

# Cities as Lobbyists\*

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## Abstract

Individual cities are active interest groups in lobbying the federal government, and yet the dynamics of this intergovernmental lobbying are poorly understood. We argue that preference incongruence between city and its parent state government leads to under-provision of public goods, and cities need to appeal to the federal government for additional resources. We provide evidence for this theory using a dataset of over 13,800 lobbying disclosures filed by cities with populations over 25,000 between 1999 and 2012. Income inequality and ethnic fragmentation are also highly related to federal lobbying activities. Using an instrumental variables analysis of earmark and Recovery Act grant data, we show that each dollar a city spends on lobbying generates substantial returns.

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# 1 Introduction

Over the last few decades, an emerging feature of the relationship between the American federal government and its subnational units has been lobbying. According to the 2011 *Washington Representatives* directory, state and local governments make up 12.3% of all organized interest groups that have a presence in national politics, either by maintaining an office in Washington, D.C. or by hiring professional lobbying firms. Between 1981 and 2011, state and local government involvement in national politics increased by 422%, and 1,428 state and local governments have entered the national political scene since 1981 (Schlozman et al. 2015).

Despite the steady increase in state and local government involvement in national politics, we know little about why subnational governments engage in national politics or what their lobbying goals are. In this paper, we tackle two main issues: why some cities lobby the federal government, while others do not; and whether city lobbying makes a difference in terms of federal resource allocation.

We argue that cities have incentive to lobby the federal government when their preference diverges from the preference of their state government, thereby generating a public goods provision problem. The local government is a creature of the state, and its policies are influenced by, shaped by, and reliant on state policies (Frug 1980; Peterson 1981; Briffault 1990).<sup>1</sup> When local demand for public expenditures is not met by a state government and cannot be raised by the city itself, cities have incentive to lobby the federal government for desired resources.<sup>2</sup>

Given that liberal voters have a high demand for public goods provision (Alesina and Glaser 2004; Alesina and Ferrara 2005; Tausanovitch and Warshaw 2014; Einstein and Kogan

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<sup>1</sup>Often, even resources earmarked from the federal government to local governments are allocated by a state government, meaning that the state government exercises its power in over local governments in the allocation of both federal and state resources (Nicholson-Crotty 2004).

<sup>2</sup>This is consistent with the argument that intergovernmental revenues become a valuable supplement to total expenditures at local governments when they have limited ability to generate extra revenues due to budgetary rules (Brooks and Phillips 2010).

2015) and liberal states tend to have a high supply of public goods (Erikson, Wright, and McIver 1993; Brown 1995; Jacoby and Schneider 2001; Barrileaux, Holbrook, and Langer 2002), our theory predicts that the effect of preference divergence on the under-provision of public goods provision will be most pronounced in liberal cities located in conservative states.

We use two estimates to measure the difference between city- and state-level public goods expenditure (a measure we call the *public goods gap*). Using detailed public finance data from the Census of Governments, we first measure the difference between each city's direct expenditure per capita and the concordant state government's direct expenditure per capita. This measure captures the different levels of spending between a city and its state. Second, we measure how much of a city's expenses are covered by the state government by measuring the difference between each city's total direct expenditures per capita and the state government's per capita transfers to each city.

We test our theory by analyzing a novel data set of 13,858 lobbying disclosure reports submitted by 1,262 cities with populations over 25,000 from 1999 to 2012.<sup>3</sup> From both cross-sectional and panel analyses, we find that divergence of preference and its consequences for public goods provision matter: a city's propensity to lobby the federal government between 1999 and 2012 is increasing in the city-state public goods gap. Demographic variables such as ethnic heterogeneity and income inequality are also important determinants of a city's lobbying activities: cities which are more ethnically diverse and unequal in income distribution are more likely to participate in federal lobbying. Their lobbying engagement may help to explain why more ethnically fragmented localities receive higher transfers per capita from higher levels of government, despite their difficulty in providing public goods at the local level (Alesina, Baqir, and Easterly 1999).

After identifying types of cities that engage in federal lobbying, we investigate whether

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<sup>3</sup>We focus on cities with populations over 25,000 because the American Community Survey provides the detailed demographic data for these cities every three years, which allows us to conduct a panel analysis. Also, these cities make up more than 70% of federal lobbying activities by local governments (both in terms of the number of submitted lobbying reports and total spending).

lobbying by local governments makes any difference in terms of federal resource allocation. We collect data on earmarks awarded to cities in fiscal years 2008 and 2009, and grants awarded from the American Recovery and Reinvestment Act of 2009 (the Recovery Act) to cities in fiscal years between 2009 and 2012. The main difficulty in identifying the causal effect of lobbying on federal resource allocation arises from potential reverse causality and joint determination. On the one hand, OLS estimates might be biased upward if cities exert more effort in lobbying when they know they already have a relatively high chance of securing federal resources; on the other hand, if cities exert more effort in lobbying when they are especially desperate to receive earmarks or grants, OLS estimates might be biased downward.

To address this potential endogeneity issue, we exploit data on the existence of a direct flight from the relevant city to Washington, D.C. as an instrumental variable. City lobbying is usually done when city officials travel to Washington, D.C., meet their lobbyists, and lobbyists arrange meetings for city officials with House representatives or Senators from the state where the city is located (Leech 2013). The existence of a direct flight captures the convenience of travel to D.C. from each city. We find that the existence of a direct flight is a highly statistically significant, positive, and substantively large correlate of lobbying expenditures, after conditioning on demographic variables and distance to Washington, D.C.<sup>4</sup> The instrumental variable regression results suggest that a one percent increase in lobbying spending increases the amount of earmarks and Recovery Act grants by 94% and 41%, respectively.<sup>5</sup>

We make a number of contributions to the research literature. First, we provide the most comprehensive information on lobbying activities by local governments yet presented

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<sup>4</sup>We provide multiple robustness checks for the instrument, using within-city variation in terms of a direct flight to Washington, D.C. as well as a flight fare changes, in Appendix D.

<sup>5</sup>These large returns are partly due to the relatively small amount of lobbying spending relative to the size of government grants. Also, the instrumental variable analysis captures the local average treatment effect (LATE); that is, the IV estimates capture the effect of lobbying spending on earmarks and Recovery Act grants among ‘complier’ cities (cities that changed their lobbying participation and/or lobbying spending level due to a direct flight to Washington D.C.) The IV estimate is uninformative for cities always lobbied or never lobbied during the study period. (Angrist and Pischke 2009).

in the literature by constructing using a novel dataset of lobbying reports. Despite their intense activities, governments as interest groups have received little attention from scholars as important players in the lobbying landscape (Loftis and Kettler 2015). Second, we contribute to the understanding of how and why localities communicate their preferences to the federal government, adding a specific communication incentive and mechanism to the basic structure of intergovernmental relations under federalism (Volden 2005). Third, we provide empirical support for the theory that some cities are systematic losers in distributive politics as a result of their political preference incongruence created by geography (i.e., Dixit and Londregan 1998). Finally, we provide empirical evidence for the returns to lobbying and show that lobbying by local governments is an important factor affecting the allocation of federal resources.

## **2 Preference Incongruence and Local Public Goods Provision**

To understand why cities lobby the federal government, it is important to examine both the demand and the supply of local public goods. The determinants of citizen preferences for government redistribution are well-studied. Material interests and political ideology are two important predictors of voter policy preferences (Alesina and Glaser 2004; Alesina and Ferrara 2005; Brunner, Eric, and Washington 2011; Margalit 2013). Community-level characteristics also seem important; in particular, ethnic heterogeneity at the level of the town or village has been identified as a determinant of relatively lower demand for public goods provision (Easterly and Levine 1997; Alesina, Baqir, and Easterly 1999; Luttmer 2001; Habyarimana et al. 2007; Dahlberg, Edmark, and Lundqvist 2012).

Numerous articles also investigate how the structure of federalism affects public goods provision at the local level (Oates 1999; Persson and Tabellini 1996; Dixit and Londregan 1998; Inman and Rubinfeld 1997; Knight 2002; Cremer and Palfrey 2000; Volden 2005;

Cremer and Palfrey 2006; Hafer and Landa 2007). Federalism has a unique effect on local public goods provision in the U.S. because the interaction between the federal government and local governments is often mediated through state governments, and so, depending on the preference alignment between state and local governments, some local governments are better off than others under federalism than they might be under a hypothetical unitary system.

Heterogeneity in local public goods provision has generated academic debate since at least Tiebout (1956). A large literature explores the variation in local public goods provision; most recently, Tausanovitch and Warshaw (2013, 2014) have empirically established the link between citizen policy preferences at the state and local level and enacted expenditures and taxation policies, and state legislative voting. Because policy is not just made at the local level, however, citizen preferences, by construction, cannot translate perfectly to available public goods. Indeed, Ferreira and Gyourko (2009) find that mayoral partisan affiliation does not affect the allocation of local public spending, though Gerber and Hopkins (2011) find that the party affiliation of a city's mayor makes a difference in policy areas, such as public safety, where local discretion is high. State governments set priorities for their own budgets and for the allocation of certain federal grants (Nicholson-Crotty 2004), and so cities cannot always meet their own voters' public goods preferences.

What types of cities will suffer most from a preference mismatch with their parent states? Given that liberal voters have a higher demand for public goods provision than conservative voters and liberal states tend to have a high supply of public goods relative to conservative states, it is not a stretch to predict that liberal cities in conservative states face an under-supply of public goods relative to their ideal points. When cities face under-provision of public goods, they face a choice between three non-mutually exclusive solutions: (1) adjust their spending or increase revenues, (2) lobby the state government, and (3) lobby the federal government.

It is well established that cities are limited in their discretion in fiscal policy. Most city

revenue comes either from state aid, which is determined by pre-existing formulas (Campbell 2013), or from property taxes, which are largely determined by real estate markets (Alm, Buschman, and Sjoquist 2011; Doerner and Ihlanfeldt 2011; Lutz, Molloy, and Shan 2011). The ability to raise revenue from other taxes, such as income and sales taxes, is largely determined by state laws that permit or forbid their use (Case and Rosen 1993). The second option, lobbying the state government, could be a feasible option in some states if there is a positive chance that cities could get what they want from their state governments. For example, it is reported that local governments in California regularly spend tens of millions to lobby the state government (Myers 2015). Cities almost surely believe they are more likely to receive aid from their state government when issue priorities are similar between them and their state governments and when Democrats rule the state legislature. For liberal cities in conservative states, however, these conditions are rarely met. Thus, these cities have a stronger incentive to lobby the federal government for additional resources than other types of cities, due to constraints on other options.<sup>6</sup>

### 3 Data and Stylized Facts

The Lobbying Disclosure Act (LDA), enacted in 1995 and reformed in 2007, requires that interest groups file lobbying disclosure reports that provide specific information about their lobbying activities. A lobbying report includes information on the client who paid for the lobbying, the registrant who provided the lobbying, expenditures, and the period of the lobbying activity. A quarterly lobbying report specifies the issue areas and any specific legislation that was lobbied for.<sup>7</sup>

Between 1999 and 2012, government entities submitted 42,154 lobbying disclosures.<sup>8</sup> The

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<sup>6</sup>This does not mean that conservative cities in liberal states, another type that experiences an ideological mismatch, do not lobby. Citizens in red cities located in blue states may want as many public goods as the citizens in blue cities in red states (Sears and Citrin 1982), but what distinguishes them is the state level support for provision of public goods, which will be higher in liberal than conservative states.

<sup>7</sup>Appendix F shows an example of a lobbying report.

<sup>8</sup>See Appendix A for a description of data sources.

governments that submitted lobbying disclosures include cities, counties, towns, school districts, state governments, associations of institutions, and associations of individuals who work as government officials. State governments submitted 2,784 of these reports. Associations of institutions, such as the National Association of Towns & Townships, submitted 454 of these reports.<sup>9</sup>

In this study, we use federal lobbying disclosures submitted by cities with populations greater than 25,000 between 1999 and 2012 (the 106th through 112th Congresses).<sup>10</sup> Of the 1,262 U.S. cities with populations greater than 25,000 which we analyze, 541 cities submitted at least one lobbying report, and 721 did not submit any lobbying reports. In total, these cities submitted 13,858 lobbying reports and spent over \$367 million (in 2012 dollar terms) over this fourteen-year period.<sup>11</sup> Lobbying participation and expenditures rose from 1999 until 2009 and have declined since, which is consistent with the 2010 earmark ban. 97.2% of the reports were submitted by contract lobbying firms, and just 2.8% by a city's own lobbyists.

Table B.3 presents the summary statistics on lobbying activities for the top 20 cities in terms of total lobbying expenditure. New Orleans is ranked at the top in terms of total lobbying spending, having hired 20 lobbying firms, submitted 189 disclosures, and spent over \$7.3 million over the study period.<sup>12</sup> Over the study period, 119 cities spent more than \$1 million, 35 cities spent more than \$2 million, and among the 541 cities that submitted at least one lobbying report, the mean lobbying spending was \$679,139.

When cities submit lobbying reports, they are required to disclose general and specific

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<sup>9</sup>This lack of lobbying activities by associations is surprising, given the scholarly focus on associations of governments as key players in intergovernmental lobbying (Haider 1974; Hays 1991; Cammisa 1995; Dinan 1997; Flanagan 1999).

<sup>10</sup>The total number of cities with population more than 25,000 is 1,451 but some cities do not have their own public finance information because their governments do not have authority to collect revenues and disburse expenditures by themselves. These cities are dropped from the sample because the Census of Governments does not have information on their public finances. The number of cities in the final sample is 1,262.

<sup>11</sup>Table B.2 presents the yearly pattern of lobbying frequency and spending.

<sup>12</sup>Although this is largely due to post-Katrina reconstruction needs, Governor Bobby Jindal and the state legislature cut income taxes, reduced education spending, and laid off state and local bureaucrats beginning in 2008 (Lowrey 2016).



issue areas, and one lobbying report will typically include more than one issue area. Among 13,858 lobbying reports, 4,789 mentioned budget issues. After budget issues, the most commonly mentioned issues include transportation, urban development, and the environment. During our study period, the American Recovery and Reinvestment Act (HR 1, 111th) was the most targeted piece of legislation, followed by the Hiring Incentives to Restore Employment Act (HR 2847, 111th). Appropriations bills were the most frequently targeted legislation. Lobbying reports can also specify targeted offices, and indeed almost 5,000 lobbying reports mentioned that they targeted the Senate and the House. The Department of Transportation is ranked third, followed by the Army Corps of Engineers.<sup>13</sup>

For each city in our sample, we collect demographic, public finance, and political variables which could also affect a city’s decision to lobby the federal government. Demographic data were collected from the decennial Census and American Community Surveys. Public finance data, both at the city and state level, was collected from the Census of Governments. City- and state-level revenue and expenditure data allow us to divide revenue into intergovernmental revenue and own-source based revenue, as well as dividing expenditures into different substantive categories. To assign political variables, we match each city into a congressional district and a state.<sup>14</sup> We then collect party affiliation, committee assignments, vote shares, and DW-Nominate scores of the House Representatives and Senators who represent each city. Measures for city, congressional district, and state-level liberal-conservative ideology were drawn from Tausanovitch and Warshaw (2014).<sup>15</sup> We also collect party affiliation of the governor and state legislature information, including majority party in each chamber, and state legislator ideal points developed by Shor and McCarthy (2011).

Table C.3 presents summary statistics for key demographic, political, and public finance

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<sup>13</sup>Table B.4 presents the top ten most frequently mentioned issues, most mentioned bills, and the most targeted agencies.

<sup>14</sup>We first match each city with a county and then use the county-congressional district matching data from the Census Congressional District Relationship Files. If a city has multiple districts, we take a mean value of the variable of interest.

<sup>15</sup>Tausanovitch and Warshaw (2014) construct the comparable ideology measure for cities, congressional districts, and states from analysis of survey data using multilevel regression with poststratification (MRP). We also use 2008 presidential vote share to measure city and state ideology as a robustness check.

variables for cities that did and did not lobby during the study period. We systematically investigate how each variable is associated with a city’s lobbying activity in Section 4.

## 4 Which Cities Lobby the Federal Government?

We test our hypothesis with a sample of 1,262 cities with populations greater than 25,000. We are interested in finding demographic, political, and local public finance variables which are associated with a city’s lobbying activities – both lobbying participation and lobbying spending. In particular, we are interested in how preference divergence and the consequential gap in local expenditures and parent state’s support for public goods is related to a city’s decision to lobby the federal government.

Before we move into a full empirical analysis, we present a simple  $2 \times 2$  matrix in Table 1 that illustrates our hypothesis. We divide states into ‘blue’ states and ‘red’ states depending on state ideology scores, and divide cities into ‘blue’ cities and ‘red’ cities depending on city ideology scores.<sup>16</sup> Lobbying participation is defined as whether a city submitted at least one lobbying report during the time period between 1999 and 2012, and lobbying expenditures are calculated as the average of total annual spending per city during the study period.

As Table 1 shows, blue cities in red states were the most likely of the four city categories to participate in lobbying the federal government – almost 56% of the cities in this category submitted at least one lobbying report, whereas only 38% of the red cities in red states did so. Lobbying expenditures show the same pattern: while blue cities located in red states spent on average \$635,324 over the 14 studied years, red cities in red states spent on average \$196,734 during the same period. As we expect, despite their preference divergence, red cities located in blue states are less likely to lobby and to spend than blue cities in red states, since they do not experience the same public goods provision problem as their counterparts. The results

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<sup>16</sup>Cities and states are defined as blue if their ideology score from Tausanovitch and Warshaw (2014) is less than the median city and state ideology (-0.0393 and 0.0601, respectively) and red cities and states are defined if their ideology is greater than the median state ideology. The results are similar if we use the mean value as a cutoff or if we use the 2008 presidential vote share to divide cities and states into  $2 \times 2$  table.

suggest that preference divergence and its consequences for local public goods provision are closely related to the lobbying activities of municipal governments.

Table 1: Lobbying Participation and Expenditures by Types of Cities

Type	Participation (%)		Expenditures (\$K)	
	Blue States	Red States	Blue States	Red States
<b>Blue Cities</b>	42.88	55.67	242.1	635.3
<b>Red Cities</b>	44.68	37.82	225.0	196.7

The data structure is as follows. For each city in the sample, we collect annual lobbying activity, demographic, political, and local public finance information. While lobbying activity is time-variant, some variables are not available annually. For demographic variables, the Decennial Census is released every ten years, and the American Community Survey provides detailed information for areas with a population of 20,000 more for every three-year interval since 2005. For local public finance data, the Census of Governments is available at 5-year intervals, and therefore during the period of study, local public finance data are available for the years 2002, 2007, and 2012. Therefore, we extrapolate values of demographic and finance variables in available years to previous years, given the assumption that demographic and local finance conditions do not radically change within a 3 to 4 year period. For example, we assign values from 2002 surveys to 1999, 2000, and 2001, we assign values from 2007 surveys to the years between 2002 and 2006, and we assign values from 2012 to the years between 2008 and 2011. This panel data structure allows us to examine both variation over units and variation over time.

Our main interest is variation across units, so we start with a pooled OLS regression for lobbying activities using data for all cities in all years. The basic specification is:

$$Y_{ist} = \beta D_{ist} + \Gamma \mathbf{X}_{ist} + \lambda_t + \varepsilon_{ist} \quad (1)$$

, where  $i$  indicates a city,  $s$  indicates a state, and  $t$  indicates the year.  $D_{ist}$  is a measure of divergence between a city’s public goods provision and its state government’s public goods provision. To directly capture this variation, we use expenditure data from the Census of Governments. We first measure the difference between each city’s direct expenditure per capita and the concordant state government’s direct expenditure per capita. This measure captures the different levels of spending between a city and its state. Second, we measure how much of a city’s expenses are covered by the state government by measuring the difference between each city’s total direct expenditures per capita and per capita state government transfers to each city.<sup>17</sup>

$X_{ist}$  is a vector that includes various control variables such as a city  $i$ ’s demographic, state and local public finance, and political variables.<sup>18</sup> These variables, which include population, land area, water area, age distribution, median and per capita income, unemployment and poverty rates, city and state ideology measures,<sup>19</sup> shares of local revenue coming from the federal and state governments and property and sales taxes, as well as measures of local expenditures per capita, are intended to take account of factors which could influence a city’s decision to lobby.  $\lambda_t$  indicates year fixed effects to capture any time specific trend, such as recession.<sup>20</sup> Finally,  $Y_{ist}$  indicates a city’s lobbying activity (which has two different values

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<sup>17</sup>To measure divergence, we use the actual public goods provision gap, instead of the ideological difference between a city and its state. Our theory suggests that cities which are liberal relative to their states tend to have relatively more severe public goods provision problems, and will thus be more likely to lobby the federal government, unless they are able to raise their own revenue or appeal to the state government for assistance. Of course, it is there are variables predicting the real public goods gap other than the ideology gap between the city and the state, but we show in Table D.1 in Appendix D that the ideological gap is a statistically significant and substantively large predictor of the public goods gap, conditional on relevant demographic and fiscal variables.

<sup>18</sup>Summary statistics for these variables are in Appendix C.

<sup>19</sup>Because the ideology measures for cities and states are such a crucial element of our analysis, we explain them briefly here. To construct city, county, and state-level ideology measures, Tausanovitch and Warshaw (2014) asked identical policy questions to those asked on the 2006, 2007, 2008, 2010, and 2011 CCES and the 2000 and 2004 ANES to a 1,300-respondent module of the 2010 CCES. The common questions allowed the authors to place all the respondents to the same questions on the previous surveys onto a common preference scale. They use an item-response theory model to construct respondent ideal points, and then multilevel regression to model each response as a function of demographic and geographic covariates. Finally, they use poststratification and weighting to predict public opinion for each demographic-geographic unit. This strategy is especially well-suited to our purposes because it means that city and state preferences come from the same scale and as such are directly comparable.

<sup>20</sup>We do not include state fixed effects in this analysis because our main interest is how different cities

in the different regression specifications: whether the city lobbied the federal government, and how much the city spent on lobbying).<sup>21</sup>

Table 2 presents the results from pooled logit analysis for lobbying participation and Tobit analysis for lobbying spending. Columns (1) and (2) show the results for whether a city engaged in lobbying in a given year. Columns (3) and (4) report the results on annual lobbying spending. We use two different measures of the public goods gap, so columns (1) and (3) show the results when we use the first measure (city’s direct expenditure per capita minus state government direct expenditure per capita), and columns (2) and (4) present results that use the second measure (city direct expenditure per capita minus per capita expenditure from state government transfers). The results are similar with the two measures.

Our results demonstrate that divergence between city and state public goods provision is a highly significant predictor of whether a city participated in federal lobbying or not, and how much it spent on lobbying, during the study period, using both measures of the public goods gap. Cities that have a greater gap between local level expenditure and state level support are significantly more likely to lobby the federal government than cities whose divergence in public goods provision with states is lower, after conditioning on other demographic, political and public finance variables. Specifically, a \$1,000 increase in the difference between a city’s general expenditure per capita and the state government’s general expenditure per capita is associated with a 28.9% increase in the probability of lobbying the federal government and a 230.1% increase in lobbying spending.<sup>22</sup>

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located in different states behave in federal lobbying. Including state fixed effects would limit the comparison only to cities within the same state. In the panel analysis, we present a result from a city-fixed effect model that controls unobservable but time-invariant city level characteristics.

<sup>21</sup>Because lobbying spending is skewed, we log transform the variable. Positive lobbying spending is only observed if a city decides to participate in lobbying process. If we were interested in what determines lobbying spending, conditional on participation, we could use a Heckman selection model; however, our main interest here is to find factors that affect lobbying activities across cities. Like a binary variable of lobbying participation, lobbying spending is a measurement of a city’s lobbying activity. Therefore, we do not use a Heckman selection model, and instead we use Tobit analysis to deal with the censored observations.

<sup>22</sup>The average annual lobbying spending by municipal governments in our sample is \$18,284, meaning a \$1000 increase in the city-state per capita expenditure gap is associated with an increase from that average to \$42,071.

Table 2: City Characteristics and Lobbying Activities

Variable	Lobbying Participation		(ln) Lobbying Spending (\$)	
	(1)	(2)	(3)	(4)
Public Goods Gap (\$)	0.289*** (3.97)	0.136** (2.03)	2.301*** (5.49)	0.984** (2.09)
Population (K)	0.00113 (0.54)	0.00125 (0.53)	0.00134 (0.58)	0.00241 (0.98)
Land Area (K sq.miles)	3.164 (0.95)	3.153 (0.67)	19.83*** (3.28)	15.99** (2.39)
Water Area (K. sq.miles)	2.242 (0.63)	3.328 (0.82)	-14.72 (-0.53)	-10.87 (-0.36)
Senior (%)	-0.0436*** (-2.67)	-0.0407** (-2.43)	-0.355*** (-3.08)	-0.332*** (-2.84)
Student (%)	0.0503** (2.45)	0.0466** (2.23)	0.489*** (3.27)	0.457*** (3.01)
Ethnic Heterogeneity	1.557*** (3.41)	1.687*** (3.67)	13.12*** (4.50)	14.70*** (4.99)
Median Income (\$K)	-0.00865 (-1.79)	-0.00675 (-1.39)	-0.0845** (-2.42)	-0.0709** (-2.01)
Unemployment (%)	0.0296 (1.53)	0.0351 (1.80)	0.214 (1.48)	0.261 (1.78)
Poverty Household (%)	-0.0365** (-2.44)	-0.0391*** (-2.60)	-0.304*** (-2.69)	-0.334*** (-2.92)
Gini Index	7.407*** (5.38)	8.028*** (5.68)	59.25*** (5.84)	67.59*** (6.56)
Property Tax Share of Revenue	-2.552*** (-5.61)	-2.805*** (-6.23)	-19.64*** (-5.52)	-21.89*** (-6.15)
Intergovernmental Transfer Share of Revenue	-2.101*** (-4.78)	-1.977*** (-4.26)	-14.62*** (-4.52)	-13.51*** (-3.80)
Democrat House Representative	0.415*** (2.99)	0.423*** (3.00)	2.872*** (3.05)	3.037*** (3.16)
Democrat Senator	0.617*** (4.26)	0.497*** (3.07)	4.219*** (4.09)	3.157*** (3.03)
Republican Governor	0.131 (1.73)	0.194*** (2.60)	0.896 (1.62)	1.411** (2.50)
Constant	-4.870*** (-6.47)	-5.702*** (-8.01)	-39.53*** (-6.82)	-47.44*** (-8.42)
Year Fixed Effect	Y	Y	Y	Y
N	17668	17668	17668	17668

Notes:  $t$  statistics in parentheses. \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Cluster-robust standard errors are used (clustered at the city level).

Second, in terms of demographic variables, cities with more land area, a smaller share of the population over 65 but a larger share who are enrolled in school, and more ethnic fractionalization are more likely to participate in lobbying. Economic conditions such as income inequality are also strong predictors of lobbying activities. The fact that ethnic heterogeneity and income inequality are significant predictors of federal lobbying activity is consistent with the idea that cities with more heterogeneous preferences have a hard time forming a consensus on public resource allocation, leading to under-provision of local public goods (Easterly and Levine 1997; Alesina, Baqir, and Easterly 1999; Benabou 2000; Luttmer 2001; Habyarimana et al. 2007; Dahlberg, Edmark, and Lundqvist 2012). Our results indicate that federal lobbying may be one mechanism that those cities use to solve under-provision problems, as Alesina, Baqir, and Easterly (1999) suspect.

Third, local public finance conditions also play an important role in the lobbying activities of municipal governments. Cities that receive higher shares of total revenue from property taxes and inter-governmental transfers are relatively less likely to lobby the federal government. This is consistent with the theory that cities with more local resources from their own taxes or inter-governmental transfers rely less on lobbying to provide local public goods, while cities that do not have those resources engage more in federal lobbying.

Fourth, all else equal, cities that have Democratic federal representatives are more likely to lobby the federal government, which is not surprising if one assumes that Democrats are more sympathetic to constituent issues relating to public goods provision. Consistent with our theories, cities in states with a Republican governor tend to engage relatively more in federal lobbying. In particular, consistent with the theory that cities will lobby the federal government when their need for public goods falls on deaf ears in the state capital, a Republican governor is strongly predictive of federal lobbying participation and expenditure when we use the second measure of public goods gap (the amount of the city's direct expenditure per capita that is not covered by state spending). If cities are responding to a state government's relative lack of sympathy for their public goods preferences, it makes

perfect sense that the governor’s party would be significantly predictive of federal lobbying activity when the public goods shortfall is measured by the state’s failure to provide for the city specifically (rather than a low level of per capita state expenditure generally).

Although our primary interest is cross-sectional variation, we also conduct a panel analysis to investigate how changes in demographic, public finance, and political conditions affect cities’ lobbying activities.<sup>23</sup> To investigate variation within cities over time, we take advantage of the panel structure of the data. Since detailed demographic and public finance data are available for the years 2002, 2007, and 2012, we divide the study period into three: 1999 to 2002, 2003 to 2007, and 2008 to 2012, and aggregate lobbying activity across years for each period.<sup>24</sup> This yields a panel with 3,786 observations (1,262 cities over three different time periods). The specification for the basic panel model is given by

$$Y_{isT} = \beta D_{isT} + \Gamma \mathbf{X}_{isT} + \alpha_i + \varepsilon_{isT} \quad (2)$$

, where  $T = 2002, 2007, 2012$  and  $\alpha_i$  is the unobserved time-invariant individual city fixed effect.

Pooling three period observations from 2002 to 2012 for each city, we estimate

$$\Delta Y_{isT} = \beta(\Delta D_{isT}) + \Gamma(\Delta \mathbf{X}_{isT}) + \Delta \varepsilon_{isT} \quad (3)$$

The mean-difference specification addresses unobservable city characteristics ( $\alpha_i$ ). The coefficient of interest  $\beta$  captures the relationship between changes in public goods provision level between a city and its state, and changes in lobbying activities within a city over time. The effects of time-variant control variables such as population and income inequality are also identified.

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<sup>23</sup>While 721 cities in our sample never participated in lobbying and 109 cities always participated during the period, 435 cities had both lobbying and non-lobbying years. Additionally, lobbying spending varies significantly for cities that lobbied in every year of the study period.

<sup>24</sup>Regarding lobbying participation, we take the maximum value of any year: if a city engaged in lobbying any of the years during the given period, the city is considered to have participated in lobbying. Lobbying spending is summed over the years within the period.



Table 3 presents the results. For simplicity, we only present the results with the second measure of public goods gap (the gap between each city’s direct expenditure per capita and per capita expenditure from the state government’s transfer) which more directly captures state public goods provision to the municipal government. This public goods gap measure is a statistically significant predictor both of the decision to lobby and for the level of lobbying spending. A \$1,000 per capita increase in the gap between per capita municipal spending and per capita state transfer to the municipality is associated with a 3.2% increase in the probability of lobbying the federal government and 59.1% increase in city lobbying spending. Population growth is also associated with cities’ participating in lobbying the federal government. Increases in income inequality, measured by the Gini index, are associated with a higher likelihood of lobbying and more lobbying spending, although changes in ethnic heterogeneity do not appear to have a significant association with lobbying. One potential explanation for this is that while changes in income inequality between 2002 and 2012 (within cities) were substantial, within-city changes in ethnic heterogeneity over this ten-year period were relatively small.<sup>25</sup>

## 5 Does City Lobbying Make A Difference?

In this section, we investigate whether city lobbying makes a difference in terms of federal resource allocation. It would be difficult to explain any lobbying behavior if it did not result in increased funds to cities, and given that the most frequently mentioned issue in lobbying disclosures is budgeting, and that cities most frequently target appropriations bills, it is natural to assume that the purpose of city lobbying is to channel more resources into cities.

To narrow our examination of federal resources, we focus on congressional earmarks awarded to cities in fiscal years 2008 and 2009 and grants awarded from the 2009 Recovery Act to cities in fiscal years 2009 and 2012.<sup>26</sup> Most federal grants to local governments

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<sup>25</sup>The party of the House member and Governor also vary little within cities over the period, which may explain the null result for these variables in the panel analysis.

<sup>26</sup>In addition to securing more resources from the federal government, local government may also lobby to

Table 3: City Characteristics and Lobbying Activities - Panel Analysis

	(1)	(2)
	Lobbying Participation	(ln) Lobbying Spending (\$)
Public Goods Gap (\$K)	0.0325** (2.14)	0.591*** (3.18)
Population (K)	0.00146*** (3.96)	0.00872 (1.47)
Ethnic Heterogeneity	-0.154 (-1.11)	-2.219 (-1.48)
Gini Index	0.431 (1.69)	8.380*** (3.00)
Democrat House Representative	0.0273 (1.23)	-0.306 (-1.15)
Democrat Senator	-0.0102 (-0.39)	-0.304 (-1.03)
Republican Governor	-0.00321 (-0.28)	0.0856 (0.71)
Demographic Controls	Y	Y
Fiscal Controls	Y	Y
City Fixed Effect	Y	Y
<i>N</i>	3786	3786

*Notes:* *t* statistics in parentheses. \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Cluster-robust standard errors are used (clustered at the city level). Other control variables are included in the regression but are the results are not reported here. For the full results, see Table C.2 in Appendix C.

are distributed by rigid formulas, but earmarks are an opportunity for cities to influence the allocation of direct federal expenditures. Conventional wisdom suggests that the main purpose of lobbying is to attract more earmarks, and success in procuring earmarks is used by lobbying firms to advertise their services.<sup>27</sup> Earmark data available from the Office of Management and Budget includes detailed information on the recipients of funds for fiscal years 2008 and 2009.<sup>28</sup>

change rules such as the compliance deadlines set by the Environmental Protection Agency (EPA) or pension regulations by the Security Exchange Commission (SEC). Outcomes we examine in this paper - earmarks and the Recovery grants - is limited in that sense although the top lobbying issue by local governments was budget. Examining the effect of municipal lobbying on federal rules and regulations will be a fruitful extension of this study.

<sup>27</sup>see, e.g., Jodi Rudoren, "Hiring Federal Lobbyists, Towns Learn Money Talks," *The New York Times*, July 2, 2006.

<sup>28</sup>Earmarks or grants awarded dates and implemented dates are usually different. We use "awarded date" to examine the influence of lobbying activities on the decision to award federal resources to cities.

After the 2010 earmark ban, cities turned to competing for federal grants. The most important grant cycle in this period was the 2009 American Recovery and Reinvestment Act, commonly referred to as the Stimulus or the Recovery Act. The Recovery Act distributed funds in three ways: (1) tax benefits, (2) contracts, grants, and loans, and (3) entitlements. We focus on grants because grants are the most discretionary of these funds (entitlements are mostly based on formulas where the majority of recipient entities are local governments, and contracts are awarded mostly to firms and individuals).

We collect data on grants from the Recovery Act awarded in 2009 and 2012.<sup>29</sup> In calculating the total sum of recovery grants to each city, we exclude funding given to universities and individuals located in that city for research purposes.<sup>30</sup> We also exclude grants if they were awarded to individuals or firms. Hence, our sample includes grants mostly awarded to local governments or local contractors on public projects.<sup>31</sup> The average earmark funding is \$937,000 for 2008, and \$847,000 for 2009. For Recovery Act grants, the average amount is much larger than the average amount from earmarks, and most of the cities in our sample were the recipients of Recovery Act grants.<sup>32</sup>

Analyzing the relationship between earmarks or grants awarded to a city and the city's lobbying spending presents a challenge, because the decision to lobby and how much to spend on lobbying is non-random. Furthermore, it is difficult to identify the direction of the bias, because it is reasonable to assume that cities may lobby more aggressively either when they expect to be successful or when they expect to be unsuccessful in their efforts.

We address this issue by using information on whether there is a direct airline flight from city  $i$  to Washington, D.C. as an instrumental variable for city  $i$ 's lobbying decision.

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<sup>29</sup>Almost all Recovery Act grants were awarded in 2009 (79.48%) and 2010 (19.70%).

<sup>30</sup>Some of the Recovery Act targeted research and development activities, and therefore college towns and cities with a research university received a disproportionate share of grants. Therefore, we create two different recovery grant measures: one with the total grants awarded to any recipient whose location matches a city, and the other with total grants, excluding grants from the National Institute of Standards and Technology, the National Institutes of Health, the National Science Foundation, and the Office of Science.

<sup>31</sup>Among 40,462 grants awarded to our sample cities during the period, some grants were directly given to a school district within a city (125 cases) or school-specific funding (1,475 cases). But the majority of the grants aimed for local infrastructure and job creations.

<sup>32</sup>Table C.4 presents city-level summary statistics for earmarks and Recovery Act grants.

Anecdotal evidence and interviews with city officials indicate that municipal lobbying tends to occur when local government representatives travel to Washington, where their lobbyists take them to meetings with their House member and/or Senator.<sup>33</sup> The existence of a direct flight is a proxy for the convenience of traveling to Washington, D.C., both in time and cost. Therefore, we expect a city’s lobbying decision to be correlated with the presence of a direct flight between their city and the capital.<sup>34</sup>

We argue that this is a valid instrument (that the instrument is correlated with lobbying activity, but uncorrelated with the error term). Airline companies choose new destinations mainly based on market dynamics: long-term growth, market competition, and profitability. The Airline Deregulation Act of 1978 has allowed freedom for air carriers to set their own fares and routes.<sup>35</sup> Clearly, some of the characteristics of a city that might cause a direct flight to new destinations – such as the existence of an airport, population and income level – might also affect a city’s lobbying decision and level of lobbying spending. But after conditioning on all these relevant factors in the first stage regression, we argue that a direct flight to Washington, D.C. is a valid instrument for lobbying decision and spending.

Using data on within-city variation in the presence of a direct flight and average flight fare from a city to the capital obtained from the Bureau of Transportation Statistics between 1999 and 2012 for a subsample of cities, we find that cities substantially increased lobbying

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<sup>33</sup>Howard Marlowe, the president of the American League of Lobbyists and the president of Marlowe & Company, explained how representing local governments work in an interview with scholar Beth Leech. Usually their municipal government clients came to town [Washington D.C.] and his firm’s staffers were up on the Hill or executive branches with a group of people from municipal governments (Leech 2013).

<sup>34</sup>We collect data on a direct flight from a city  $i$  to Washington, D.C. (all three airports in the area - Baltimore (BWI), Dulles (IAD), and Reagan (DCA)) for each year for all cities since 2007. We use three measures: (1) a (literally) direct flight from city  $i$  to Washington, D.C., (2) a direct flight from a city  $i$  or a neighboring city within 25 miles from city  $i$  to Washington, D.C., (3) a direct flight from city  $i$  or a neighboring city within 50 miles from city  $i$  to Washington, D.C. The three measures all return similar results. Cities in Virginia and Maryland are tricky cases in terms of binary indicator of a direct flight, so we run regressions both including them and excluding them, and the results are similar.

<sup>35</sup>The Department of Transportation’s Essential Air Service (EAS) program provides flight service to rural areas that might be cut off from air service given the deregulation, and for those cities, lobbying could definitely affect the presence of a direct flight to Washington, D.C. In Appendix E, we re-run the analysis excluding EAS cities and the results are substantively the same. See, U.S. Department of Transportation (<https://www.transportation.gov/policy/aviation-policy/small-community-rural-air-service/essential-air-service>). See also, e.g., “Unpack: How We Choose New Cities,” *jetBlue*, March 1, 2012.

spending in a year when they had a direct flight to Washington, D.C. We also find that when flight fares to Washington, D.C. went up, cities were less likely to participate in lobbying and spent less on lobbying. A sequence of robustness checks strongly supports our claim that convenience of the flight, both in time and cost, is strongly related to a city’s federal lobbying activity.<sup>36</sup>

If having a direct flight to Washington, D.C. is associated with the city’s previous years’ lobbying spending or political affiliation of their federal representatives, using direct flight to Washington, D.C. as an instrument might violate the exclusion restriction. In the Appendix, we show that factors such as previous year’s lobbying spending by a city or political party affiliation of their federal representatives, both in the House and the Senate, do not predict whether a city has a direct flight to the capital in a given year  $t$ .<sup>37</sup>

The baseline empirical specification for the relationship between earmarks/Recovery Act grants and lobbying is as follows:

$$L_{is} = \alpha F_i + \Gamma \mathbf{X}_{is} + \psi_s + v_{is} \quad (4)$$

$$G_{is} = \beta \hat{L}_{is} + \Gamma \mathbf{X}_{is} + \psi_s + \varepsilon_{is} \quad (5)$$

Equation (4) is the first stage of our 2SLS model and equation (5) is the second stage regression, where the index  $i$  denotes cities, and  $s$  denotes states.  $L_{is}$  is the endogenous variable of interest, the lobbying spending of city  $i$ .  $G_{is}$  denotes total earmarks or grants awarded to city  $i$  across years.<sup>38</sup> For the earmark analysis, we combine all lobbying spending between 2007 and 2009 in city  $i$ . For the Recovery Act grant analysis, we combine all

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<sup>36</sup>For detailed robustness checks on the instrument, see Tables E.1 and E.2 in Appendix E.

<sup>37</sup>See Table E.3 in Appendix E. Having a direct flight should not be confused with having an airport. There are many cities in our sample that have an airport but do not have a direct flight to Washington, D.C. We control for city-level air transportation expenditures in the analysis.

<sup>38</sup>We combine all earmarks and Recovery Act grants awarded to each city across years, so there is no time component in this equation. This is because the time span for earmarks and Recovery Act grants is short (2 years for earmarks and 4 years for Recovery Act grants), and most of the Recovery Act grants were awarded in 2009 and 2010.

lobbying spending between 2008 and 2010, given that almost all award decisions were made in 2009 and 2010. Both distributions of lobbying spending and the amount of earmarks or the Recovery grants are highly skewed, so we use log-transformed values.

Table 4 presents the regression results. Column (1) reports the estimate of the correlation between a city’s lobbying spending and the earmarks that the city secured.<sup>39</sup> This estimate indicates that a city’s lobbying spending is positively related to the amounts that cities receive from earmarks and that this relationship is statistically significant.<sup>40</sup>

Column (2) reports 2SLS estimates of equation (5) on earmarks. Panel B under Column (2) reports the first stage estimates of equation (4). There is a strongly positive relationship between the instrument (a direct flight to Washington, D.C.) and a city’s lobbying spending. To address a set of natural concerns over the validity of our strategy, we control for a large set of covariates in the baseline specification. The first-stage robust- $F$ -statistic for the excluded instrument is 13.61 in our main specification; thus, it is unlikely that our estimates are biased by a weak instrument.<sup>41</sup> According to the estimate using the full set of baseline controls with state fixed effects, a one percent increase city lobbying spending is associated with an increase of about about 101% in the amount of earmarks.

Column (3) presents the OLS estimate for Recovery Act grants and the linear relationship between a city’s lobbying spending and Recovery Act grants is positive. Column (4) reports

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<sup>39</sup>Many cities in our sample received zero earmarks, so we use a Tobit specification in the earmark regression. We ran the earmark analysis with a dichotomous dependent variable, 0 or 1, depending on whether a city received any earmark or not. The result is reported in columns (1) and (2) in Table C.6 in Appendix C and the main result is robust.

<sup>40</sup>For the first stage regression and detailed second stage regression results with effects of various control variables on earmarks and grants, see Tables C.5 and C.6 in Appendix C. It would of course be interesting to know how lobbying efforts by state governments are related to city government lobbying returns, because we include state fixed effects, and the earmark and Recovery Act grant data structure is not panel, the coefficients on state government lobbying spending is not identified. County lobbying spending is identified, and one interesting pattern in the second stage regression is that lobbying activities by county governments where a city is located reduce the amount of earmarks and the Recovery grants that a city is awarded. Given the limited resources at the federal government, lobbying by multiple units of governments creates competition among different governments and this may explain the negative impact of state and the county governments’ lobbying on the federal resources given to the city government. Inclusion of a direct flight on the lobbying participation and spending does not change the core results on the public goods gap presented in Tables 2 and 3.

<sup>41</sup>Generally an  $F$  statistic over 10 is required to for instruments to be considered sufficiently strong (Stock, Wright, and Yogo 2002).

Table 4: The Effect of Lobbying on Earmarks and Recovery Act Grants to Cities

Variable	(ln) Earmark (\$)		(ln) Recovery Grant (\$)	
	(1) Tobit	(2) IV	(3) OLS	(4) IV
<i>Panel A.</i>				
(ln) City Lobbying Spending (\$)	0.50*** (8.07)	1.02*** (4.12)	0.06*** (3.06)	0.47*** (3.56)
<i>Panel B. First-stage estimates:</i>				
<i>DV = (ln) City Lobbying Spending (\$)</i>				
Direct Flight to Washington, D.C.		2.81*** (4.34)		2.66*** (4.11)
F-statistic		14.71		15.12
Controls:	Y	Y	Y	Y
State Fixed Effect	Y	Y	Y	Y
Observations	1,262	1,262	1,262	1,262
<i>t</i> statistics in parentheses. Cluster-robust standard errors are used (clustered at the state level).				
** $p < 0.05$ , *** $p < 0.01$				

the 2SLS estimate, which uses the full set of baseline controls with state fixed effects. A one percent increase in city lobbying spending increases the amount of earmarks awarded to the city by 45%. Large returns in earmarks and Recovery Act grants are partly due to the large size of government programs relative to the amount spent on lobbying.<sup>42</sup>

The analysis of the relationship between a city’s lobbying expenditures and the earmarks or grants that a city secures demonstrates that the returns to a city’s lobbying are statistically significant, substantively large and consistent over different types of federal resources. Comparing the returns to lobbying by local governments with the returns to lobbying by corporations raises the interesting question of why local government lobbying is so relatively effective. Although there are few empirical papers that demonstrate corporate lobbying is effective (e.g., Richter, Samphantharak, and Timmons 2009; Kang 2016), returns to lobby-

<sup>42</sup>Another reason of larger returns under the instrumental variable (IV) analysis than Tobit or OLS is that IV estimates captures the local average treatment effect (LATE) (Eisensee and Stromberg 2007; Angrist and Pischke 2009). That is, IV estimates capture the effect of lobbying spending on earmarks and Recovery Act grants among ‘complier’ cities: cities that changed their lobbying participation and/or lobbying spending level due to a direct flight to Washington D.C. The IV estimate is uninformative on the effect of lobbying for cities always lobbied or never lobbied, regardless of the existence of a direct flight to Washington D.C.

ing by city governments on earmarks and federal grants seem much larger in magnitude. This finding suggests that a city government represents voters, and when a city government decides to lobby, it sends a signal to federal representatives regarding voter preferences that may be difficult to ignore. Unlike corporations and other types of interest groups, local governments as interest groups may have a unique advantage by clearly representing the voters in a jurisdiction.

## 6 Conclusion

In this paper, we ask two questions: first, why do some cities lobby the federal government, while others do not? Second, does lobbying makes a difference in terms of federal resource allocation? By analyzing a large and novel dataset of lobbying disclosures filed on behalf of cities with populations greater than 25,000, we find that cities that suffer from an underprovision of local public goods due to a mismatch between local level demand and state government support are significantly more likely to lobby and spend greater sums on lobbying than cities which do not face such a gap in public goods. This suggests that differences in political geography generated by federalism create significant distributional consequences on cities. We find that income inequality and ethnic heterogeneity at the city level are also important factors correlated with federal lobbying activity. Then, we demonstrate that city lobbying is effective, in the sense that it draws more federal earmarks and grants to a city than it would otherwise receive.

To the extent that there are cities whose political preferences put them at a systematic disadvantage in the allocation of federal resources, this paper suggests that lobbying can be a corrective mechanism. By providing a forum for cities to communicate with Congress and federal agencies, federal lobbying is therefore a supplement to institutional representation by members of Congress.

If lobbying by local governments has a meaningful impact on federal resource allocation,



one wonders which citizens are represented by city lobbying. Local governments, unlike other interest groups, represent voters with heterogeneous preferences, and given that lobbying spending comes from local government budgets, voters even within the same city may disagree on whether the returns to lobbying justify the expense. The issue of who lobbying serves is further complicated if the federal resources secured by lobbying activities are distributed disproportionately to a certain type of city resident, such as through low-income housing subsidies. Distributional consequences of resources secured by lobbying on city residents and its impact on the incentives of local elected officials are fruitful directions for future research.

An important issue for further research is, if the returns to lobbying are so high, why do some cities not lobby at all? There are several possibilities. First, cities might not know that lobbying is effective unless they hear that their neighboring cities received extra federal grants by hiring lobbyists.<sup>43</sup> Second, cities where the preference for public goods is relatively low may prefer to collect less tax revenue rather than pay for lobbying, even though it would reap benefits. Finally, the incentives of locally elected officials may be misaligned with federal lobbying; for example, if local officials are extremely electorally safe, they may have little incentive to make the effort to hire lobbyists. Further investigation is needed in order to distinguish between these possibilities.

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<sup>43</sup>See, e.g., Jodi Rudoren, "Hiring Federal Lobbyists, Towns Learn Money Talks," *The New York Times*, July 2, 2006.

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## A Appendix: Data Sources

### A.1 Lobbying Reports

We downloaded the compiled lobbying data from the Center for Responsive Politics ([opensecrets.org](http://www.opensecrets.org)). The center divides all lobbying clients into 443 different categories. Among these categories, we selected lobbying reports submitted by clients under the following 5 categories: X3000 (Civil servant/public employee), X3100 (Public official), X3200 (Court and justice system), X3300 (Municipal and government organizations), and X3500 (Public school teachers, administrators and officials). We exclude lobbying reports from U.S. territories and outlying areas such as Puerto Rico, and the U.S. Virgin Islands.

### A.2 Demographic and Public Finance data

For demographic variables, we use the 2000 Census and the 2007 and 2012 American Community Surveys (<http://www.socialexplorer.com>). For public finance data, we use data from the Census of Governments which is released every five year term (years ending in 2 and 7). We use Census of Governments data from 2002, 2007, and 2012 (<http://www.census.gov/govs/>).

### A.3 Earmarks and Recovery Act grants

Earmark data are obtained from the Office of Budget and Management (<https://earmarks.omb.gov/earmarks-public/>). Recovery Act grant data are obtained from the the official U.S. Government website for the Recovery Accountability and Transparency Board ([recovery.gov](http://recovery.gov)).

### A.4 Distance and Flight Information

Distance from a city to Washington, D.C. is collected manually via Google maps. Information on direct flight and flight fares is collected from a website of the Bureau of Transportation Statistics (<http://www.transtats.bts.gov>). Information about the Essential Air Service (EAS) program is collected from a website of the U.S. Department of Transportation (<https://www.transportation.gov/policy/aviation-policy/current-list-eligible-eas-communities>).

## B Appendix: Detailed Information of Government Entities' Lobbying Activities

Table B.1: Association of Institutions Lobbying Activity, 1999-2012

Name	Total Spending (\$K)	Total # Reports
Federation of State Medical Boards	3,510	51
National Assn of Towns & Townships	1,470	26
National Council for Impacted Schools	880	46
National Forest Counties & Schools Coalition	683	62
Council of the Great City Schools	581.4	79
National Assembly of State Arts Agencies	500	37
Western Regional Council	323.6	11
National Assn of Counties	257	5
NE Council State Government	232	9
Council of State Governments	180	4
National Council for Community & Ed Partners	135.3	16
National League of Cities	100	8
US Conference of Mayors	40	7
Local Governments for Superfund Reform	20	4
Regional Council of Rural Counties	0	8
Magnet Schools of America	0	30
Council of State Govts East Region Conference	0	9
National School Boards Assn	0	3
National Assn of Federally Impacted Schools	0	39
Total	8,912.4	454



Table B.2: Summary Statistics of City Lobbying Activities

<b>Year</b>	<b># Lobbying Cities<sup>a</sup></b>	<b># Reports<sup>b</sup></b>	<b>Total Spending(\$K)<sup>c</sup></b>
1999	180	406	14,419
2000	196	435	15,020
2001	217	504	17,758
2002	245	576	21,613
2003	274	643	24,879
2004	280	673	27,656
2005	308	728	29,082
2006	325	758	30,998
2007	359	835	31,499
2008	366	1,718	32,515
2009	407	1,792	34,081
2010	381	1,720	33,194
2011	368	1,597	29,431
2012	337	1,473	25,263
<b>Total</b>		<b>13,858</b>	<b>367,414</b>

*Note:* a. Number of cities that submitted at least one lobbying report in that year. b. Total number of lobbying reports submitted by cities in that year. The 2007 amendments to the Lobbying Disclosure Act resulted in lobbying reports being submitted quarterly, rather than biannually, starting in 2008, which explains the significant increase in the number of lobbying reports in 2008. c. Total lobbying spending by cities in that year (thousand U.S. dollars in 2012 value).

Table B.3: Top 20 Cities in Lobbying

Rank	City	State	Total Spending(\$K) <sup>a</sup>	# Reports <sup>b</sup>	# Hired Firm <sup>c</sup>
1	New Orleans	LA	7,384	189	20
2	Phoenix	AZ	5,764	89	8
3	Philadelphia	PA	5,728	112	10
4	Houston	TX	3,979	47	4
5	Tucson	AZ	3,855	70	1
6	Jacksonville	FL	3,742	48	5
7	Indianapolis	IN	3,677	39	3
8	San Diego	CA	3,336	51	6
9	San Antonio	TX	3,322	75	7
10	St. Louis	MO	3,305	100	6
11	Las Vegas	NV	3,253	57	5
12	Folsom	CA	3,186	52	2
13	Dallas	TX	2,948	118	6
14	Laredo	TX	2,922	66	6
15	Long Beach	CA	2,750	39	3
16	Sandy	UT	2,748	38	4
17	Memphis	TN	2,677	48	6
18	Virginia Beach	VA	2,675	42	3
19	Fort Worth	TX	2,660	38	4
20	Detroit	MI	2,604	38	6

*Note:* a. Total lobbying spending between 1999 and 2012 (thousand U.S. dollars in 2012 value). b. Total number of reports submitted between 1999 and 2012. c. Total number of hired unique lobbying firms between 1999 and 2012.

Table B.4: Top 10 Issues, Bills, and Targeted Agencies

Issue		Bill <sup>a</sup>		Agency <sup>b</sup>		
Rank	Issue	# Reports	Bill Name	# Reports	Agency Name	# Reports
1	Budget	4,800	Recovery Act	400	House	4,943
2	Transportation	2,133	Hiring Incentive Act	353	Senate	4,839
3	Urban Development	1,599	Appropriations Act	314	DOT	543
4	Environment	566	Appropriations Act	304	Army Corps	433
5	Economic Development	525	Appropriations Act	288	DHUD	287
6	Housing	406	Appropriations Act	284	EPA	199
7	Law Enforcement	332	Appropriations Act	249	DOJ	175
8	Natural Resources	301	Appropriations Act	238	DOD	131
9	Clean Air & Water	286	Appropriations Act	229	DOH	127
10	Roads/Highway	239	Clean Energy Act	228	FAA	120

*Note:* **a. Specific information for bills in each rank:** 1 = HR 1 (111th), American Recovery Act. 2 = HR 2847 (111th) = Hiring Incentives to Restore Employment Act. 3 = HR 3074 (110th), Transportation, Housing and Urban Development Appropriations Act of 2008. 4 = S 3644 (111th), Transportation, Housing and Urban Development Appropriations Act of 2011. 5 = HR 5850 (111th), Transportation, Housing and Urban Development Appropriations Act of 2011. 6 = HR 5576 (109th), Transportation, Housing and Urban Development Appropriations Act of 2007. 7 = HR 3288 (111th), Consolidated Appropriations Act of 2010. 8 = S 1789 (110th), Transportation, Housing and Urban Development Appropriations Act of 2008. 9 = S 3261 (110th), Transportation, Housing and Urban Development Appropriations Act of 2009. 10 = HR 2454 (111th), American Clean Energy and Security Act of 2009.

**b. Names of Agency:** DOT = Department of Transportation, Army Corps = Army Corps of Engineers, DHUD = Department of Housing and Urban Development, EPA = Environmental Protection Agency, DOJ = Department of Justice, DOD = Department of Defense, DOH = Department of Homeland Security, FAA = Federal Aviation Administration.

## C Appendix: Tables

Table C.1: Summary Statistics

<b>Variable</b>	<b>Mean</b>	<b>S.D.</b>	<b>Min.</b>	<b>Max</b>
Public Goods Gap 1 <sup>a</sup>	-2.16	1.24	-12.25	6.81
Public Goods Gap 2 <sup>b</sup>	1.53	1.02	0.03	12.15
City Population (K)	104.2	298.6	18.1	8,214.4
Land Area (K. sq. miles)	.040	.107	.001	2.716
Water Area (K. sq. miles)	.003	.023	0	.551
Senior (%)	12.3	4.2	2.5	37.7
Student (%)	17.5	3.5	2.5	31.8
Ethnic Heterogeneity	.38	.16	.03	.78
Unemployment (%)	8.0	3.8	1.4	30.2
Poverty Household (%)	10.8	6.8	.52	38.1
Gini	.42	.05	.26	.64
Property Tax Share of Revenue	.23	.15	0	.91
Intergovernmental Transfer Share of Revenue	.18	.13	0	.77
House Democrat	.70	.45	0	1
Senate Democrat <sup>c</sup>	.60	.41	0	1
Republican Govenor	.52	.51	0	1

*Notes:* **a.** City level direct expenditure per capita - per capita state government direct expenditure. **b.** City level direct expenditure per capita - per capita state government transfers to city. **c.** 0 if both Senators who represented a state where a city located in are Republican, 0.5 if one Senator is Democrat, and 1 if both Senators are Democrat.

Table C.2: City Characteristics and Lobbying Activities - Panel Analysis

	(1)	(2)
	Lobbying Participation	(ln) Lobbying Spending (\$)
Public Goods Gap (\$K)	0.0325** (2.14)	0.591*** (3.18)
Population (K)	0.00146*** (3.96)	0.00872 (1.47)
Land Area (K sq.miles)	-1.787 (-1.14)	6.859 (0.34)
Water Area (K sq.miles)	-12.62 (-1.84)	-56.90 (-0.89)
Senior (%)	-0.0129** (-2.35)	-0.0980 (-1.55)
Student (%)	-0.00941** (-1.97)	-0.120** (-2.26)
Ethnic Heterogeneity	-0.154 (-1.11)	-2.219 (-1.48)
Median Income (\$K)	-0.00473*** (-2.87)	-0.0235 (-1.19)
Unemployment (%)	-0.00130 (-0.46)	0.0660** (2.01)
Poverty Household (%)	-0.00381 (-1.31)	-0.0114 (-0.33)
Gini Index	0.431 (1.69)	8.380*** (3.00)
Property Tax Share of Revenue	-0.0679 (-0.50)	1.311 (0.87)
Intergovernmental Transfer Share of Revenue	-0.0583 (-0.50)	0.302 (0.25)
Democrat House Representative	0.0273 (1.23)	-0.306 (-1.15)
Democrat Senator	-0.0102 (-0.39)	-0.304 (-1.03)
Republican Governor	-0.00321 (-0.28)	0.0856 (0.71)
Constant	0.716*** (2.93)	2.949 (1.02)
City Fixed Effect	Y	Y
<i>N</i>	3786	3786

Notes: *t* statistics in parentheses. \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Cluster-robust standard errors are used (clustered at the city level).

Table C.3: Comparison of Lobbying Cities and Non-Lobbying Cities

Variable	Lobbying Cities	Non-Lobbying Cities	Difference in Means
<b>A. Demographics</b>			
Population	162,566	59,908	102,658***
Land Area (sq.mile)	56.7	27.3	29.3***
Water Area (sq.mile)	6.5	1.8	4.7***
Senior Population (%)	11.9	12.6	-0.7**
Student Population (%)	17.7	17.5	0.2
Ethnic Heterogeneity <sup>a</sup>	.43	.34	0.09***
Median Income (\$)	55,164	611,48	-5,983***
Per Capita Income(\$)	27,792	29,957	-2,165***
Unemployment(%)	8.4	7.4	1.0***
Poverty Household (%)	12.1	9.6	2.5***
Gini Index	.43	.41	0.02***
<b>B. Political Variables</b>			
City Ideology Measure <sup>b</sup>	-.097	-.044	-.052***
CD Ideology Measure	.021	0.006	.015
State Ideology Measure	-.023	-.031	-.008
City Pres.Dem 2008 (%)	61.1	56.7	4.4***
State Pres.Dem 2008 (%)	53.5	52.1	1.4***
Senators Democrat	.61	.59	.02
House Democrat	.73	.68	.05*
Governor Democrat	.482	.481	.001
State Senate Majority Democrat	.56	.50	.06**
State House Majority Democrat	.60	.58	.02
<b>C. Public Finance</b>			
Total Intergovernmental Transfer Share of Revenue (%) <sup>c</sup>	17.3	18.8	-1.5**
Federal Government Transfer Share of Revenue (%) <sup>d</sup>	3.5	2.5	1.0***
State Government Transfer Share of Revenue (%) <sup>e</sup>	11.7	13.7	-2.0***
Property Tax Share of Revenue (%)	25.6	33.4	-7.8***
Sales Tax Share of Revenue (%)	17.5	13.2	4.2***
Expenditure per capita <sup>f</sup>	2,036.5	1,806.3	230.2***
General Expenditure per capita <sup>g</sup>	1,637.7	1,490.5	147.1***
Intergovernmental Expenditure per capita	31.4	36.5	-5.1
No. Observation	541	721	

Note: t-statistics for the difference in means are in parentheses. \*, \*\*, and \*\*\* indicate significant at the 10%, 5%, and 1% levels, respectively. All values are at their mean. For demographic variables, we take average values from the 2000 census, 2007 and 2012 American Community Surveys at the city level. For time-variant political variables, we take average from values across all years. For public finance variables, we take average from 2002, 2007, and 2012 Census of Governments public finance data. **a.**

Ethnic heterogeneity is calculated as  $1 - \sum_{i=j}^n \alpha_i^2$ , where  $\alpha_i$  is a share of a race  $i$  in a city population. **b.** Lower values indicate more

liberal and higher values indicate more conservative. **c.** Amounts received from other governments as fiscal aid in the form of shared revenues and grants-in-aid; as reimbursements for performance of general government functions; and for specific services for the paying government, or in lieu of taxes. **d.** Intergovernmental revenue received by the city government directly from the Federal Government. Excludes Federal aid channeled through state governments. **e.** All intergovernmental revenue received from the state government, including amounts originally from the Federal Government but channeled through the state. **f.** All amounts of money paid out by a government, net of recoveries and other correcting transactions, other than for retirement of debt, investment in securities, extension of credit, or as agency transactions. **g.** All city expenditure other than the specifically enumerated kinds of expenditure classified as expenditures on utility, liquor stores, and employee-retirement or insurance trust.

Table C.4: Summary Statistics for Earmarks and Grants from the Recovery Act of 2009

<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>Median</b>	<b>SD</b>	<b>Min.</b>	<b>Max.</b>
City Earmark 2008	1,262	937	0	3,506	0	52,575
City Earmark 2009	1,262	847	0	2,741	0	42,653
Recovery Grant 2009	1,262	106,252	5,765	585,379	0	11,482,236
Recovery Grant 2010	1,262	26,299	644	152,624	0	3,371,118
Recovery Grant 2011	1,262	2,281	0	30,636	0	766,610
Recovery Grant 2012	1,262	193	0	3,147	0	74,840

*Note:* All numbers are in thousand US dollars.

Table C.5: Results from Tobit, OLS Regression, and the Second Stage Instrumental Variable Analysis

Variable	(ln) Earmark (\$)		(ln) Recovery Grant (\$)	
	(1) Tobit	(2) IV	(3) OLS	(4) IV
(ln) City Lobbying Spending (\$)	0.50*** (8.07)	1.02*** (4.12)	0.06*** (3.06)	0.47*** (3.56)
Population (K)	0.001 (0.67)	0.0001 (0.01)	0.001 (1.83)	0.0004 (1.07)
Land Area (K sq.miles)	2.91 (0.53)	-3.54 (-1.20)	0.34 (0.12)	-2.62 (-1.07)
Water Area (K. sq. miles)	15.16 (1.09)	5.48 (0.51)	4.56 (0.82)	0.80 (0.14)
Senior (%)	0.13 (1.73)	0.17*** (2.77)	-0.09*** (-2.88)	-0.03 (-1.13)
Student (%)	0.08 (0.67)	-0.002 (-0.03)	-0.11 (-1.82)	-0.14 (-1.62)
Ethnic Heterogeneity	6.66*** (3.36)	3.06** (2.27)	2.21*** (2.71)	1.49 (1.73)
Median Income (\$K)	-0.03 (-1.04)	0.0008 (0.06)	0.01 (1.07)	0.02 (1.33)
Unemployment (%)	-0.17 (-1.02)	-0.13 (-0.98)	-0.03 (-0.82)	-0.06 (-1.34)
Poverty Household (%)	0.23** (2.00)	0.16** (2.16)	0.11*** (2.66)	0.12** (2.37)
Gini	20.75 (1.48)	-3.78 (-0.34)	8.08** (2.01)	-0.27 (-0.04)
Property Tax Share of Revenue	-6.99** (-2.12)	-0.52 (-0.23)	-5.44*** (-3.87)	-3.40** (-2.25)
Intergovernmental Transfer Share of Revenue	1.05 (0.37)	1.28 (0.66)	-0.22 (-0.12)	-0.10 (-0.06)
City Airport Expenditures Share	29.90** (2.76)	7.09 (0.79)	12.23*** (3.66)	3.63 (0.65)
Democrat House Representative	0.17 (0.23)	-0.20 (-0.37)	-0.74** (-2.53)	-0.89*** (-3.68)
(ln) County Government Lobbying (\$)	-0.21** (-2.50)	-0.16*** (-2.66)	-0.07 (-1.64)	-0.11** (-2.22)
State Fixed Effect	Y	Y	Y	Y
Observations	1,262	1,262	1,262	1,262

Notes:  $t$  statistics in parentheses. \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Cluster-robust standard errors are used (clustered at state level).



Table C.6: First Stage Results of Instrumental Variable Analysis (Dependent Variable = (ln) Total Lobbying Spending in 2008 and 2009 (earmark regression) and in 2009 - 2012 (Recovery grant regression))

	(1) Earmark Regression	(2) Recovery Grant Regression
Direct Flight to D.C.	2.81*** (4.34)	2.66*** (4.11)
Public Goods Gap <sup>a</sup>	0.47** (2.22)	0.60*** (2.96)
Population	0.0006 (1.36)	0.0007 (1.50)
Land Area (K sq.miles)	5.41** (2.33)	5.38** (2.37)
Water Area (K sq.miles)	7.31 (0.84)	4.49 (0.48)
Senior (%)	-0.12*** (-2.77)	-0.13*** (-3.13)
Student (%)	0.12 (1.90)	0.11 (1.93)
Ethnic Heterogeneity	0.35 (0.28)	0.74 (0.61)
Median Income (\$K)	-0.03** (-2.16)	-0.02** (-2.28)
Unemployment (%)	0.05 (0.75)	0.04 (0.75)
Poverty Household (%)	-0.05 (-1.17)	-0.05 (-1.15)
Gini Index	18.98*** (4.20)	15.63*** (3.77)
Property Tax Share of Revenue	-4.47*** (-2.82)	-3.81** (-2.52)
Intergovernmental Transfer Share of Revenue	-1.36 (-0.87)	-0.89 (-0.60)
City Airport Expenditures Share	15.20** (2.32)	16.07*** (2.53)
Democrat House Representative	0.48 (1.20)	0.31 (0.75)
(ln) County Government Lobbying (\$)	0.06 (1.81)	0.07** (2.39)
$R^2$	0.32	0.32
Robust F-statistics	14.71	22.39
State Fixed Effect	Y	Y
Observation	1,262	1,262

Notes:  $t$  statistics in parentheses. \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Cluster-robust standard errors are used (clustered at state level). a. city level direct expenditure per capita - per capita state transfer to city.

In this section, we provide analysis of the effect of lobbying when we use a dichotomous dependent variable for earmarks and Recovery Act grants. As we noted, we combined all earmarks awarded in 2008 and 2009 and Recovery Act grants awarded from 2009 through 2012 to a city (because the most of the Recovery Act grants were awarded in 2009). If many cities received zero earmarks or grants but a few cities received a large rewards, this could bias the regression. Among 1,262 cities in our sample, 534 cities (42.3%) received no earmark and 65 cities (5.1%) received no Recovery Act grants during the period. We coded 1 if a city received any earmarks and 0 otherwise (same for Recovery Act grants). Given that we have significant variation in terms of dummy variables for earmarks, we expect to produce a similar result regarding the earmark if we run the same regression with a dichotomous dependent variable as the results presented in the main text. Columns (1) and (2) in Table C.7 support this case. However, for Recovery Act grants, almost all cities (95% of our sample) received a positive sum of grants during the period and therefore, if we use a dichotomous dependent variable, there is very little variation. Due to this minimal variation in the dichotomous dependent variable, the relationship between a city’s lobbying spending and whether a city received any Recovery Act grants is not statistically significant.

Table C.7: The Effect of Lobbying on Earmarks and Recovery Act Grants to Cities

Variable	Earmark Dummy		Recovery Grant Dummy	
	(1) OLS	(2) IV	(3) OLS	(4) IV
<i>Panel A.</i>				
(ln) City Lobbying Spending (\$)	0.021*** (7.73)	0.051*** (3.30)	0.0009 (0.98)	0.0007 (0.11)
<i>Panel B. First-stage estimates:</i> <i>DV = (ln) City Lobbying Spending (\$)</i>				
Direct Flight to Washington, D.C.		2.81*** (4.34)		2.66*** (4.11)
F-statistic		14.70		15.12
Controls:	Y	Y	Y	Y
State Fixed Effect	Y	Y	Y	Y
Observations	1,262	1,262	1,262	1,262

*Notes:* *t* statistics in parentheses. \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Cluster-robust standard errors are used (clustered at state level).

## D Appendix: Ideology Divergence Measures and Public Goods Gap

In this section, we present the relationship between various ideological divergence measures and city-state public goods gaps. There could be numerous reasons why cities experience a public goods provision gap, but we argue that a mismatch between city’s ideology and the state government’s ideology is a significant factor that affects the gap in public goods provision.

As we state in the main text, we use two estimates to measure the difference between city- and state-level public goods expenditure (a measure we call the *public goods gap*). Our first measure is the difference between each city’s direct expenditure per capita and the concordant state government’s direct expenditure per capita (Gap 1). The first measure varies every year. Second, we measure how much of a city’s expenses are covered by the state government by measuring the difference between each city’s total direct expenditures per capita and the state government’s per capita transfers to each city (Gap 2). The second measure varies every five years since the Census of Governments is taken every five years.

We use multiple measures to capture the ideological differences between a city and its residing state for the robustness. First, we used the MRP measure developed by by Tausanovitch and Warshaw (2014) (*Divergence 1*). *Divergence 1* measure is calculated by this formula: state MRP - city MRP. Given that higher MRP means more conservative, liberal cities located in conservative states will have higher *Divergence 1* measure. Second, we create categorical variables based on the party label difference between the governor and the House Representative (*Divergence 2*). We code 1 if a city has a Democratic House Representative and 0 otherwise for the variable *House Democrat*. We code 1 if a city has a Democratic Governor and 0 otherwise for the variable *Governor Democrat*. Then *Divergence 2* is calculated by: House Democrat – Governor Democrat. Cities with Democratic House Representatives but Republican Governors will have higher *Divergence 2* measures. Finally, mayoral partisanship is a natural measure of city ideology. But mayoral partisanship is perhaps the least informative of these four measures, since 77% of the cities we study have nonpartisan mayoral elections (only eight of the 30 most populous U.S. cities have partisan mayoral elections),<sup>44</sup>. Nevertheless, for the cities that do have partisan mayoral elections, we collected the mayor’s partisan affiliation and created a categorical variable (Mayor Democrat – Governor Democrat). We coded 1 if a mayor is a Democrat for the variable *Mayor Democrat* and coded 1 if the Governor is Democrat for the variable *Governor Democrat*. Based on

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<sup>44</sup><http://www.nlc.org/build-skills-and-networks/resources/cities-101/city-officials/partisan-vs-nonpartisan-elections>

these two variables, we create the categorical variable (*Divergence 3*) by calculating Mayor Democrat – Governor Democrat. Cities with a democratic mayor but a republican governor will have higher *Divergence 3* measures.

Then we run regressions of the public goods gap on the various divergence measures. Since the second public goods measure (Gap 2) varies every five years, we take three years (2000, 2005, and 2010) to be included in the analysis for the second regression. Tables D.1 present the results for the first measure of public goods gap in Panel A and the second measure of public goods gap in Panel B. All three measures of ideological divergence between a city and a state are significantly related to the size of the city-state public goods gap, after controlling for other relevant demographic and fiscal variables.

Table D.1: Relationship between Divergence in Ideology and Public Goods Gap

	(1)	(2)	(3)
<i>Panel A: DV = Gap 1</i>			
Divergence 1	0.878*** (20.13)		
Divergence 2		0.186*** (14.68)	
Divergence 3			0.154*** (6.81)
Controls	Y	Y	Y
<i>N</i>	17668	17668	3531
adj. <i>R</i> <sup>2</sup>	0.242	0.234	0.243
<i>Panel B: DV = Gap 2</i>			
Divergence 1	0.306*** (4.32)		
Divergence 2		0.0506** (2.53)	
Divergence 3			0.158*** (4.64)
Controls	Y	Y	Y
<i>N</i>	3786	3786	945
adj. <i>R</i> <sup>2</sup>	0.356	0.354	0.467

## E Appendix: Robustness Checks for the Instrument

In this section, we demonstrate that convenience of flight is a valid instrument for a city’s lobbying activity. In the main text, we use the existence of direct flight to measure the convenience of flying to Washington, D.C. The existence of a direct flight means city officials who need to travel to the capital can save both time and money. To illustrate the validity of the instrument, we collect direct flight information from the Bureau of Transportation Statistics (BTS) for the period between 1999 and 2012 and conduct a panel analysis. We collect data for 289 cities in the sample and see whether the existence of a direct flight within a city affects a city’s lobbying spending. Among 289 cities, 70 cities had had a direct flight every year in the period. However, the other cities had a direct flight in some years and did not have one in other years, as Figure 1 indicates. Therefore, within-city variation allows us to examine whether the existence of a direct flight changes the likelihood of a city’s participating in federal lobbying.

Figure 1: Distribution of Number of A Direct Flight to Washington DC, 1999-2012

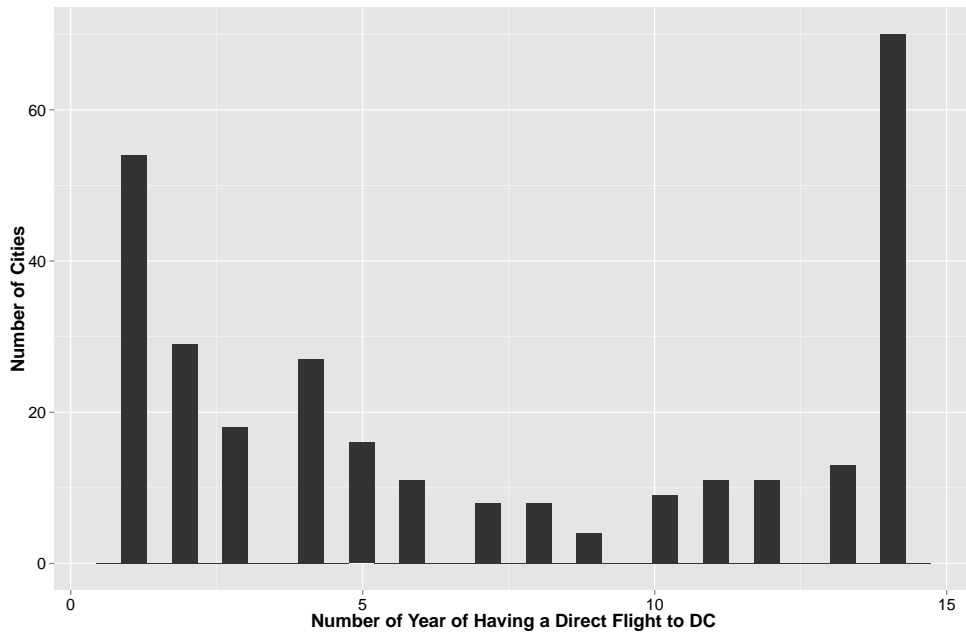


Table E.1 presents the results. The independent variable is an existence of a direct flight from a city  $i$  to Washington, DC in year  $t - 1$ . The dependent variable is a log transformation of city lobbying spending at year  $t$ . Column (1) shows that with a full set of demographic, public finance, and political variables, a direct flight is significantly positively related to the amount of a city’s lobbying spending. As presented in column (2), including a city fixed

effect produces a similar result.

Table E.1: Direct Flights and and Lobbying Spending

Variable	(ln) Lobbying Spending <sub>t</sub>	(ln) Lobbying Spending <sub>t</sub>
A Direct Flight <sub>t-1</sub>	1.59*** (4.35)	0.67*** (3.62)
Controls	Y	N
City FE	N	Y
Observations	3,827	3,827
adj. $R^2$	0.197	0.692

Note: t-statistics are in parentheses. \*\*, and \*\*\* indicate significant at the 5%, and 1% levels, respectively. Errors are clustered at city level.

Another way to measure the convenience of flight is to examine changes in flight fares. If flight fares increase, conditional on distance from Washington, D.C., this indicates that city officials face more inconvenience in flying to the capital. Therefore, we investigate whether changes in flight fares, another way to measure the convenience of flying to Washington, D.C., affects a city's lobbying activity.

The Bureau of Transportation Statistics provides the information for flight fares to three airports in the Washington, D.C. area for a subset of cities. The data include average quarterly flight fare to Washington, D.C. (all three airports - Baltimore (BWI), Washington (DCA and IAD)) from each city. We calculate the average fare for each city in each year. There are 1,731 city-year observations. We then merge the flight fare data with the city lobbying data. Table E.2 presents the regression results. The dependent variables are (1) whether a city participated a lobbying or not and (2) the log amount of a city's lobbying spending. The main independent variable of interest is the average flight fare to Washington, D.C. The results indicate that a dollar increase in flight fare to Washington, D.C. reduces the likelihood of a city's participating in lobbying and reduces a city's lobbying spending by 2%. Thus, the analysis in this section supports the argument that the presence of a direct flight is a valid instrument for a city's lobbying activity.

We also present evidence that the decision to have direct flight at time  $t$  is mainly an independent decision by airline companies and the decision is not associated with city  $i$ 's previous years' lobbying spending. Table E.3 presents the results. Column (1) presents the results from the cross-sectional analysis and column (2) presents the results from the city fixed effects analysis. The Department of Transportation provides the Essential Air Services (EAS) program that guarantees that small communities are served by air carriers

Table E.2: Changes in Flight Fares and City’s Lobbying Spending

Variable	Lobbying Participation	(ln) Lobbying Spending (\$)
Average Flight Fare to DC	-0.00584*** (-2.62)	-0.0213*** (-4.05)
Year FE	Y	Y
Controls	Y	Y
Observations	1,731	1,731

Note: t-statistics are in parentheses. \*, \*\*, and \*\*\* indicate significant at the 10%, 5%, and 1% levels, respectively. Errors are clustered at city level. Logit for lobbying participation regression and Tobit for (ln) lobbying spending regression are used.

since the Airline Deregulation Act (ADA) passed in 1978. For those cities, a direct flight to Washington, D.C. may not be an independent decision by air carriers but a product of government decision which could be influenced by municipal lobbying. There are 60 communities in Alaska and 116 cities in other states and Puerto Rico that are qualified for EAS service. Among those, 41 cities are included in our data and 21 cities among them had a direct flight to Washington, D.C. for at least one year during the period of study. We ran the same analysis excluding those 21 cities and the result is reported in column (3) in Table E.3. The result is consistent with the previous analyses.

Table E.3: Lagged City Lobbying Spending and a Direct Flight to Washington D.C.

	(1)	(2)	(3)
	Logit	Panel	Panel (excluding EAS cities)
Lag (ln) Lobbying Spending (\$)	0.0257 (1.64)	0.00292 (1.52)	0.00262 (1.33)
(ln) State Airport Expenditures	0.00479 (0.21)	-0.00547 (-1.43)	-0.00461 (-1.11)
City Population (K)	0.00652*** (4.33)	-0.000339 (-1.48)	-0.000309 (-1.38)
Per Capita Income (K)	0.175*** (2.80)	-0.00106 (-0.11)	-0.00429 (-0.44)
House Representative Democrat	0.148 (0.95)	-0.0162 (-0.56)	-0.0158 (-0.52)
Senate Democrat	0.118 (0.53)	0.0513 (1.57)	0.0451 (1.43)
Governor Democrat	-0.00615 (-0.06)	-0.0287 (-1.92)	-0.0177 (-1.17)
Other Controls	Y	Y	Y
Year Fixed Effect	Y	Y	Y
City Fixed Effect	N	Y	Y
$N$	4045	4045	3751
adj. $R^2$		0.564	0.568

Notes:  $t$  statistics in parentheses. \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Cluster-robust standard errors are used (clustered at city level). Other demographic and fiscal variables are included in the regression but are the results are not reported here.



# F Appendix: An Example of a City Lobbying Form

Figure 2: A Lobbying Report Submitted by City of New Orleans for Activities during Q4, 2014

Clerk of the House of Representatives Legislative Resource Center B-106 Cannon Building Washington, DC 20515 <a href="http://lobbyingdisclosure.house.gov">http://lobbyingdisclosure.house.gov</a>	Secretary of the Senate Office of Public Records 232 Hart Building Washington, DC 20510 <a href="http://www.senate.gov/lobby">http://www.senate.gov/lobby</a>
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## LOBBYING REPORT

**Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required to Complete This Page**

<b>1. Registrant Name</b> <input checked="" type="checkbox"/> Organization/Lobbying Firm <input type="checkbox"/> Self Employed Individual Breaux Lott Leadership Group			
<b>2. Address</b> Address1 2550 M STREET, NW Address2 _____ City WASHINGTON State DC Zip Code 20037 Country USA			
<b>3. Principal place of business (if different than line 2)</b> City _____ State _____ Zip Code _____ Country _____			
<b>4a. Contact Name</b> Mr. James B. Christian	<b>b. Telephone Number</b> 2024576484	<b>c. E-mail</b> LDAdmins@pattonboggs.com	<b>5. Senate ID#</b> 40020141-746
<b>7. Client Name</b> <input type="checkbox"/> Self <input checked="" type="checkbox"/> Check if client is a state or local government or instrumentality City of New Orleans			<b>6. House ID#</b> 398360052

**TYPE OF REPORT** 8. Year 2014 Q1 (1/1 - 3/31)  Q2 (4/1 - 6/30)  Q3 (7/1 - 9/30)  Q4 (10/1 - 12/31)

9. Check if this filing amends a previously filed version of this report

10. Check if this is a Termination Report  Termination Date \_\_\_\_\_ 11. No Lobbying Issue Activity

INCOME OR EXPENSES - YOU MUST complete either Line 12 or Line 13	
<b>12. Lobbying</b> INCOME relating to lobbying activities for this reporting period was: Less than \$5,000 <input type="checkbox"/> \$5,000 or more <input checked="" type="checkbox"/> \$ 60,000.00 Provide a good faith estimate, rounded to the nearest \$10,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).	<b>13. Organizations</b> EXPENSE relating to lobbying activities for this reporting period were: Less than \$5,000 <input type="checkbox"/> \$5,000 or more <input type="checkbox"/> \$ _____ <b>14. REPORTING</b> Check box to indicate expense accounting method. See instructions for description of options. <input type="checkbox"/> Method A. Reporting amounts using LDA definitions only <input type="checkbox"/> Method B. Reporting amounts under section 6033(b)(8) of the Internal Revenue Code <input type="checkbox"/> Method C. Reporting amounts under section 162(e) of the Internal Revenue Code

Signature Digitally Signed By: James B. Christian, Senior Counsel Date 01/18/2015

Figure 3: A Lobbying Report Submitted by City of New Orleans for Activities during Q4, 2014

**LOBBYING ACTIVITY.** Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Add additional page(s) as needed.

15. General issue area code TRA

16. Specific lobbying issues

Transportation Security Administration funding for in line baggage system

17. House(s) of Congress and Federal agencies  Check if None

U.S. HOUSE OF REPRESENTATIVES, U.S. SENATE

18. Name of each individual who acted as a lobbyist in this issue area

First Name	Last Name	Suffix	Covered Official Position (if applicable)	New
John	Breaux		US Senator (18 yrs), US Representative (2 yrs)	<input type="checkbox"/>
Victoria	Cram			<input type="checkbox"/>
Matthew	Cutts			<input type="checkbox"/>

19. Interest of each foreign entity in the specific issues listed on line 16 above  Check if None