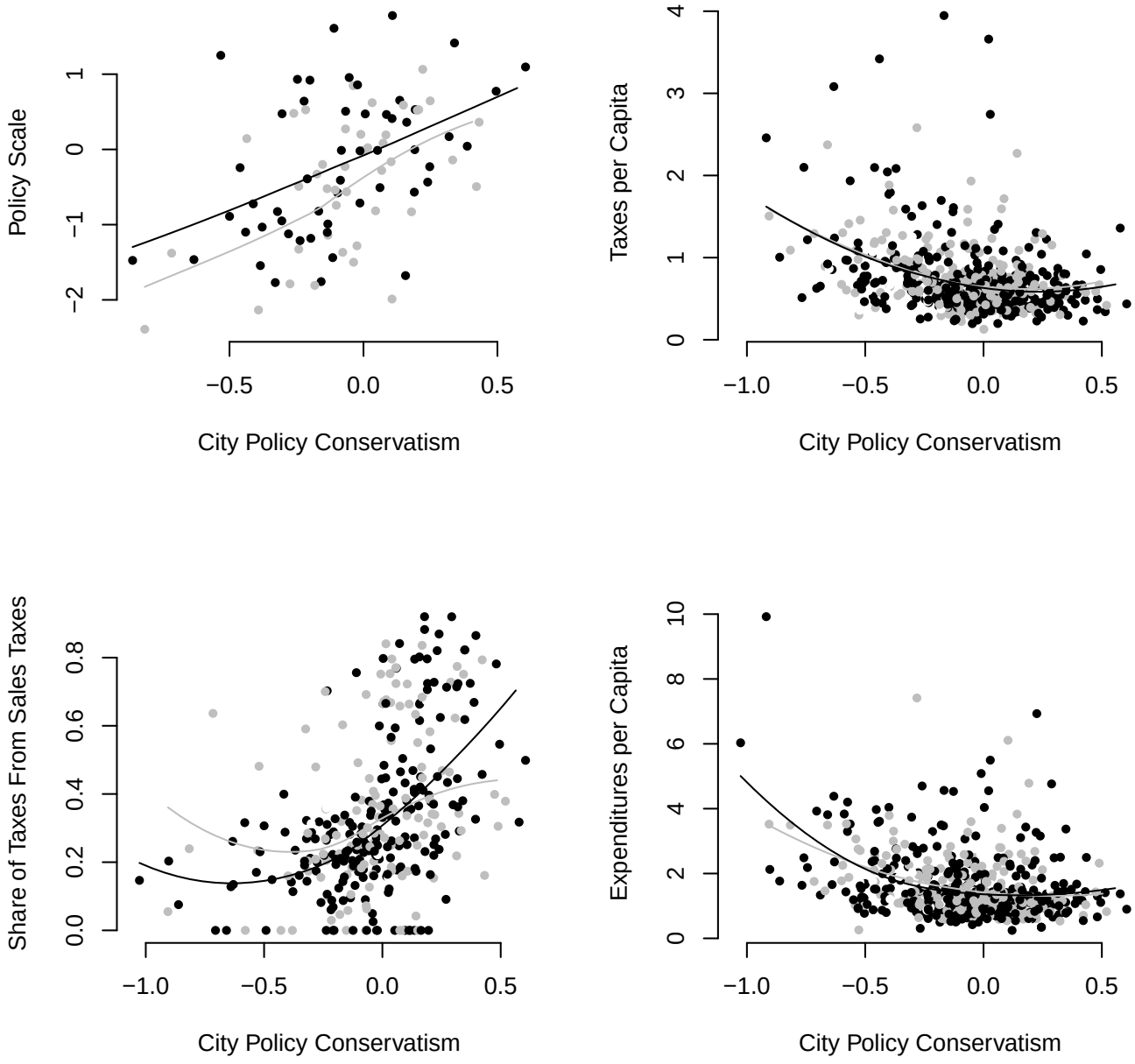

Figure 8: Term Limits

A MRP Model of City Policy Conservatism

We estimate municipal policy preferences by combining our large dataset of citizens' ideal points with a multilevel regression and poststratification (MRP) model (Park, Gelman, and Bafumi, 2004; Lax and Phillips, 2009). This approach employs Bayesian statistics and multi-level modeling to incorporate information about respondents' demographics and geography in order to estimate the public opinion of each geographic sub-unit (see Jackman 2009; Gelman and Hill 2006 for more about multi-level modeling). One way of thinking about an MRP model is to compare it to a weighted survey estimate that applies very finely tuned weightings, based on Census data, of specific demographic-geographic types. It estimates each individual's response as a function of both demographic and geographic predictors. MRP models have been found to produce very accurate estimates of public opinion by state and congressional district with national samples of just a few thousand respondents (Park, Gelman, and Bafumi, 2004; Lax and Phillips, 2009; Warshaw and Rodden, 2012)

There are two stages to the MRP model. In the first stage, we estimate each individual's opinion on a given issue as a function of his or her demographics, city, and state (for individual i, with indexes r, g, e, c, p, s, and z for race, gender, education category, city, poll-year, state, and region, respectively). We incorporate this information using the following hierarchical model for respondent's responses:

$$\begin{aligned} y_i = \gamma_0 + \alpha^{race}_{r[i]} + \alpha^{gender}_{g[i]} + \alpha^{edu}_{e[i]} + \alpha^{city}_{c[i]} + \epsilon \\ \text{where:} \\ \alpha^{race}_{r[i]} \text{ for r} = 1, \ldots, 4 \\ \alpha^{gender}_{g[i]} \text{ for r} = 1,2 \\ \alpha^{edu}_{e[i]} \text{ for e} = 1, \ldots, 5 \end{aligned} \tag{1}$$

That is, each individual-level variable is modeled as drawn from a normal distribution with mean zero and some estimated variance. Following previous work using MRP, we assume that the effect of demographic factors do not vary geographically. We allow geography to enter into the model by adding a city level to the model, and giving each city a separate intercept.

The city effects are modeled as a function of the state into which the city falls, the city's average income, the percentage of the city's residents that are military veterans, and the percentage of couples in each city that are in same-sex couples. The state effects, in turn, are modeled as a function of the region into which the state falls, the percentage of the state's residents that are union members, and the state's percentage of evangelical or Mormon residents. Finally, the region variable is another modeled effect. We group states into regions based on their general ideology and vote in presidential elections.

The second stage is post-stratification. In this stage, we use the multi-level regression to make a prediction of public opinion in each demographic-geographic sub-type. The estimates for each respondent demographic geographic type are then weighted by the percentages of each type in the actual city populations. Finally, these predictions are summed to produce an estimate of public opinion in each city.

B Dimensionality of City Policy Preferences

The central claim of our paper is that citizen policy preferences writ large play an important role in city government. However, understanding what these policy preferences consist of is itself an important research question. In particular, scholars of municipal politics have often highlighted the fact that cities consider issues that are different from the sorts of policy issues that are considered at the federal level (Oliver, Ha, and Callen, 2012). At the same time, the municipal level is not entirely different from the federal level: there is issue overlap, the political parties are the same, and citizens tend to have low levels of information on average about the specifics of municipal policy. As a result, citizens may or may not think about city policy differently than they think about federal policy. The policy preferences they bring to bear in deciding who to choose for mayor or city councilor may or may not be quite different than the policy preferences they bring to bear in deciding who they should support for President or Senator.

In order to examine the structure of preferences over municipal and federal policy, we asked a battery of federal policy questions and a battery of questions that was oriented towards state and local politics on the 2012 Cooperative Congressional Election Study. 14 questions were asked about local politics, and 31 questions were asked about federal politics, some of which we devised, and others of which were part of the "common content" questions asked on all surveys in the CCES. Table 4 shows the set of questions that will be used in this analysis.

Table 4: Survey Questions used for Scaling City and Federal Preferences

Label	**Classification**	**Question Summary**
ucm321	Municipal	City provide health benefits to the same-sex partners of its employees
ucm322	Municipal	City take action to reduce its greenhouse gas emissions in order to help address climate change
ucm323	Municipal	City subsidize mass transit for low-income people
ucm324	Municipal	City provide subsidies and incentives for residents to install solar energy on their house
ucm325	Municipal	City ban smoking in bars and restaurants
ucm326	Municipal	City require residents to recycle aluminum cans and glass bottles
ucm327	Municipal	City reduce pensions for government employees
ucm328	Municipal	City give tax breaks to businesses that move to your town
ucm329	Municipal	City limit how much landlords can raise their tenants' rent each year
ucm330	Municipal	City offer subsidized housing to the homeless
ucm331	Municipal	City eliminate tenure (lifetime employment) for school teachers
ucm332	Municipal	City close parks to save money
ucm333	Municipal	City close libraries to save money
ucm358	Municipal	Do you think that your city or town should get most of its revenue from sales taxes or property taxes?
ucm301	Federal	The U. S. government guaranteeing health insurance for all citizens
ucm302	Federal	The government passing new rules to protect the right of workers to unionize.
ucm303	Federal	The federal government trying to reduce the income differences between rich and poor Americans.
ucm304	Federal	Reducing government regulation of the private sector.
ucm305	Federal	Raising the minimum wage to 10 dollars.
ucm306	Federal	Allowing corporations the right to spend unlimited amounts of money supporting and opposing candidates for office. (This is currently allowed.)
ucm307	Federal	Allowing drilling for oil and gas in the Arctic National Wildlife Refuge in Alaska.
cc322-1	Federal	Grant legal status to all illegal immigrants who have held jobs and paid taxes for at least 3 years
cc322-2	Federal	Increase the number of border patrols on the US Mexican border.

Table 4: Survey Questions used for Scaling City and Federal Preferences

Label	Classification	Question Summary
cc322-3	Federal	Allow police to question anyone they think may be in the country illegally.
cc322-4	Federal	Fine US businesses that hire illegal immigrants.
cc322-5	Federal	Prohibit illegal immigrants from using emergency hospital care and public schools.
cc322-6	Federal	Deny automatic citizenship to American-born children of illegal immigrants.
cc305	Federal	All things considered do you think it was a mistake to invade Iraq?
cc306	Federal	All things considered do you think it was a mistake to invade Afghanistan?
cc320	Federal	In general do you feel that the laws covering the sale of firearms should be made more strict less strict or kept as they are?
cc324	Federal	Which one of the opinions on this page best agrees with your view on abortion?
cc325	Federal	Environment v Jobs
cc326	Federal	Do you support a Constitutional Amendment banning Gay Marriage?
cc327	Federal	Do you support or oppose affirmative action?
cc328	Federal	What would you most prefer that Congress do - cut domestic spending, cut defense spending or raise taxes?
cc332a	Federal	Support or oppose: The American Recovery and Reinvestment Act
cc332b	Federal	Support or oppose: State Children's Health Insurance Program
cc332c	Federal	Support or oppose: American Clean Energy and Security Act
cc332d	Federal	Support or oppose: Comprehensive Health Reform Act
cc332e	Federal	Support or oppose: Appoint Elena Kagan to the Supreme Court
cc332f	Federal	Support or oppose: Financial Reform Bill
cc332g	Federal	Support or oppose: End Don't Ask Don't Tell
cc332h	Federal	Support or oppose: Foreign Intelligence Surveillance Act
cc332i	Federal	Support or oppose: Embryonic Stem Cell Research
cc332j	Federal	Support or oppose: Troubled Asset Relief Program

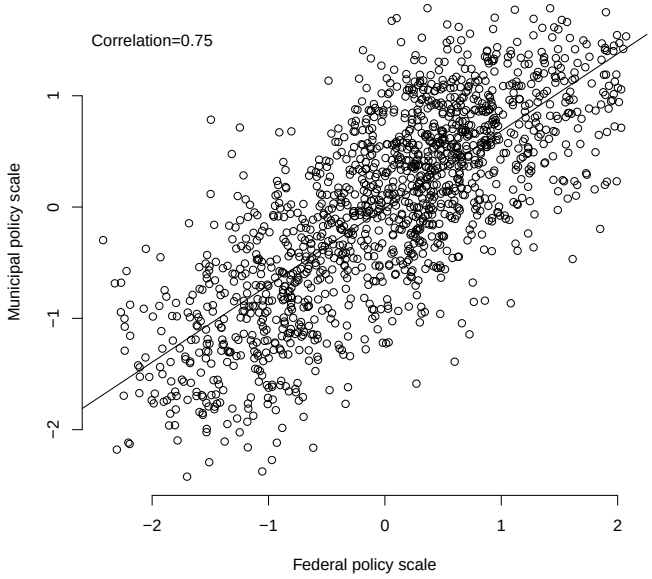

Figure 9: Correlations between Municipal and Federal Scales

In order to examine the degree to which preferences on municipal and federal policy issues are related, we take two approaches. The simpler approach is to create two separate preferences scales from the federal items and the municipal items, respectively, using a one-dimensional two-parameter logistic item response theory model for each scaling, and regress the scores on one scale on the scores from the other. This analysis shows the degree to which the choice of question set affects the result of the scaling. Our preferred, but more complex, approach is to scale all of the questions in a higher dimensional item response model. This model determines the extent to which the individual choices can be better explained by creating distinct preference dimensions for municipal policy items and federal policy items.

Figure 9 shows the results of the first analysis. For each individual, the x-axis represents that individual's position on the policy scale created using only the federal policy items and the y-axis represents that individual's position on the scale that uses only municipal items.

There are very few points in the top left and bottom right of the graph, indicating that people who are municipal liberals and federal conservatives, or vice versa, are very rare. Overall the relationship between these two scales is quite strong, with a correlation of .75. However, there is considerable error. This is not unexpected, because there is measurement error in each scale individually. In particular, there are fewer items in the municipal policy scale, and as we will see shortly, these items are noisier than the federal policy items on average.

For our second analysis, we run a 4-dimensional model pooling all of the Federal and Municipal items. Our expectation is that if municipal items are determined by a logic different from federal items, then the model will attempt to explain these responses by assigning municipal items and federal items to distinct dimensions. We choose 4 dimensions to avoid the possibility that higher dimensionality within the federal or municipal items will obfuscate differences between them.

Table 5 shows the results. In particular, we report the absolute values of the discrimination parameters (Beta) of the municipal policy items, and the averages and maximum values for all of the items. The discrimination parameters indicate the degree to which particular items are informative with respect to respondent positions on particular policy dimensions. As expected, the first dimension has the highest discrimination, with much lower discrimination for higher dimensions. For each dimension, the highest discriminating item is always a Federal policy item. In most cases, the municipal policy items have lower average discrimination, except for the second dimension, on which the municipal items are just slightly more discriminating (an average of .58 versus .45). We can find no evidence that any dimension is characterized by higher discrimination for municipal policy items than other items.

Table 5: Item Parameters

Item	Beta1	Beta2	Beta3	Beta4
Mean (All)	1.12	0.45	0.31	0.39
Max (All)	4.1	2.02	1.37	5.22
ucm321	1.28	1.37	0.33	2.32
ucm322	1.37	0.67	0.48	0.22
ucm323	0.59	0.77	0.2	0.11
ucm324	0.75	0.74	0.49	0.19
ucm325	0.31	0.11	0	0
ucm326	0.44	0.76	0.37	0.32
ucm327	0.8	0.68	0.44	0.48
ucm328	0.49	0.88	0.38	0.35
ucm329	0.45	0.43	0.27	0.17
ucm330	0.7	0.59	0.06	0.03
ucm331	0.88	0.68	0.35	0.59
ucm332	0.47	0.18	0.02	0.18
ucm333	0.47	0.27	0.09	0.25
ucm358	0.29	0.02	0.04	0.19

On balance, Table 5 shows variation in the discrimination of particular policy items, but no evidence that separate forces are at work in determining citizens' positions on municipal policy questions and federal policy questions. Two questions that stand out for high discrimination are question 321, about benefits for same-sex partners who are municipal employees, and 322, about whether or not the city should take action to reduce greenhouse gas emissions. We might suppose that these questions are less noisy precisely because they are linked to high profile federal and state policy issues. In contrast, some issues that seem uniquely local, such as 332 and 333, about closing parks and libraries, or 358, about the proper mix of sales and property taxes, are particularly noisy on all dimensions. This finding is consistent with the belief in the literature that citizens are poorly informed about matters of local policy. This may help explain why the residuals in Figure 9 can be large.

Overall, for this set of questions, it looks like questions of municipal policy are determined

by the same underlying values, attitudes and predispositions as questions of federal policy. But the qualifier "for this set of questions" is an important one. Our survey is one of the first that we know of to ask a national sample a battery of questions about local policy. Our choices of questions were rather arbitrary, biasing towards policies that we ourselves are familiar with. Future research should explore the extent to which we have captured the "key issues" or local policy. For instance, Oliver, Ha, and Callen (2012) suggests that land use policy is one of the dominant items on the agenda in local politics, and yet we have not asked any questions about land use policy. If citizens have preferences about, say, zoning and eminent domain that are strongly held and distinct from their preferences over federal policies, the current analysis would not capture this distinction.

C Questions Used to Estimate City Policy Scale

Table 6 below lists the questions asked on the 2010 International City/County Management Association sustainability survey that were used to create our index of the overall conservatism of city policy. Each set of items is preceded by a prompt such as "Please indicate which of the following actions your locality has taken related to sustainability, energy conservation, resilience, climate change, emissions reductions, or similar concerns in your community" or "Please indicate which of the following programs your local government has." If the government implements a policy that item is coded as 1, otherwise it is coded as 0.

Table 6: ICMA items that went into our scale of city policies

Question	**Text**
1a	To what extent are the following a priority in your jurisdiction? The environment
1b	To what extent are the following a priority in your jurisdiction? The economy
1c	To what extent are the following a priority in your jurisdiction? Social justice
1d	To what extent are the following a priority in your jurisdiction? Climate change
1e	To what extent are the following a priority in your jurisdiction? Green jobs
1f	To what extent are the following a priority in your jurisdiction? Energy conservation
1g	To what extent are the following a priority in your jurisdiction? Housing for all income groups
1h	To what extent are the following a priority in your jurisdiction? Public transit
2a	Adoption by the governing body of a resolution stating policy goals. (Regarding sustainability)
2b	Adoption by the governing body a plan with specific targets or benchmarks.
2c	Establishment of a sustainability policy and/or plan by the chief executive.
2d	Appointment of a citizens committee & commission & or task force.
2e	Provided a budget specifically for the sustainability effort
2f	Dedicated staff to the sustainability effort
4a	Baseline greenhouse gas emissions of the local government
4b	Baseline greenhouse gas emissions of the community
4c	Greenhouse gas reduction targets for local government operations
4d	Greenhouse gas reduction targets for businesses
4e	Greenhouse gas reduction targets for multi-family residences
4f	Greenhouse gas reduction targets for single-family residences
4g	Locally initiated air pollution measures to reduce dust and particulate matter
4h	Plan for tree preservation and planting
5a	Tree City USA designation

Table 6: ICMA items that went into our scale of city policies

Question	Text
5b	EPA Smart Growth Achievement Award
5c	Phoenix Award for Brownfields Redevelopment
5d	Historic Preservation Merit Awards
5e	Other sustainability award
6a	Actions to conserve the quantity of water from aquifers
6b	Use of grey-water and/or reclaimed-water use systems
6c	Sets limits on impervious surfaces on private property
6d	Use water price structure to encourage conservation
6e	Other incentives for water conservation behaviors by city & residents & and businesses
7a	Internal program that recycles paper and plastic and glass in your local government
7b	Community-wide recycling collection program for paper and plastic and glass for residential properties
7c	Community-wide recycling collection program for paper and plastic and glass for commercial properties
7d	Recycling of household hazardous waste
7e	Recycling of household electronic equipment (e-waste)
7f	Pay-As-You-Throw (PAYT) program with charges based on the amount of waste discarded
7g	Community-wide collection of organic material for composting
7h	Require minimum of 30% post-consumer recycled content for everyday office paper use
8a	Established a fuel efficiency target for the government fleet of vehicles
8b	Increased the purchase of fuel efficient vehicles
8c	Purchased hybrid electric vehicles
8d	Purchased vehicles that operate on compressed natural gas (CNG)
8e	Installed charging stations for electric vehicles
8f	Conducted energy audits of government buildings
8g	Installed energy management systems to control heating and cooling in buildings
8h	Established policy to only purchase Energy Star equipment when available
8i	Upgraded or retrofitted facilities to higher energy efficiency office lighting
8j	Upgraded or retrofitted traffic signals to improve efficiency
8k	Upgraded or retrofitted streetlights or and other exterior lighting to improve efficiency
8l	Upgraded or retrofitted facilities to higher energy efficiency heating and air conditioning systems
8m	Upgraded or retrofitted facilities to higher energy efficiency pumps in the water or sewer systems
8n	Utilize dark sky compliant outdoor light fixtures
8o	Installed solar panels on a government facility
8p	Installed a geo-thermal system

Table 6: ICMA items that went into our scale of city policies

Question	Text
8q	Generated electricity through municipal operations such as refuse disposal & wastewater treatment & or landfill
11a	Energy Audit-Individual residences
11b	Weatherization- Individual residences
11c	Heating / air conditioning upgrades- Individual residences
11d	Purchase of energy efficient appliances- Individual residences
11e	Installation of solar equipment- Individual residences
11f	Energy Audit-Businesses
11g	Weatherization-Businesses
11h	Heating / air conditioning upgrades-Businesses
11i	Purchase of energy efficient appliances-Businesses
11j	Installation of solar equipment-Businesses
12a	Take mass transit to work (government incentive?)
12b	Carpool to work (government incentive?)
12c	Walk to work (government incentive?)
12d	Bike to work (government incentive?)
17a	Expanded dedicated bike lanes on streets
17b	Added biking and walking trails
17c	Added bike parking facilities
17d	Expanded bus routes
17e	Requiring sidewalks in new development
17f	Widened sidewalks
17i	Require showers and changing facilities for employees
21a	Require all new government construction projects to be LEED or Energy Star certified
21b	Require all retrofit government projects to be LEED or Energy Star certified
21c	Permit higher density development near public transit nodes
21d	Permit higher density development where infrastructure is already in place (utilities and transportation)
21e	Incentives other than increased density for new commercial development (including multi-family residential) that are LEED Certified or an equivalent
21f	Incentives other than increased density for new single-family residential be LEED certified or the equivalent
21g	Apply LEED Neighborhood Design standards
21h	Provide density incentives for sustainable development (such as energy efficiency & recycling of materials & land preservation & storm water enhancement & etc.)
21i	Provide tax incentives for sustainable development (such as energy efficiency & recycling of materials & land preservation & storm water enhancement & etc.)
21j	Reduce fees for environmentally friendly development
21k	Fast track plan reviews and or inspections for environmentally friendly development
21l	Residential zoning codes to permit solar installations & wind power & or other renewable energy production

Table 6: ICMA items that went into our scale of city policies

Question	Text
21m	Residential zoning codes to permit higher densities through ancillary dwellings units or apartments (such as basement units & garage units & or in-house suites)
21n	Zoning codes encourage more mixed-use development
22a	An active brownfields & vacant property & or other program for revitalizing abandoned or underutilized residential & commercial or industrial lands and buildings
22b	A land conservation program
22c	A program for the purchase or transfer of development rights to preserve open space
22d	A program for the purchase or transfer of development rights to create more efficient development
22e	A program for the purchase or transfer of development rights to preserve historic property
23a	Provide financial support/incentives for affordable housing
23b	Provide supportive housing to people with disabilities
23c	Provide housing options for the elderly
23d	Provide housing within your community to homeless persons
23e	Provide access to information technology for persons without connection to the internet
23f	Provide funding for pre-school education
23g	Provide after-school programs for children
23h	Report on community quality of life indicators & such as education & cultural & diversity & and social well-being
25a	Restriction on purchase of bottled water by the local government
25b	Use of public land for community gardens
25c	Support a local farmer's market
25d	Education program in the local community dealing with the environment and energy conservation
25e	Locate recycling containers close to refuse containers in public spaces such as streets and parks
25f	Green product purchasing policy in local government

D Description of Coarsened Exact Matching Analysis

The analysis of institutions in the paper relies on a matching method called "coarsened exact matching." Coarsened exact matching proceeds by establishing categories for the matching variables, and then dropping all observations in either institutional condition that do not have an exact match in all categories for the other condition. Variables are coarsened by assigning continuous values to a small number of categories for each variable. These categories are defined by a set of thresholds. Cities sharing the same category for some variable are considered "equivalent" for the purposes of the analysis. It is assumed that these cities are substantively similar. Each observation in one condition (treatment or control) is then weighted to reflect any imbalances in the number of treatment and control observations in one strata, a set of observations that have the same values for the coarsened variables. Each matching analysis is performed using all of the variables in Table 7 below, with the exception that the institutional "treatments" are not included in the matching analyses that involve that institution. So, for instance, in the analysis of partisan versus non-partisan elections, cities are not matched on this institution.

Table 7: Matching Variables

Variable	**Thresholds for Coarsening**
Median Home Value	87; 122; 173 (thousands of dollars)
Population	26; 36; 61; 300; 1000 (thousands of people)
Median Income	35; 44; 58 (thousands of dollars)
City Mean Preferences	-0.21; -0.04; 0.12
Partisan Elections	Already dichotomous: Partisan and non-partisan
Government Type	Already dichotomous: Mayoral or Council-Manager
Term Limits	Already dichotomous: Term Limited or not
Initiatives	Already dichotomous: Initiatives allowed or not