

# Political Representation and Fiscal Policy: A Casual or Causal Relationship?

Jon H. Fiva\*      Olle Folke†      Rune J. Sørensen‡

October 26, 2011

## Abstract

Representation of many individual parties is commonly seen as one of the key determinants of policy in proportional representations system. However, estimating the causal effect of political representation is complicated. Because party representation is not randomly assigned, both observable and unobservable factors influence policy outcomes as well as party representation. In majoritarian systems this has been addressed by exploiting the fact that political representation is essentially random around the 50% threshold in the vote share. While there is only one such discontinuity in majoritarian election systems, there are several small discontinuities in PR systems around the thresholds for changes in the seat allocation. In this paper we utilize these to identify the causal effect of party representation using the method of Folke (2011). We apply the method to a large panel data set on spending and tax decisions from Norwegian municipalities. We document a causal effect of party representation in the local councils on property taxation and user charges. We use survey data on Norwegian politicians to show that these effects correspond to the party platforms. There is less evidence for an effect for spending policies.

*Keywords:* Fiscal Policy, Political Parties, Proportional Representation, Regression Discontinuity

*JEL Classification:* C23, D72, H71, H72

— *Preliminary and incomplete, please do not cite* —

---

\*Norwegian Business School. E-mail: jon.h.fiva@bi.no

†SIPA Columbia University and IFN, E-mail: of2152@columbia.edu

‡Norwegian Business School. E-mail: rune.sorensen@bi.no

# 1 Introduction

The strength of parties in elected assemblies should influence actual policies, as long as party platforms diverge. A higher seat share to a left-wing party should, for example, lead to higher taxes. To identify such causal effects of political representation are, however, complicated. The main empirical challenge is that parties' policy positions and voter preferences are likely to be related. To circumvent this problem, many recent studies of political partisanship utilize that representation changes discontinuously at the fifty percent vote threshold (e.g., Lee et al. (2004), Ferreira and Gyourko (2009), Pettersson-Lidbom (2008), Lee (2008)). In this paper we follow this strand of literature, looking for political partisanship in Norway. We utilize that in proportional election systems there are several small discontinuities around the thresholds for changes in the seat allocation.

Following Folke (2011), we will compare policy outcomes when a party barely received or did not receive an extra seat. This regression discontinuity (RD) design allow us to pin down the causal effects of political representation on policy outcomes. The basic identifying assumption behind this causal claim is that what parties that end up on either side of a seat threshold is due to random uncontrollable events that are unrelated to how people vote.

Under proportional representations the number of seats of a party is affected by the votes of *all* parties. This makes it essentially impossible for a party to know ex-ante where the seat thresholds are going to be. Thus, the type of sorting found in close elections to the US House of representatives (Caughey and Sekhon (2011), Grimmer et al. (2011)). should be of little concern. Also, we can use a much smaller interval than in majoritarian systems to define close elections. We use 0.25 percentage points of the vote share rather than 2 percentage points which is typically used in majoritarian systems. This naturally makes sorting around the discontinuity much less likely, especially since the variation in a party's vote share for where the seat thresholds will be is typically larger than this.

Our empirical strategy consists of two steps. First, we define the fiscal policy pref-

erences by means of extensive survey data on politicians' preferred policies. These data suggest that left-wing parties want higher levels of taxes and user charges (for infrastructure purposes) than do right-wing parties. These data also indicate that left-wing parties prioritize child-care services more than the right-wing parties, while the reverse is the case for old-age care. These preferred policies appear to be quite invariant over time and across municipalities, which suggest little adaptation to the preferences of local electorates. Fixed party positions can be due to the hierarchical organization of political parties, or be understood in the context of political credibility (Alesina (1988)).

The second step is an extensive analysis of taxes, user charges and spending allocation. When we make use of the random component in the allocation of seat shares, we find that increased representation of left-wing parties causes significantly higher levels of property taxes and user charges. These estimates are larger than traditional OLS-estimates, and they are consistent with the survey data. The analysis of spending allocation is based on the observation that left-wing parties prioritize child-care and possibly schooling higher than do right-wing parties, while the reverse is the case for old-age care. We find no evidence that political parties influence actual expenditure allocation. We argue that the lack of party effects is due to relatively small disparities among the political parties, and that central government has imposed significant limitations on spending allocation.

Finally we combine the two steps to construct a formal test of consistency between our measures of their preferences and our estimated party effects. The basic set up of this test is that we instrument the average policy position in each municipality and year with the random component of the seat allocation derived from the RD design. These tests show that the estimated party effects are in the expected direction, although these estimate are typically too imprecise to be statistically significant.

## 2 The Impact of Local Political Parties

Whether a change in political representation at the local level impacts policy depends on several factors. We suggest three necessary preconditions:

1. Diverging Party Platforms
2. Influence in Elected Assembly
3. Policy-making Discretion

*Diverging Party Platforms:* The Downsian convergence theorem states that party competition will induce parties to propose identical policies. Under specific conditions, policies and policy proposals will converge towards the preferences of the median voter. In this case, political representation do not affect policies. A large literature has, however, modified this model, and developed modifications that suggest that political parties take diverging policy positions (e.g. Wittman (1983), Calvert (1985), Alesina (1988)).<sup>1</sup>

The current analysis focuses on multi-party systems. Though some models fail to generate equilibrium positions, the overall hypothesis is that vote-maximizing political parties will take policy positions which are spread out along the relevant conflict dimension (Merrill and Adams (2001, 2002)). If we discard the assumption of full turnout, political parties need to make a trade-off between coordinating and mobilizing core supporters versus attracting swing voters. Cox and McCubbins (1986) suggest that risk-averse political parties will cater for their core constituency. Parties will not take positions to attract swing voters, but (credibly) propose policies that muster their core supporters at the Election Day. Furthermore, in multi-party systems post-election bargaining plays a major role. Kedar (2005) and Duch et al. (2010) suggest that voters may therefore find it

---

<sup>1</sup>These models are developed to understand two-party systems. Wittman (1983) and Calvert (1985) discuss the role of information. Deviations from the median position may result from modifying the assumption that political parties only care about winning elections (i.e. parties have diverging preferences for policy) and that they have precise information about voter preferences (i.e. they are uncertain about the preferences of the median voter). Fixed party positions may also be due to commitment problems (Alesina (1988)).

beneficial to vote for political parties that take relatively extreme policy positions. If the outcome of policy negotiations is the weighted sum of policy positions times seat shares over all parties, political parties may gain votes by taking more extremist policy positions than their supporters.<sup>2</sup>

*Influence in Elected Assembly:* Suppose that party groups comprise council members with homogenous preferences, and that only one policy dimension is relevant (i.e. the left-right dimension). When the elected assembly make decisions by majority voting a reasonable prediction is that only changes in political representation that change the majority coalition will affect actual policies. According to this model the preferences of the median party are decisive for policy outcomes. However, one might also argue that political parties can influence decisions in proportion with their share of council members. Even non-pivotal parties may therefore have a causal effect on policy outcomes.

*Policy-making discretion:* Local governments do not take political decisions in isolation. In a unitary country, they are constrained by the financial and legal framework defined by the central government. Local authorities may be restricted both on the revenue side and the expenditure side. The extent to which local authorities can freely choose tax rates and user charges clearly impacts how local political representation affects policy. Similarly, restrictions on the expenditure side, such as entitlement legislations and minimum standards, also affects how local political representation affects policy. Central policy measures may therefore undermine local policy making discretion.

### 3 Institutional Setting

The Norwegian system of local government comprises about 430 municipalities and 18 counties.<sup>3</sup> The current analysis is based on data from the lowest level, the municipalities. The municipalities have a broad range of functions that include both individual welfare

---

<sup>2</sup>On the other hand, Huber and Powell (1994) suggest that governments in multi-party systems take policy positions (along the left-right axis) that are close to the median voter and closer to the median voter than do governments in two-party systems.

<sup>3</sup>Oslo, the capital, is left out of the analyses, since it is both a municipality and a county.

services and local public goods. Responsibilities include for the operation of kindergartens, primary schools, health centers/primary health services, social welfare, culture (cinema, sports, music schools, etc.), some clerical functions, transportation (primarily municipal roads), infrastructure services (water works, sewers, refuse collection and disposal), planning and construction, industry development, and operation of public utilities and tax collection.

Tax revenues account for about 45 percent of municipal revenues. Most of the tax revenues are collected as a proportional income tax. Central government stipulates the minimum and maximum levels of tax rates. All municipalities use the maximum tax-rates throughout the period analyzed here. Block grants and earmarked grants account for most of the other revenues. Municipalities have to take these revenue sources largely as given. They may, however, influence revenues from two additional sources. First, municipalities collect user fees in several sectors, primarily for kindergartens, old-age care and infrastructure services (sewage, water supply, and collection and management of garbage). Local governments may choose to subsidize some infrastructure services, which mean that user fees can be seen as implicit taxation (although the law stipulates that user charges cannot exceed production costs). Second, the property tax is a voluntary municipal tax. About 300 municipalities have currently adopted the property tax, and revenues from property taxes account for nearly 2 percent of total current revenues. These are important revenue sources on the margin. Local property taxes can be levied on both land and building facilities according to specific criteria. The tax rate must be at least 2 and maximum 7 per thousand of the taxable property value. When a property tax is introduced, 2 per thousand is the maximum rate the first year. Before the year 2007, residential property taxes could only be levied in urban settlements. Outside these areas, property taxes could only be levied on industrial plants. This is predominantly taxes on hydro power production facilities (see Andersen et al. (2010)). From the year 2007, residential property taxes can be collected in the whole municipality.

For a given level of revenues, local authorities can in principle allocate more or less

resources to those sectors which they prioritize most. Budgetary allocations are limited by entitlement legislation that grants each citizen a legal right to particular services. Primary schooling has always been subjected to such legislation, but it plays an increasing role in health care and nursing services also. Allocations are also restricted by a large number of minimum standards, particularly pertaining to staffing and personnel qualifications. Finally, matching grants for child care, and various types of central government 'action plans' (particularly for old-age care), are designed to induce the local governments to prioritize particular services.

The electoral system is based on proportional representation where each municipality is one electoral district. Seats in the local council was until 2003 allocated using the d'Hondt seat allocation method. From the 2003 election, onwards, the modified Sainte-Laguë seat allocation method have been in place.<sup>4</sup> Fiva and Folke (2011) study this electoral reform in detail.

The local council elect an executive board. If one member of the council demands a formal election, proportional representation shall be applied. Therefore, all the larger political parties are represented in the board. As compared to a parliamentary system, this institutional setting may reduce the impact of being in majority and minority in the local council.

## 4 Data

In this paper we rely on two data sources. The main analysis is built around a panel data set on tax and spending policies, covering around 400 municipalities over the period 1984 to 2009. In addition, we use data from an extensive survey questionnaire to measure council members' preferences for particular municipal spending programs and tax policy. In this section we first present data on political representation. We then move on to the survey data. And finally we present the fiscal policy data.

---

<sup>4</sup>A few counties and Oslo have introduced a parliamentary system. These authorities are not included in the empirical analyses.

## 4.1 Descriptive Statistics on Political Representation

Table 1 offer descriptive statistics on political representation for all parties. The main political divide in Norway goes between the left-leaning socialist and the right-leaning conservative camp. The Labor Party (DNA) is the dominant party within the left-leaning block, which also consist of the Socialist Left Party (SV) and Red Electoral Alliance (RV). The right-leaning block consist of five parties and is more fragmented. These parties are the Center party (SP), the Christian Peoples' Party (KrF), the Liberal Party (V), the Conservative Party (H) and the Progress Party (FrP). In addition there are independent party lists (INDEP), not represented at the national arena, small parties that fail to obtain much nationwide support (OTHER) and joint lists of several parties (JOINT). In the survey data we do not separate between these three types of parties, and just refer to them as 'other parties'. We collapse the data for each election period. This gives us 2266 observations for 6 election periods.<sup>5</sup>

## 4.2 The Spending Preferences of Local Council Members

The survey data comprises information for all council members for 120 municipalities for the election periods 1991-1995, 1995-1999, 1999-2003, 2003-2007, 2007-2011 (response rates: 60-65 percent).<sup>6</sup> Previous studies using an early subset of this data set include Sørensen (1995) and Borge and Sørensen (2002).

We measure spending preferences by survey questions related to individual budgetary items. We use these survey responses to measure preferences of the eight broader spending programs that municipalities have responsibility for, and which corresponded to spending data derived from the accounting database.

---

<sup>5</sup>Our research design requires voting data for all parties that run in the municipal elections. Since Statistics Norway lumps together respectively votes for party independent lists, party list other than the main eight parties, and joint list, we have to exclude about 10 percent of all observations. These are municipalities that have more than one independent party list, one "other" party list, or one joint list. We also exclude observations where we fail to match exactly the Seat-distribution from Statistics Norway (about 2 percent of the observations).

<sup>6</sup>Municipalities are drawn as a random sample of municipalities. The survey questions were also answered by majors and deputy majors in the remaining municipalities. For further documentation about the survey data, see Monkerud (2007).

The largest differences in party platforms are found for child care and old-age care spending (see Table 2). Left-wing parties, in particular the Socialist Left Party, want to increase spending on child care. Right-wing parties, in particular the Progress Party, want to increase spending on old-age care. In addition we observe a modest tendency for right-wing parties to prioritize the transportation sector. Parties appear to agree on (cut-backs) on cultural spending, with the exception of the Christian People's Party. For educational spending there are relatively muted differences across parties.

In the baseline analysis we will focus on the two services where party platforms seem to diverge the strongest: child care and old-age care. In an extension we look for party effects for other services as well. The difference across parties along this dimension are illustrated in the top line in Figure 1.

### **4.3 The Tax and User Charge Preferences of Local Council Members**

The question regarding property taxes covers three election periods (1999-2003, 2003-2007, 2007-2011). Preferences were measured by the following question:

*What is your position regarding property taxes in your local government? Do you have property tax in your municipality?*

- If no, do you think property taxes should be introduced?
- If yes, do you think the property tax should be abolished, reduced, maintained at the present level, or increased to a higher level than today?

The property tax variable was coded 1 if the respondent wanted to introduce, maintain or increase existing property taxes. The variable was coded 0 if the respondent preferred to not to introduce property taxes, or alternatively, to abolish or reduce existing property taxes.

Preferences of user charges were measured by survey questions covering the two last surveys (2003-2007; 2007-2011). The formulation used was:

*To what extent do you think the municipality should increase or decrease user charges for the following services?*

The council members were asked to state their opinion (among others) about water supply, sewage and garbage collection and disposal. For each of the three services, the respondents stated whether charges should be reduced (coded -1), maintained at the present level (coded 0), or increased (coded 1). We use the average score for these variables as an overall measure of council members' preferences for user charges.

In Table 3 we present descriptive statistics for the council members' tax and user charge preferences. With the exception of "other parties", the political parties arranged from the left (on the top) to the right. Party affiliations have a strong bearing on preferences for property taxation. Almost none of the Progress Party representatives, and only 10 percent of the Conservative party council members, want to introduce, or maintain, or increase property taxation. On the other side of the political spectrum, 90 percent of the representatives of the Socialist Left Party and 65 percent of the Labor Party politicians want property taxes. About 40-48 percent of the members of the Center Party, the Christian Peoples' Party and the Liberal Party prefer property taxes, which mean that their preferences are more aligned with the Labor Party than with the Conservative Party. This suggests that preferences for property taxes are highly polarized along the left-right axis (as illustrated in the bottom line of Figure 1). We find a similar, but slightly smaller polarization for user charge preferences (illustrated in the middle line of Figure 1).

#### **4.4 The Importance of the National Party Line**

Most of the elected local councils are members of local as well as national party organizations. (The exception is the so-called local lists.) The national party organization forms a party label that attracts groups of local politicians, and the national organizations may influence the policy positions of their subsidiary party groups. A relevant question is therefore whether the policy positions of a particular local council party group differ from groups belonging to the same political party in another municipality. Another question

is whether the policy positions of particular local council party groups are stable over time. Finally, we would like to know whether variations in policy preferences vary within and between local council party groups. We may write the saturated model as follows:

$$Y_{impt} = \alpha_p + \alpha_m + \alpha_t + \alpha_{pm} + \alpha_{pt} + \alpha_{mt} + \alpha_{mpt} + \varepsilon_{impt} \quad (1)$$

where  $Y_{impt}$  is the (generic) preference measure of the individual council member  $i$ .

The response variable comprises stated preferences for property taxes, user charges and spending on the young relative to the elderly, respectively. The final category is defined as the survey response on child care less the survey response on old-age care.

The first parameter  $\alpha_p$  captures the effect of being member of a national party  $p$ ,  $\alpha_{pm}$  gives the extent to which the members of the same party have diverse preferences in different municipalities  $m$ ,  $\alpha_{pt}$  shows the extent to which the national party effect varies between election periods  $t$ , and finally,  $\alpha_{mpt}$  represents the additional possibility that party effects vary between municipalities and over time. The fixed-effects parameters for municipality, election period and the interaction between the two are estimated as controls in the model.

Since all variables are dummy variables, we estimate a linear probability model (for discussion and justification, see Angrist (2001)). The variances of the relevant parameters suggest whether we can interpret local preferences as resulting from a fixed national party line, policy positions that vary between municipalities, over time, or both. The variance of the stochastic residual captures the extent to which individual preferences vary within local party groups.<sup>7</sup>

The striking observation from Table 4 is the complete dominance of the national party effect. For all three preference indexes, the mean sum of squares is much larger for political party than the other variables. Estimates for the period effect are more interesting for the spending index since we only have limited time-variation for user charges and

---

<sup>7</sup>We present estimates for the variances of  $\alpha_{pm}$  and  $\alpha_{mpt}$  across all parties. One might have estimated these variances separately for each political party to see whether policy positions are more homogenous in some parties than others.

property taxes, and much more longitudinal variation for spending preferences. Spending preferences for child care relative to old-age care was low in the first election period covered by data (1991-1995), it increased to a peak level in the following election period, and declined modestly in the following two election periods. It is particularly interesting the party effect does not vary much across municipalities. Political parties appear to have surprisingly similar policy platforms in different municipalities. The R-squared statistic suggests that the model explains about half of the variation in individual spending preferences. We consider explained variance to be surprisingly high given the random measurement errors that necessarily comes with using a survey instrument to tap politicians' policy preferences.

## 4.5 Designing Fiscal Policy Indexes

The micro-data analysis suggests that the party label is a strong predictor of policy preferences. More important, for a given party attachment, we observe very modest variations over time and across municipalities. For a given political party ( $p$ ), we therefore define the policy positions  $Q_p^j$  for fiscal policy  $j$  (spending on young vs old, property taxation, user charges) as invariant over time and space. Let  $S_{pit}$  denote the share of representatives held by party  $p$  in municipality  $i$  in election period  $t$ , the policy index is defined as follows:

$$I_{it}^j = \sum_{p=1}^{p=P} Q_p^j \cdot S_{pit}, p = 1, 2, \dots, 9 \quad (2)$$

## 4.6 Fiscal Policy Data

Table 5 offer descriptive statistics on our three main dependent variables; property tax revenues per capita, user charges per capita and the ratio of spending on child care to spending on old-age care, denoted `SpendingYoungVsOld`.<sup>8</sup>

---

<sup>8</sup>The data set on spending policies was originally constructed for an analysis of how re-election probabilities affects public investment(Fiva and Natvik (2009)).

We have property tax data for the period 1991 to 2009. Prior to 2007, residential property taxation was restricted to urban areas. We therefore present results where we exclude municipalities with less than 2,500 inhabitants. This is the same cut-off as used by Fiva and Rattsø (2007) which study the choice of levying residential property taxation. We also exclude municipalities that receive substantial revenues from commercial property taxation, which is basically a tax on hydro power production.<sup>9</sup> After this restriction we are left with 1096 observations, that have an average of NOK 234 per capita (deflated to 2007-NOK). This distribution is however very skewed.

User charges for infrastructure services (water supply, discharge of sewage and garbage collection) vary considerably across municipalities. The average is NOK 1316 per capita (deflated to 2007-NOK). As emphasized in previous papers (Borge (1995, 2000), Blom-Hansen et al. (2006)) the setting of user charges for these services are an important source of revenue for Norwegian municipalities.<sup>10</sup>

In the time period we study spending on child care and old-age care account for 5 percent and 22 percent of total spending. The ratio of spending on child care to spending old-age care is on average about 28 percent. Again there is dramatic differences across municipalities. Some municipalities spend almost nothing on child care relative to old-age care, while other spend almost three times as much at child care than on old-age care.

---

<sup>9</sup>We are not able to separate between residential and commercial property taxation for most of the period that we have data. However we do have data from 2007 and onwards. This data shows that the commercial property tax revenue dwarfs, in per capita terms, residential property taxation for some particular municipalities. In 2007, the maximum per capita commercial property tax revenue is about NOK 52,000, while the maximum per capita residential property tax revenue observed in the data is about NOK 2,000. Since commercial property taxation revenues is largely determined by topography (see Andersen et al. (2010)), it is not very interesting for the purpose of this paper. Therefore, we exclude those municipalities that have more than NOK 2,000 in commercial property tax revenues in 2007 from this study.

<sup>10</sup>User charges for infrastructure services account for about half of the total revenues from user charges, the remainder stem from user charges for child and old-age care (Borge (2000)).

## 5 Identification Strategy

In this section, we give a brief description of our identification strategy. For a more detailed description of it we refer to Folke (2011).

First we need to introduce some notation that is used throughout the paper. There are  $P$  parties indexed by  $p = \{1, 2, 3, \dots, P\}$ . The number of votes for party  $p$  is denoted  $v_p$ , and the total number of votes is  $V = \sum_1^P v_p$ . The vector  $\mathbf{V}_P = (v_1, v_2, v_3, \dots, v_P)$  contains the votes for all parties. Analogously, the number of seats of party  $p$  is denoted  $\tilde{s}_p$ , and the total number of seats is  $S = \sum_1^P \tilde{s}_p$ . The seat share of party  $p$  is denoted  $s_p = \frac{\tilde{s}_p}{S}$ , and  $\mathbf{S}_P = (s_1, s_2, s_3, \dots, s_P)$  is a vector of the seat shares of all parties.

For simplicity, we use three parties in all models and examples in this section. This is the simplest setting that captures the specific characteristics of proportional election systems. Extending the models and examples to more than three parties is straightforward and does not require any changes in the model.

Given an allocation of votes, seats are allocated by the function  $\tilde{s}_p = f(\mathbf{V}_P, S)$  based on, for example, the Sainte-Laguë or the d'Hondt method. A detailed description of seat allocation methods in proportional election systems and how to adopt the method developed in this paper to different seat allocation methods can be found in the Appendix of Folke (2011).

### 5.1 Identification Problem

In this paper we which estimate the effect of party representation, defined as the seat shares,  $\mathbf{S}_P$ , of parties, on some policy,  $y$ , in municipality  $i$ . Let us assume that do so with a linear model:

$$y_i = \alpha + \beta_1 s_{1i} + \beta_2 s_{2i} + \varepsilon_i. \quad (3)$$

In this specification with three parties, Party 3,  $p = 3$ , is omitted and used as the reference case. Thus, we estimate the effects of Party 1 or Party 2 when their representation increases at the expense of Party 3.

The identification problem arises because party representation is likely to be correlated with the error term because voter preferences may directly affect policy,  $\varepsilon_i = k(\mathbf{V}_P) + u_i$ , where  $k(\mathbf{V}_P)$  is an unknown function of the vote shares of the parties. Inserting this error term into the above equation yields

$$y_i = \alpha + \beta_1 s_{1i} + \beta_2 s_{2i} + k(\mathbf{V}_P) + u_i. \quad (4)$$

Omitting or miss-specifying  $k(\mathbf{V}_P)$  implies that  $\mathbf{S}_{P_i}$  will be correlated with the error term and the estimated coefficients in  $\beta$  will be inconsistent.

The effect of voter preferences on policy, described by  $k(\mathbf{V}_P)$ , might arise in many ways. For example, conservative politicians get a larger seat share in conservative districts. Conservative districts are different from less conservative ones in many respects - presumably higher income, higher education, etc.- and we do not know how to disentangle the policy effects of seat allocations from these other characteristics. There could also be a direct effect of voting on policy outcomes. Voting for a party could also have a direct effect by signalling voter preferences to politicians. A final problem is that of reverse causality, that is the policy outcome can influence voting behavior.

To solve this identification problem, we will essentially compare policy outcomes when a party barely received or did not receive an extra seat. The fundamental identifying assumption is that the marginal seat is randomly allocated when we are sufficiently close to a threshold for a seat change.

## 5.2 Seat Thresholds, Distance and Closeness

Before specifying the model to be estimated, we must first precisely define seat thresholds, vote distances to thresholds, and being close to a threshold. In comparison to in a majoritarian system this becomes much more complicated in a proportional election system. The basic reason for this is that the number of seats of a party is affected by the votes of *all* parties. Consequently, the distance to a seat change cannot be measured only

using the vote share of an individual party. For example, the vote share at which a party will receive its first seat depends on how the remaining votes are distributed across the other parties. This implies that a party may experience a seat change while keeping its vote share constant. This means that we cannot measure the distance to a seat change in a party’s individual vote share.

Instead we define the *distance* to a seat thresholds as the minimal change in vote across all parties that would lead to a seat change, for a detailed description of this measure see Folke (2011). We will define observations as *being close* to a threshold if the *minimal distance to seat change* is less than a cutoff point, denoted by  $\lambda$ . Throughout the paper we will follow Folke (2011) and define  $\lambda = 0.25$  percentage points.<sup>11</sup>

### 5.3 Specification

We now return to the specification of the model to be estimated, which will compare outcomes in elections where a party has barely received an extra seat to elections where it has barely not.

To implement this specification, we need two indicator variables. One variable indicates all observations where a party is *close* to a threshold. The other variable indicates whether the party is *close* to and *above* or *below* such a threshold. This is the treatment variable. Formally, we define binary indicator variables for each party,  $c_p$ , which takes the value of  $\frac{1}{2}$  for all observations where the party is within *distance*  $\lambda$  from a threshold, that is, for observations *close* to a threshold.<sup>12</sup> We also define the treatment variables  $t_p$ , which equal  $-\frac{1}{2}$  if party  $p$  is *close* to and *below* a threshold,  $\frac{1}{2}$  if  $p$  is *close* to and *above* a threshold, and zero otherwise. We normalize this by assuming that the effect of an additional seat depends on the total number of seats in the legislature and thus, we

---

<sup>11</sup>The bandwidth choice is somewhat arbitrary due to the fact that the empirical setting does not allow for optimal bandwidth tests. It is therefore important to note that the main results of the paper are not sensitive to bandwidth choice.

<sup>12</sup> The choice of  $\lambda$  is a trade-off between precision and internal validity. Decreasing  $\lambda$  reduces the number of identifying observations, thus reducing the precision of the estimated effects. The benefit is that decreasing  $\lambda$  increases the certainty that the identifying assumption holds. There is no formal rule for choosing  $\lambda$  in this setting, making the choice of  $\lambda$  a call of judgement.

divide the treatment and control variables by this number. That we use  $-\frac{1}{2}$  and  $\frac{1}{2}$ , rather than 0 and 1, is that it that we need to put a weight on the negative treatment, which would not be possible if we used 0 when the party ends up on the left side of the seat discontinuity.

The specifications we investigate are of the form

$$y_i = \alpha + \gamma_1 \frac{c_{1i}}{S_i} + \gamma_2 \frac{c_{2i}}{S_i} + \beta_1 \frac{t_{1i}}{S_i} + \beta_2 \frac{t_{2i}}{S_i} + g(\mathbf{V}_{Pi}) + \varepsilon_i, \quad (5)$$

where  $g(\mathbf{V}_{Pi})$  is a function of the vote shares of all parties. This specification compares outcomes when parties are just below or just above a threshold to receive more seats. The fundamental identifying assumption is that within this range, it is essentially random whether a party receives a seat, implying that  $\text{corr}(\frac{t_{1i}}{S_i}, \varepsilon_i) = \text{corr}(\frac{t_{2i}}{S_i}, \varepsilon_i) = 0$ .<sup>13</sup> Since only observations close to the seat thresholds are used for identification, the control function,  $g(\mathbf{V}_{Pi})$ , is only needed to reduce residual variation, not to get consistent estimates.

Note that the effect of a certain party gaining or losing a seat depends on what other party is on the other side of the threshold. The effect on taxes of a centrist party gaining a seat could have a different effect if it gains the seat at the expense of a right-wing party or a left-wing party. In one case, the effect is  $\beta_{centrist} - \beta_{right-wing}$ , in the other the effect is  $\beta_{centrist} - \beta_{left-wing}$ . By simultaneously estimating the effect of all parties, this possibility is taken care of.

## 5.4 Policy Position Index

To test how well the estimated party effects,  $\beta_p$ , corresponds to policy positions of the parties we use a simple test. The basic idea behind the test is to see if the as good as random seat variation, defined by the treatment variable,  $t_p$ , can be used to predict policy.

---

<sup>13</sup>Note that  $\text{cov}(\frac{t_{1i}}{S_i}, \varepsilon_i) = E \left[ (t_{1i} - \bar{t}_{1i}) \left( \frac{1}{S_i} - \frac{1}{\bar{S}_i} \right) \varepsilon_i \right] = E \left[ E \left[ (t_{1i} - \bar{t}_{1i}) \varepsilon_i \mid S_i \right] \left( \frac{1}{S_i} - \frac{1}{\bar{S}_i} \right) \right] = 0$  if  $E \left[ (t_{1i} - \bar{t}_{1i}) \varepsilon_i \mid S_i \right] = 0$ , that is if the treatment is uncorrelated with  $\varepsilon_i$  for all legislature sizes,  $S_i$ .

The set up of this test is straight forward. Instead of using specification 5 to estimate the effect of each party on the policy outcomes we use it as a starting point of a 2SLS. In the first stage regression, defined by specification 5, we use the treatment variables for all parties,  $t_p$ , as instruments for the policy index. An important thing to note is that we use constant party positions to calculate the policy indexes. This means that we do not need to put any weights on the treatment variables in the first state since their effect will be constant across municipalities and years. In the second stage, we once more use equation 5, but replace the treatment variables with the fitted value of the policy position index from the first stage.

One way to see this tests is that it allows us to see if the as good as random differences in the seat allocation pushes policy in the expected direction. If this is the case we would get a positive effect. Incorrectly measured policy preferences would from this perspective bias the estimate towards zero.

## 6 Results

In Table 6, 7 and 8 we document how political representation affects property taxation, user charges and spending priorities. In each of these Tables, column (1) is a simple OLS regressions including demographic control variables, election period and municipality fixed effects. These results are useful as a comparison to our main analysis, which are presented in specification (2), (3) and (4). In these specification variation in party representation only stem from municipalities close to a threshold for a seat change. I

In specification (4) we include election period and municipal fixed effects, demographic controls and a fourth order polynomial in each parties' vote share. In column (2)-(3), we document how sensitive the results are to the omission of municipal fixed effects or demographic controls. If the regression discontinuity approach is isolating 'as good as random variation', the results should be insensitive to these changes. Note that it is not obvious that the demographic controls should be included in the analysis, since they may

be endogenous due to Tiebout sorting.

The reference category in all specification is the party with the largest average seat share, the Labor Party (AP). We do not report party effects of joint, other or independent lists.

## 6.1 Property Taxation

In Table 6 we document a negative parameter estimates for all parties, indicating a positive causal effect of increased representation from the Labor Party on tax policy. Which of the effects that are statistically significant is dependent on specification. But the point estimates are relatively insensitive to whether we include municipality fixed effects or demographic controls.

The point estimates of -3.2 for the Liberal Party (V), in the most extensive specification, indicate that a 10 percentage points increase in the seatshare would reduce property tax revenues per capita with NOK 350, respectively. These effects correspond to about one standard deviation change in property taxation.

Also for the OLS results we find seatshares of all parties to be negatively associated with tax levels, relative to the Labor Party, but the effects are statistically significant only for the Conservative Party (H). The point estimates are however much smaller in magnitude than in our RD specification. Even the largest party effect in the OLS analysis, of about -0.4 for the Conservatives (H), is only about 1/5 of the RD estimates for the same party.

Why does the OLS estimates seem to give downward biased estimates? One potential explanation is that voter behavior is affected by implemented policy. For example, if voters respond to high tax levels by voting for 'low tax parties' (or vice versa), then naively regressing tax policy on political representation would exhibit a negative bias. The RD estimates, which in a flexible way controls for voter preferences, would not be contaminated by this effect.

## 6.2 User Charges

In Table 7 we present results for user charges. The results resemble those documented for property taxation. The point estimates in preferred specification (2) clearly follow the left-right dimension (with the exception of the effect of the Red Electoral Alliance, which is very imprecisely estimated). There are negative and sizeable effects for four of the five parties from the right-wing conservative camp. The effects are also statistically significant at the five percent level. Including municipality fixed effects, which excludes a lot of variation in the data, find statistically significant effects only for the Conservatives (H).

A point estimate of around -5 indicate that a one standard deviation increase in the seatshare of the Concervatives (i.e. a 10 percentage point increase) at the expense of the Labor Party would reduce user charges with NOK 500 per capita, or about half a standard deviation. Again the OLS results seem to be downward biased.

## 6.3 Spending

In Table 8 we document results for spending priorities. As discussed above, we focus on spending on child care relative to old age care, since survey data indicate that is the most salient dimension of political conflict on spending policy.

In contrast to the results for tax and fee policies, there are considerably less evidence for any party effects on spending policies. The OLS results indicate some statistically significant associations between party representation and spending, but the party effects goes in the opposite direction of what the survey data suggests.

In specification (2) we find no statistically significant party effects. The point estimates for the Socialist Left Party (SV) and the Progress Party (FrP) do, however, go in the expected direction. These point estimates are however very sensitive to the choice of specification.

We have also experimented with more detailed dependent variables, to capture po-

tential party effects on spending priorities. We have investigated whether the fraction of spending on child care, education, old-age care, health care, culture, transportation, administration or 'other' are affected by political representation. We fail to obtain robust evidence for this conjecture across a wide range of specifications.<sup>14</sup>

## 6.4 Relating Party Effects to Preferred Policies

In Figure 2, 3 and 4 we illustrate how the estimated party effects (from our specification (2)) relate to council member's stated preferences. For the property tax the estimated effects correspond well with the positions with one exception, the Center party (SP), which has a more negative effect than what we would expect according to their policy position. For user charges the estimated effects all line up well with the policy positions. For spending the estimated effects are consistent with the party positions, but they change substantially if we add municipality fixed effects.

## 6.5 Policy Index

Table 9, 10 and 11 represents party effects when seat shares of each party is replaced with the corresponding policy indexes (which are instrumented with our treatment variables). For property taxes the effects for in the expected direction, although is not statistically significant. If we go back to we can find the reason for this Figure 2. Given that the effect of the Center party (SP) is inconsistent with the policy position this will impact how well the instrumented index performs in predicting policy outcomes. For user charges the effect is also in the expected direction. Here it is statistically significant in one specification and almost significant in the other two. That the estimates are more precise in this case is due to the fact that all estimated party effects line up well with the policy positions see Figure 10. For spending policy there is more variation in the estimates, also it has the wrong sign in two of the three specifications. This comes as no

---

<sup>14</sup>Appendix Table 12 documents that across all eight spending categories and all six parties there are only two coefficients statistically significant different from zero.

surprise given the pattern we document above.

## 7 Discussion

We have documented causal party effects on tax policy, but not for spending policies. What are reasonable explanations for this discrepancy? We have argued that there are three dimensions required for representation to have an effect on policy outcomes at the local level.

1. Diverging Party Platforms: In the case of property taxes and user charges, the RD-estimates suggest that party platforms do matter. Party preferences are sufficiently different to produce policy changes. In the case of spending allocation, the estimates indicate no party effects. Policy preferences appear to be more moderate than for taxes and user charges. Still, the platforms of the Progress Party and Socialist Left party deviate significantly from the preferences of the others. The explanation for the lack of party effects on spending allocation is unlikely to be only a consequence of converging party platforms.
2. Influence in Elected Assembly: A political party is pivotal when it can shift policies by supporting one proposal rather than the alternative. In a one-dimensional world like the left-right axis, we should expect the median party to be decisive. Our estimation approach capture an average causal effect of changes in political representation. This approach may conceal important effects at for example the 50 percent threshold. However, the fact that we obtain eloquent estimates for taxes and user charges suggests this 'average effect'-approach is able to detect party effects. This may suggest that a more a more refined approach to the analysis of spending allocations (perhaps one where we only allow the median party to affect policies) would not produce different results.<sup>15</sup>

---

<sup>15</sup>We intend to pursue this question in future research.

3. Policy-making discretion: Spending allocation is severely limited by three types of central government regulations. The age-related welfare services are to a large extent perceived to be a central government responsibility. The grant system, minimum quality standards and individual entitlements are pervasive in the local government sector. Despite numerous attempts to deregulate the sector, local discretion remains limited. On the other hand, child care and old-age care are probably less subjected to regulations than are schooling and health care services. These sectors are expanding, which should allow local authorities some degree of influence. Lack of discretion could be part of the explanation for no party effects on spending.

## 8 Conclusion

The basic message from our analysis of party preferences is that parties have relatively stable policy platforms across Norwegian municipalities. This implies that voters influence policies by deciding parties seat shares, and not that political parties adjust to the preferences of the local electorates. Furthermore, the RD setup shows that the left-right axis is the important one. An exogenous shift in the share of left-wing parties (at the expense of a right-wing party) will increase property taxes and user charges, but not affect spending allocation in a systematic way. We argue that these effects are causal - not casual.

Further research should address the policy-making mechanisms in local government. In particular, it would be interesting to see how party effects are conditioned by central government regulations. We have seen tighter regulations in health care and old-age care, and some degree of deregulation in the education sector. It would be interesting to see how discrete shifts in the regulatory environment impede or promote the impact of political parties.

Finally, supplementary analyses should focus on other policy areas. One examples are levels of user charges in the welfare sector (child care, old-age care), where we would expect

to see lower charges in municipalities where the left-wing parties have a strong position. Another example is the extent to which municipalities outsource service production to private companies or non-profit organizations. This is a controversial issue where we would expect to see strong party effects.

## References

- Alesina, A. (1988). Credibility and policy convergence in a two-party system with rational voters. *American Economic Review*, 78:796–806.
- Andersen, J. J., Fiva, J. H., and Natvik, G. J. (2010). Voting when the stakes are high. CESifo Working Paper Series No. 3167.
- Angrist, J. D. (2001). Estimation of limited dependent variable models with dummy endogenous regressors: Simple strategies for empirical practice. *Journal of Business and Economic Statistics*, 19(1):pp. 2–16.
- Blom-Hansen, J., Monkerud, L. C., and Sørensen, R. (2006). Do parties matter for local revenue policies? a comparison of denmark and norway. *European Journal of Political Research*, 45(3):445–465.
- Borge, L.-E. (1995). Economic and political determinants of fee income in norwegian local governments. *Public Choice*, 83(3-4):353–73.
- Borge, L.-E. (2000). Charging for public services: the case of utilities in norwegian local governments. *Regional Science and Urban Economics*, 30(6):703–718.
- Borge, L.-E. and Rattsø, J. (2008). Property taxation as incentive for cost control: Empirical evidence for utility services in norway. *European Economic Review*, 52(6):1035 – 1054.
- Borge, L.-E. and Sørensen, R. J. (2002). Aggregating spending preferences: An empirical analysis of party preferences in norwegian local governments. *Public Choice*, 110:225–243.
- Calvert, R. L. (1985). Robustness of the multidimensional voting model: Candidate motivations, uncertainty, and convergence. *American Journal of Political Science*, 29(1):pp. 69–95.

- Caughey, D. M. and Sekhon, J. S. (2011). Elections and the regression-discontinuity design: Lessons from close u.s. house races, 1942-2008. *Political Analysis*.
- Cox, G. W. and McCubbins, M. D. (1986). Electoral politics as a redistributive game. *The Journal of Politics*, 48(02):370–389.
- Duch, R. M., May, J., and Armstrong, D. A. (2010). Coalition-directed voting in multi-party democracies. *American Political Science Review*, 104(04):698–719.
- Ferreira, F. and Gyourko, J. (2009). Do Political Parties Matter? Evidence from U.S. Cities. *Quarterly Journal of Economics*, 124(1):349–397.
- Fiva, J. H. and Folke, O. (2011). Mechanical and psychological effects of electoral reform. CESifo Working Paper Series No. 3505.
- Fiva, J. H. and Natvik, G. J. (2009). Do re-election probabilities influence public investment? CESifo Working Paper Series No. 2709.
- Fiva, J. H. and Rattsø, J. (2007). Local choice of property taxation: Evidence from norway. *Public Choice*, 132:457–470.
- Folke, O. (2011). Shades of brown and green: Party effects in proportional election systems. Unpublished manuscript, Columbia University.
- Grimmer, J., Hersh, E., Feinstein, B., and Carpenter, D. (2011). Are close elections random? Unpublished manuscript, Stanford University.
- Huber, J. D. and Powell, G. Bingham, J. (1994). Congruence between citizens and policymakers in two visions of liberal democracy. *World Politics*, 46(3):pp. 291–326.
- Kedar, O. (2005). When moderate voters prefer extreme parties: Policy balancing in parliamentary elections. *American Political Science Review*, 99(02):185–199.
- Lee, D. S. (2008). Randomized experiments from non-random selection in u.s. house elections. *Journal of Econometrics*, 142(2):675–697.

- Lee, D. S., Moretti, E., and Butler, M. (2004). Do voters affect or elect policies? evidence from the u.s. house. *Quarterly Journal of Economics*, 119(3):807–859.
- Merrill, S. and Adams, J. (2001). Computing nash equilibria in probabilistic, multiparty spatial models with nonpolicy components. *Political Analysis*, 9(4):347–361.
- Merrill, S. and Adams, J. (2002). Centrifugal incentives in multi-candidate elections. *Journal of Theoretical Politics*, 14(3):275–300.
- Monkerud, L. C. (2007). Undersøkelse av lokalpolitikere 2006/2007. en redegjørelse for undersøkelsens gjennomføring og datakvalitet - samt noen hovedtendenser. BI Discussion Paper 1/2007.
- Petterson-Lidbom, P. (2008). Do parties matter for economic outcomes: A regression-discontinuity approach. *Journal of the European Economic Association*, 6(5).
- Sørensen, R. J. (1995). The demand for local government goods: The impact of parties, committees, and public sector politicians,. *European Journal of Political Research*, 27:119–141.
- Wittman, D. (1983). Candidate motivation: A synthesis of alternative theories. *The American Political Science Review*, 77(1):pp. 142–157.

Table 1: Descriptive Statistics: Seatshares

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min.</b>	<b>Max.</b>
seatshare_RV	0.003	0.012	0	0.148
seatshare_SV	0.057	0.058	0	0.471
seatshare_DNA	0.353	0.135	0	0.882
seatshare_V	0.043	0.053	0	0.462
seatshare_SP	0.175	0.132	0	0.667
seatshare_KRF	0.087	0.079	0	0.560
seatshare_H	0.163	0.1	0	0.529
seatshare_FRP	0.049	0.066	0	0.457
seatshare_Indep1	0.041	0.088	0	0.647
seatshare_Other1	0.008	0.04	0	0.615
seatshare_Joint	0.021	0.084	0	0.684
N		2266		

Table 2: The spending preferences of local council members (party average score on index)

Political party	Spending programs (Election periods 1991-1995 to 2007-2011)										Number of respondents
	Administration	Education	Child care	Health care	Elderly care	Transportation	Culture	Other			
Other parties (ANT)	-0,29	0,16	0,04	0,15	0,31	0,16	-0,12	-0,01			682
Red Electoral Alliance (RV)	-0,38	0,56	0,57	0,54	0,56	0,15	-0,09	0,04			79
Socialist Left Party (SV)	-0,20	0,35	0,34	0,30	0,33	0,01	-0,17	-0,03			752
Labor Party (DNA)	-0,16	0,19	0,16	0,19	0,29	0,14	-0,12	0,01			3381
Center party (SP)	-0,21	0,14	0,00	0,12	0,25	0,21	-0,02	-0,02			1517
Liberal Party (V)	-0,21	0,21	0,04	0,16	0,24	0,12	-0,01	-0,07			471
Christian Peoples' Party (KrF)	-0,22	0,16	0,01	0,19	0,28	0,12	0,11	-0,05			1037
Conservative Party (H)	-0,32	0,14	-0,03	0,10	0,28	0,21	-0,10	-0,05			1876
Progress Party (FrP)	-0,42	-0,03	-0,09	0,16	0,50	0,42	-0,38	-0,10			1083
<b>All</b>	-0,24	0,16	0,07	0,17	0,31	0,18	-0,11	-0,03			10878

The spending preferences were measured by a survey question related to individual spending items. Identical question formulations were used in the final autumn/winter of final year in local election period. The following formulation was used:

We are interested in knowing how you personally think the municipality should allocate its resources for the year x. (x=1995, 1999, 2003,2007,2011). We want you to compare with the situation in year x-1. Below is listed a series of local government responsibilities. We ask you to state whether you believe that the municipality should spend much less economic resources (that is a reduction of 5% or more), somewhat less resources (that is a reduction of 1-5%), about the same level of resources as in year x-1, somewhat more resources (that is an increase of 1-5%), or a large increase of resources (that is an increase of 5% or more). Remember that an increase in one spending area usually means cutbacks in other areas.)

Coding of spending indicators: Much less:-1; somewhat less:-0.5; about the same:0; somewhat more:+0.5; much more:+1.

Table 3: The tax and user charge preferences of local council members (party average score on index)

Political party	Taxation (Election periods 1999-2003, 2003-2007 and 2003-2011)		User charges on water, sewage and garbage collection and disposal (Election periods 2003-2007 and 2003-2011)	
	Property tax	Number of respondents	User charges	Number of respondents
Other parties (ANT)	0,28	378	-0,13	237
Red Electoral Alliance (RV)	0,80	46	-0,04	27
Socialist Left Party (SV)	0,90	471	0,07	327
Labor Party (DNA)	0,65	1946	-0,05	1266
Center party (SP)	0,48	834	-0,02	570
Liberal Party (V)	0,40	283	-0,02	192
Christian Peoples' Party	0,48	620	-0,02	369
Conservative Party (H)	0,10	1112	-0,18	723
Progress Party (FrP)	0,02	836	-0,40	638
<b>All</b>	<b>0,42</b>	<b>6526</b>	<b>-0,11</b>	<b>4349</b>

Average score on the share of council members who wants to introduce, maintain or increase property taxes.

Coding of property tax preferences: 1, if the respondent wanted to introduce, maintain or increase existing property taxes; 0 if the respondent preferred not to introduce property taxes, or alternatively, to abolish or reduce existing property taxes.

Coding of preferences of user charges: 1, if the respondent wants to reduce user charges; 0, if the respondent wants to maintain user charges at the present level; 1, if the respondent wants to increase user charges.

The responses comprises answers to questions about three service sectors: comprises water, sewage and garbage collection and disposal. The table displays the average responses.

Table 4: Local council members' preferences for increasing user charges, property taxes and increasing spending on young versus elderly. Linear probability model.

	User charges				Property taxes				Spending on child care vs. old-age care			
	DF	Mean SS	F-value	P-value	DF	Mean SS	F-value	P-value	DF	Mean SS	F-value	P-value
Party (P)	8	6,60	39,72	<.0001	8	29,30	245,34	<.0001	8	17,69	89,82	<.0001
Election period (E)	1	0,37	2,24	0.134	2	0,12	1,04	0.3534	4	6,51	33,04	<.0001
Local government (G)	368	0,24	1,45	<.0001	366	0,40	3,36	<.0001	377	0,23	1,19	0.009
Party* Local government	722	0,20	1,18	0.0022	785	0,24	2,04	<.0001	842	0,24	1,21	<.0001
Party* Election period	8	0,14	0,85	0.562	16	0,18	1,48	0,098	32	0,99	5,02	<.0001
Local government* Election period	119	0,24	1,45	0.001	238	0,23	1,93	<.0001	432	0,28	1,41	<.0001
Party* Election period* Local government	479	0,16	0,96	0.698	979	0,13	1,08	0,050	1887	0,20	1,01	0.366
R-squared			0.496				0.690				0.473	
Period covered by data:			2003-2011				1999-2011				1991-2011	

Mean SS: Mean Sum of Squares (Type III)

Table 5: Descriptive Statistics, Spending, Property Taxation and User Charges

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min.</b>	<b>Max.</b>	<b>N</b>
SpendingYoungVsOld	27.76	17.454	2.361	277.947	2264
PerCapPTAX	0.234	0.377	0	2.106	1096
PerCapUserCharges	1.316	1.012	0	14.426	2183

Table 6: Property Taxation and Political Representation

	(1)	(2)	(3)	(4)
seatshare_RV	0.69 (0.92)	0.32 (5.67)	-0.46 (4.59)	0.70 (4.24)
seatshare_SV	-0.28 (0.23)	-3.05 (2.18)	-2.66* (1.50)	-2.37 (1.53)
seatshare_V	-0.23 (0.27)	-1.54 (2.27)	-3.75** (1.56)	-3.23** (1.51)
seatshare_SP	-0.30 (0.21)	-4.14** (1.87)	-0.94 (1.20)	-0.90 (1.21)
seatshare_KRF	0.27 (0.29)	-1.29 (2.03)	-0.56 (1.37)	-0.43 (1.38)
seatshare_H	-0.38* (0.23)	-2.90 (1.90)	-1.93* (1.17)	-1.85 (1.18)
seatshare_FRP	-0.15 (0.25)	-3.40 (2.09)	-2.02 (1.43)	-1.78 (1.45)
<i>N</i>	1095	1095	1081	1081
adj. $R^2$	0.397	0.193	0.198	0.230
Method	OLS	RDD	RDD	RDD
Interval	-	0.25	0.25	0.25
Polynomial	No	Yes	Yes	Yes
TimeFE	Yes	Yes	Yes	Yes
MunicipFE	Yes	No	Yes	Yes
Controls	Yes	No	No	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 7: User Charges and Political Representation

	(1)	(2)	(3)	(4)
seatshare_RV	0.91 (1.57)	-5.68 (5.36)	2.23 (4.68)	2.23 (4.68)
seatshare_SV	-0.00 (0.49)	0.30 (3.16)	0.57 (3.01)	0.68 (2.96)
seatshare_V	-0.00 (0.71)	-1.14 (3.84)	-0.34 (3.01)	-0.00 (2.96)
seatshare_SP	-0.16 (0.28)	-3.95** (1.90)	-2.58 (1.72)	-2.43 (1.76)
seatshare_KRF	0.42 (0.51)	-5.28** (2.09)	-1.88 (1.72)	-1.87 (1.74)
seatshare_H	-0.13 (0.58)	-8.26*** (2.62)	-4.78** (2.34)	-4.60* (2.45)
seatshare_FRP	-1.07** (0.46)	-7.20*** (2.42)	-3.02 (2.02)	-3.10 (2.00)
<i>N</i>	2180	2180	2170	2170
adj. $R^2$	0.766	0.616	0.709	0.710
Method	OLS	RDD	RDD	RDD
Interval	-	0.25	0.25	0.25
Polynomial	No	Yes	Yes	Yes
TimeFE	Yes	Yes	Yes	Yes
MunicipFE	Yes	No	Yes	Yes
Controls	Yes	No	No	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 8: Spending and Political Representation

	(1)	(2)	(3)	(4)
seatshare_RV	-51.88 (40.17)	-176.80 (155.09)	-165.84 (140.17)	-165.94 (140.57)
seatshare_SV	-5.75 (9.53)	12.70 (62.36)	-90.06* (49.95)	-89.94* (49.91)
seatshare_V	10.64 (8.47)	48.88 (70.69)	18.39 (59.10)	20.18 (59.78)
seatshare_SP	16.21** (6.43)	33.39 (57.36)	11.77 (49.33)	15.33 (49.68)
seatshare_KRF	-17.47 (14.53)	11.00 (58.43)	-5.79 (55.22)	-4.71 (55.06)
seatshare_H	17.48* (9.91)	-86.51 (76.38)	-60.75 (54.96)	-59.04 (55.39)
seatshare_FRP	-0.60 (13.49)	-47.91 (82.20)	48.97 (69.50)	47.46 (69.14)
<i>N</i>	2264	2264	2246	2246
adj. $R^2$	0.066	0.171	-0.138	-0.135
Method	OLS	RDD	RDD	RDD
Interval	-	0.25	0.25	0.25
Polynomial	No	Yes	Yes	Yes
TimeFE	Yes	Yes	Yes	Yes
MunicipFE	Yes	No	Yes	Yes
Controls	Yes	No	No	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 9: Property Taxation and Political Representation

	(1)	(2)	(3)	(4)
PTaxIndex	-0.00 (0.26)	2.66 (2.09)	1.52 (1.29)	1.53 (1.28)
$N$	1096	1096	1083	1083
adj. $R^2$	0.302	0.207	0.217	0.241
Method	OLS	RDD	RDD	RDD
Interval	-	0.25	0.25	0.25
Polynomial	No	Yes	Yes	Yes
TimeFE	Yes	Yes	Yes	Yes
MunicipFE	Yes	No	Yes	Yes
Controls	Yes	No	No	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

Table 10: User charges and Political Representation

	(1)	(2)	(3)	(4)
UserChargesIndex	-6.57*** (1.39)	15.34** (6.82)	9.47 (6.13)	9.67 (6.16)
$N$	2180	2180	2170	2170
adj. $R^2$	0.498	0.624	0.712	0.713
Method	OLS	RDD	RDD	RDD
Interval	-	0.25	0.25	0.25
Polynomial	No	Yes	Yes	Yes
TimeFE	Yes	Yes	Yes	Yes
MunicipFE	Yes	No	Yes	Yes
Controls	Yes	No	No	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

Table 11: Spending on young vs old and Political Representation

	(1)	(2)	(3)	(4)
YoungVsOldIndex	-15.30 (12.29)	135.95 (118.83)	-99.07 (108.80)	-101.19 (108.30)
$N$	2264	2264	2246	2246
adj. $R^2$	0.009	0.178	-0.118	-0.116
Method	OLS	RDD	RDD	RDD
Interval	-	0.25	0.25	0.25
Polynomial	No	Yes	Yes	Yes
TimeFE	Yes	Yes	Yes	Yes
MunicipFE	Yes	No	Yes	Yes
Controls	Yes	No	No	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Figure 1: Preferences of Local Council Members

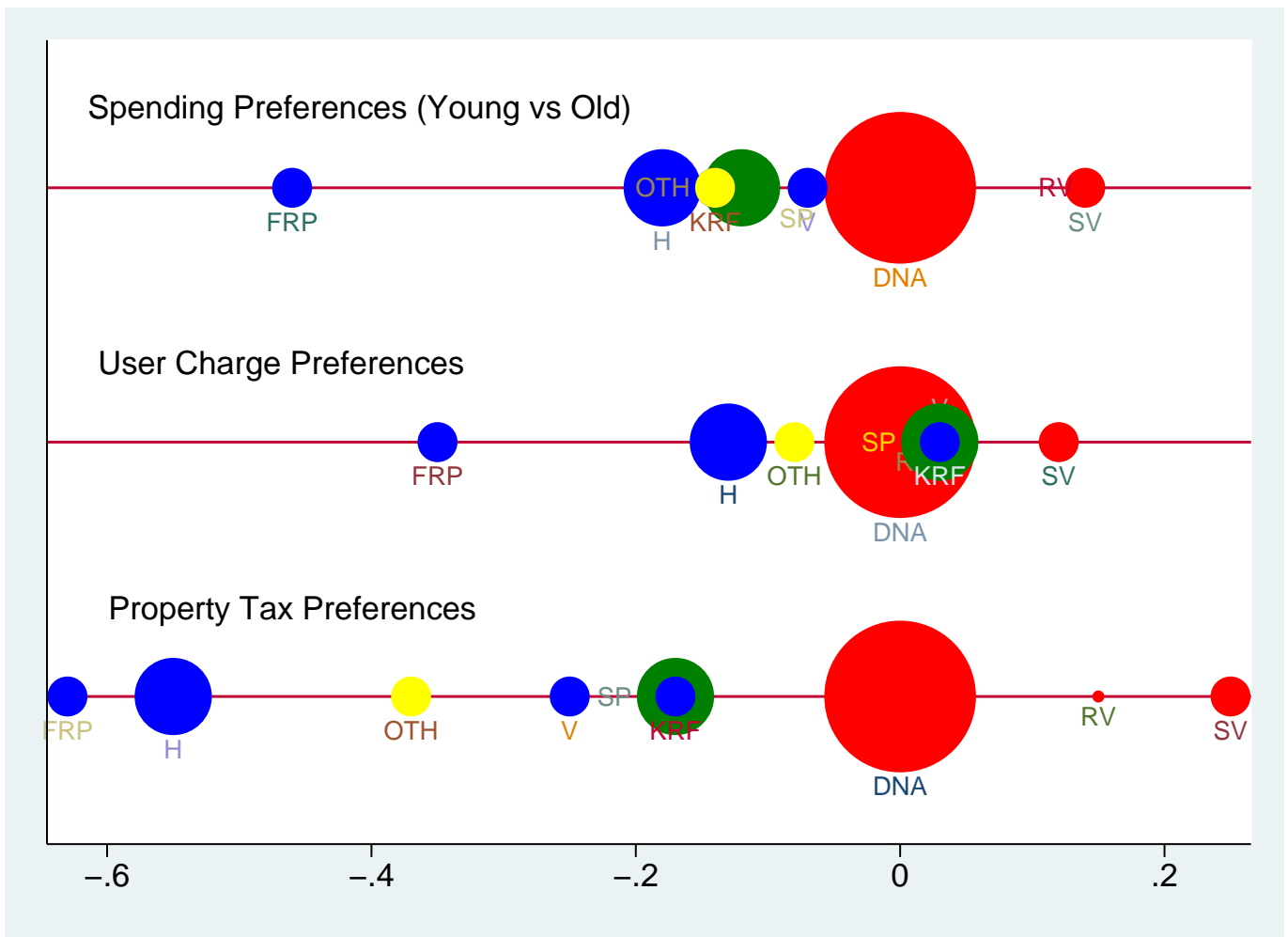


Figure 2: Estimated effects of party shares and reported spending preferences for property taxes

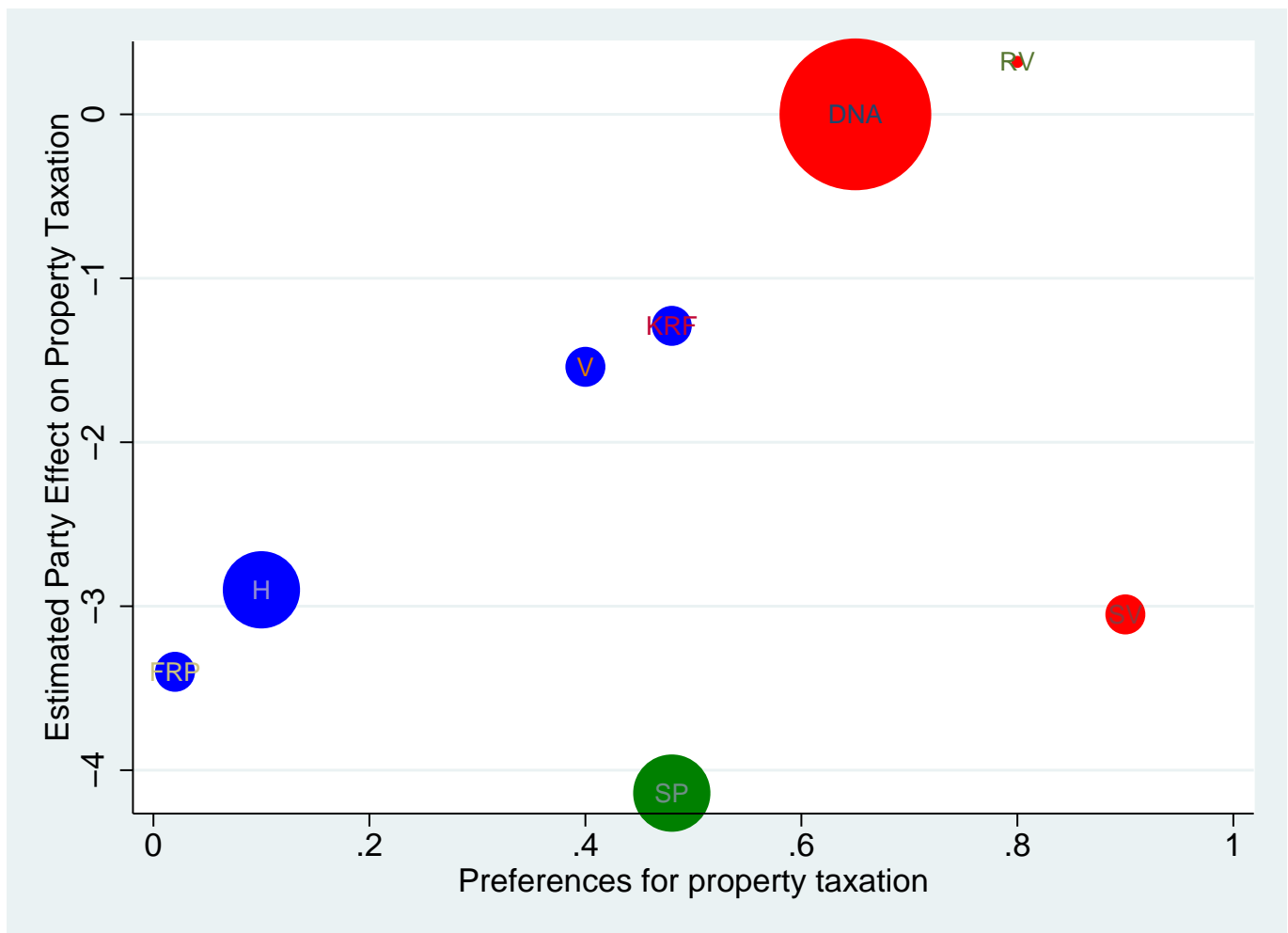


Figure 3: Estimated effects of party shares and reported spending preferences for user charges

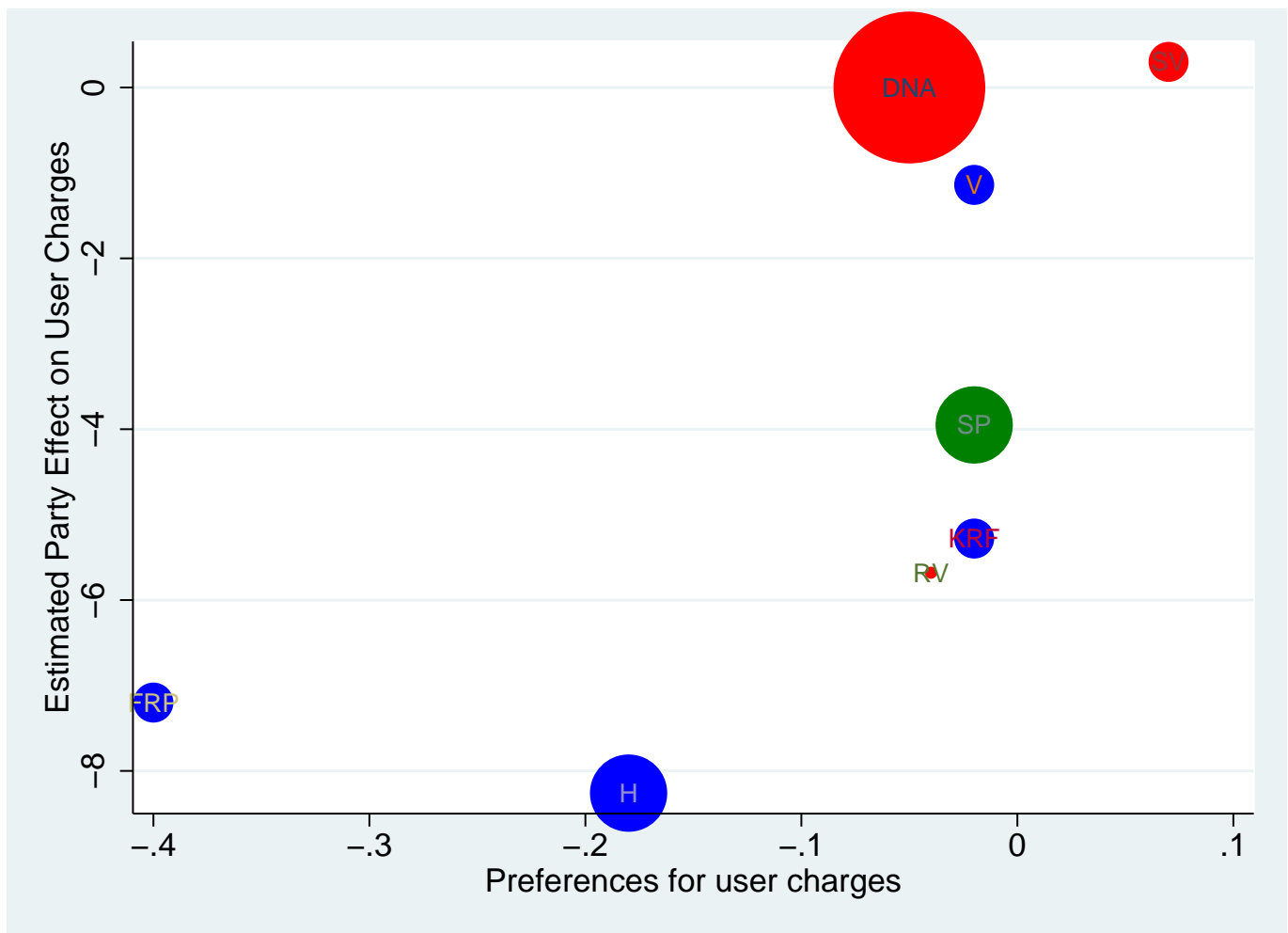
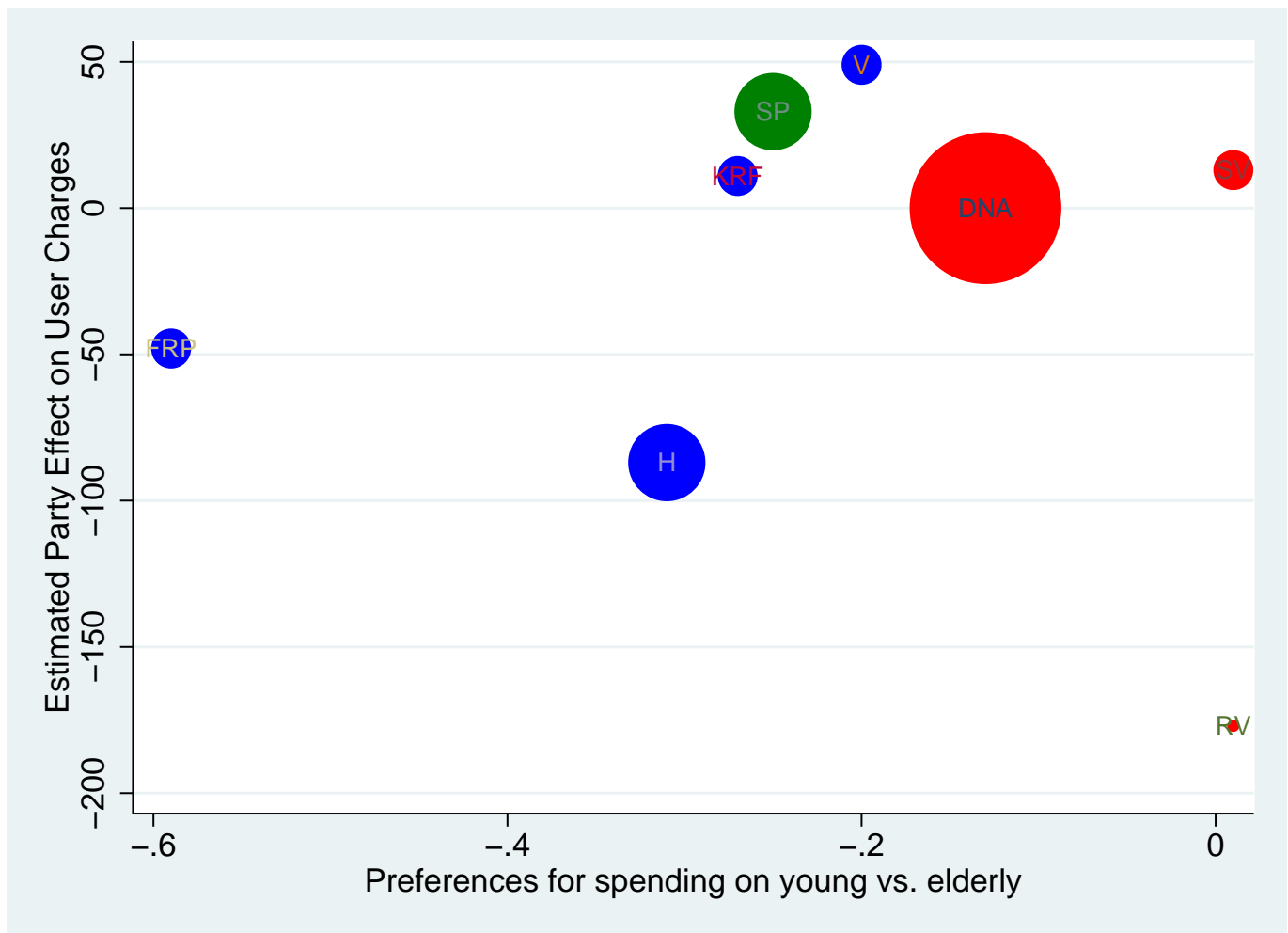


Figure 4: Estimated effects of party shares and reported spending preferences for young (child care) versus elderly (old-age care)



APPENDIX TABLES - REGRESSION RESULTS BASED ON ALL SPENDING CATEGORIES

Table 12: Spending and Political Representation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Chi	Edu	Eld	Soc	Cul	Tra	Adm	Oth
seatshare_SV	-7.34 (4.83)	-10.63 (12.35)	24.27 (16.46)	-28.05* (14.64)	-1.24 (6.37)	10.99** (4.88)	0.94 (6.45)	9.16 (20.18)
seatshare_V	-3.64 (5.64)	-7.62 (13.65)	-16.12 (19.07)	15.31 (15.61)	-5.73 (7.80)	3.43 (5.36)	11.21 (7.11)	5.10 (21.67)
seatshare_SP	-0.10 (4.49)	-1.30 (11.83)	-2.89 (16.87)	-15.20 (14.64)	-1.86 (6.44)	5.97 (4.83)	-2.65 (6.27)	21.16 (19.87)
seatshare_KRF	0.88 (5.31)	-0.45 (13.83)	8.55 (18.00)	-16.51 (16.55)	-7.32 (7.42)	1.11 (5.89)	-3.32 (7.99)	15.82 (22.84)
seatshare_H	-0.94 (4.14)	6.44 (11.90)	21.18 (14.68)	4.86 (13.71)	-1.09 (5.88)	-2.14 (5.47)	-8.56 (6.66)	-21.53 (19.49)
seatshare_FRP	-5.60 (5.73)	6.38 (15.61)	-25.21 (19.66)	18.43 (18.79)	-4.92 (7.46)	0.58 (6.08)	-5.07 (7.76)	11.72 (26.43)
<i>N</i>	2246	2246	2246	2246	2246	2246	2246	2246
adj. $R^2$	0.687	0.173	0.670	-0.051	-0.102	0.030	0.000	0.696

Standard errors in parentheses

Demographic control variables, time and municipality fixed effects included.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 13: Spending and Political Representation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Chi	Edu	Eld	Soc	Cul	Tra	Adm	Oth
childcare	-11.31 (11.13)							
education		-32.53 (38.46)						
elderlycare			-16.97 (63.14)					
healthsocial				-114.64* (60.86)				
culture					-11.81 (15.67)			
transport						-23.15 (16.09)		
centraladm							24.70 (26.18)	
other								46.75 (173.06)
<i>N</i>	2246	2246	2246	2246	2246	2246	2246	2246
adj. <i>R</i> <sup>2</sup>	0.693	0.184	0.678	-0.015	-0.091	0.034	0.016	0.701

Standard errors in parentheses

Demographic control variables, time and municipality fixed effects included.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$