The Power of Parties:

Evidence From Close Municipal Elections in Norway[*]

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Abstract

We show that small shifts in representation can affect policy in proportional election systems. Using data from Norway, we find that a larger left-wing party leads to more property taxation, higher child care spending and less elderly care spending, while local public goods appear to be a non-partisan issue. These effects are partly due to shifts in bloc majorities, and partly due to changes in the left-right position of the council, keeping the majority constant. The estimates on spending allocations are rather imprecise, but they are consistent with evidence on politicians' fiscal preferences and patterns in media attention.

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1 Introduction

The 2007 local elections in the Norwegian municipality Gjøvik was a close race. The left-wing parties obtained 23 of the 45 seats on the council. The right-wing parties were approximately one percentage point away from winning a seat majority. In an interview published 12 days before the election Day, the lead candidate of the right-wing Progress Party claimed that the two most important issues for his party group was better elderly care and the removal of property taxation.

What would have been the fiscal policy consequences had the Progress Party gained an additional seat? If a seat was won at the expense of a left-wing party, a right-wing majority might abolish the property tax, increase spending on elderly care, and possibly cut spending on other services. Would we have seen similar effects if the Progress Party had won an extra mandate at the cost of a right-wing party, that is while maintaining the left-wing majority? This is the central issue in the current paper: Do parties matter only when they are decisive for seat majorities? Or, does proportional representation allow parties to matter even when majorities are fixed? In a seminal contribution, Lijphart (1999) argues that minority parties do exert political influence. The current study provides evidence in support of this important hypothesis.

In theoretical terms, political parties represent the supply side of democratic politics. Just as we expect firms to matter in economic markets, we expect parties to matter in democratic markets. In the economic market, a positive shift in supply results in lower prices. In politics, the result of a shift from a left-wing to a right-wing majority, is expected to reduce taxes. Such policy changes can result from shifts in demand or supply, that is, they might be caused by changes in voter preferences or party platforms. We address the supply-side effects, i.e. how partisan representation affect public policy when voter preferences are fixed (Strøm (1990a, p. 570); Cox (1997, p. 6-7)). There is a vast literature in economics devoted to estimating how supply affect prices. The empirical literature on democratic supply-side effects is less well developed, in particular

with regard to proportional representation (PR) systems. This paper aims to contribute to filling that gap.

We define the "power of parties" as the policy shifts resulting from a change in political representation, holding other factors constant. In majoritarian election systems, political power is simply a dichotomous variable defined by the party that gains a majority of seats in the legislature. In PR systems, individual parties within and outside the governing coalitions can also exert influence on policy. We rely on two regression discontinuity designs specifically tailored to capture these aspects of PR systems. To capture the majoritarian dimension of political representation we build on Pettersson-Lidbom (2008). To capture the effect of individual parties we use the RD design developed by Folke (2014). To the best of our knowledge, our study represents the first attempt to jointly estimate how seat majorities and the representation of individual parties affect policy outcomes.

In this study, we analyze the fiscal policies of Norwegian local governments. Norwegian local governments operate in a homogenous institutional framework with considerable autonomy over several fiscal outcomes. We offer a broad analysis covering tax choices and public spending allocation. In examining the effect of the individual representation of parties, we have the advantage of access to a unique and comprehensive data set on the political preferences of elected officials. By combining these data with data on the individual parties' seat shares in the councils we construct a measure of the left-right position of a municipal council.

The analysis shows that parties matter for fiscal policies. Having a right-wing, instead of a left-wing seat majority, leads to lower property taxes, but appears to have no impact on spending allocations. We also find that changes in the left-right position of the local council, keeping the majority constant, can affect fiscal policy. Additional seats to the right-wing parties appear to lead to higher spending on welfare services that benefit the elderly, and less to services for the young. These estimates are relatively imprecise, but they fit well with the survey evidence on parties' policy positions. We also document that property taxation and elderly care services feature prominently in the media during

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election campaigns. This suggests that our findings are unlikely to be a product of multiple testing.

The remainder of the paper is organized as follows. In the next section we present a framework for analyzing the impact of parties in PR systems and two testable hypotheses. In the two subsequent sections we describe the data, institutional setting and our empirical approach. We then present our main results, and, in the last section, our conclusions.

2 The Impact of Parties in Proportional Systems

In this section, we introduce the conceptual framework we use to define the power of parties in proportional election systems. Since democratic competition involves both voters and parties, it is useful to start by characterizing the power of voters.

Voters can exert influence in two ways. First, voters have direct influence since they decide the partisan composition of the elected assemblies. Second, they have indirect influence since parties may adjust their policy platforms to match electoral preferences.[1] This is the power of voters, i.e. what we label the demand side of politics. A full analysis of the demand side is outside the scope of the current paper.

The power of parties is the supply-side effect in electoral politics. It can be defined as the policy shifts resulting from a change in political representation when voter preferences are held constant.[2] This is the effect we aim to quantify in this paper.

The power of parties depends on three factors, whether party platforms diverge, how votes are transformed into party seats, and the mode of decision-making in the elected assemblies. Below we outline these in sequential order.

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[1]In an influential study of the U.S. House of Representatives, Lee, Moretti and Butler (2004) find that voters primarily "elect policies", i.e. voters affect policies by choosing between candidates with relatively fixed policy positions. They find no evidence that electoral competition induce candidates to adopt positions closer to the median voter (which would imply that voters also "affect policies").

[2]Cox (1997) (p. 6-7) discusses coordination mechanisms in democratic markets in a way that is comparable to our conceptualization of parties as suppliers and voters as demand agents. He suggests that market-clearing expectations facilitate equilibrium between supply of candidates/parties and the demands of voters.

2.1 The Existence of Divergent Party Platforms

The first step a party takes to affect policy is to formulate its policy platform in relation to other parties. For parties to matter at all, party platforms must diverge.

Most theoretical models on this issue deal with competition between two parties or candidates. Based on specific assumptions, the convergence theorem states that the two contenders will offer identical policies (Downs, 1957). A number of models relax the classical Downsian assumptions, which typically imply that the parties' policy platforms will diverge (Wittman, 1983). A key reason for the divergence is that political parties find it impossible to offer/commit to platforms that deviate from the underlying preferences of their representatives' (Alesina, 1988).

Generalizations of these models to multi-party systems also suggest that parties will take different policy positions (Merrill and Adams, 2001). Importantly in multi-party systems, post-election bargaining plays a major role in how policy is determined. Kedar (2005) and Duch, May and Armstrong (2010) suggest that voters may therefore find it beneficial to vote for political parties that take relatively extreme policy positions. Political parties may then gain by taking more extremist policy positions than their supporters. Hence, there is good reason to believe that parties will have divergent policy platforms in proportional election systems.

2.2 The Aggregation of Preferences: Votes to Seats

The second step in determining the power of parties is the mapping of votes to seats. To illustrate why this matters, consider first the simple case of a two-candidate majoritarian election. Suppose that the two candidates offer divergent policy platforms and the winning candidate gets to implement their platform. In this setting it will be clear that tiny changes in voter preferences, tilting the majority from one candidate to the other, will have considerable policy effects when parties have divergent platforms. This is the basis of the power of parties in majoritarian election systems.

To illustrate this component of the power of parties in a setting with multiple seats consider Figure 1. The figure illustrates the mapping of vote shares to seat shares between two parties competing for three seats in a completely proportional election system. A party gets one representative if it receives more than 1/6 of the votes, two if it gets at least half of the votes, and three with more than 5/6 of the votes. Although the effects of shifts in representation are not as dramatic as in the majoritarian case the seat share can deviate considerably from the vote share (the dashed diagonal line in Figure 1).

In our research design, explained in detail in Section 4, it is this threshold structure in representation that we will rely on to identify the causal effect of political representation. For illustrative purposes, we could for example consider voter preferences as good as randomly allocated in a two percentage point window between vote shares 0.157 and 0.177 (the dashed vertical lines in Figure 1).

2.3 The Aggregation of Preferences: Seats to Policy Decisions

The third, and final step, in determining the power of parties is to transform seat shares into policy decisions. In a two-party setting, or in multiparty systems when one party wins a seat majority, this is straightforward: the majority party gets to implement its preferred policy. In a multiparty system where no single party has a seat majority the process becomes more complicated since a coalition of parties is required to reach a majority. How this particular process takes place is one of the most studied areas in political science.

Some authors argue that when the multi-party system has been organized into two-party blocs, it can be treated as a majoritarian two-party system in which it is the majority bloc that decides policy (cf. Pettersson-Lidbom, 2008). This approach assumes the parties have coalesced into binding alliances, where the coalition members are, for example, defined by national party organizations. In this setting differences in the seat shares of individual parties should matter only if these affect which bloc holds the seat

Figure 1: Mapping vote shares to seat shares with simple PR
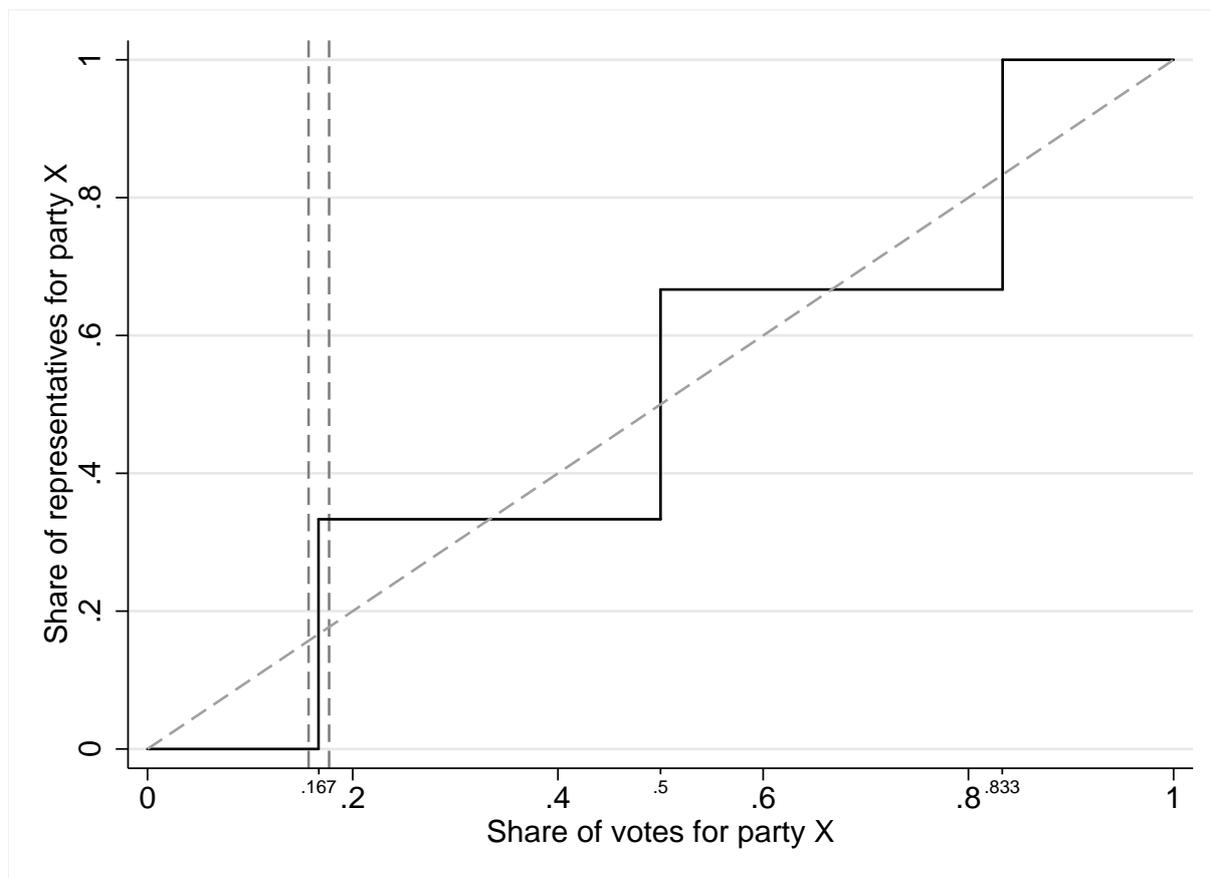
Note: The figure illustrates how three seats are allocated on the basis of the Sainte-Laguë Method (a simple proportional election system) when only two parties are running. For illustrative purposes, we may consider an election to be close in a two percentage point window between vote shares of 0.157 and 0.177 (the vertical dotted lines). In the empirical application we use a bandwidth which is one fourth of this.

majority but not within one political bloc.

Another class of models assumes that binding party coalitions do not exist. In this setting it is often argued that when there is a single dimension of conflict the median party will be decisive in setting policy (Strøm, 1990*b*, Powell, 2000, chapter 9). A change in the representation of individual parties could imply a change of median party, with policies matching the preferences of the new median party. Faced with cross-cutting conflict dimensions, however, the median party model breaks down. It is hard to predict the extent to which representation will affect the parties' relative bargaining power.

This power of parties in a multiparty setting is also directly related to coalitional bargaining. In theoretical models on coalitional bargaining, the seat share is decisive for both the coalitions that are formed and how power is allocated within them Austen-Smith and Banks (1988). A larger seat share for a party increases both the probability that the party will enter into a coalition and the party's influence within the coalition. Each party's policy influence within a coalition, as approximated by the allocation of ministerial portfolios, typically follows party's relative contribution of seats to the coalition. This empirical regularity is referred to as Gamson's Law (Gamson, 1961, Carroll and Cox, 2007). Gamson's law could possibly also apply to bargaining over fiscal policy outcomes. We are, however, not aware of any paper documenting examining this.

Finally, budget-making implies that the elected representatives participate in inter-party discussions in closed committees as well as open council meetings. A party with a single elected representative can, for example, influence policy outcomes simply by making a convincing case for her preferred solution or the interests of her voters (Lijphart, 1999, p. 6, Powell, 2000, p. 15, Borge and Sørensen, 2002).

2.4   Testable Hypotheses

The theoretical framework discussed above suggests two hypotheses: First, fiscal policies change as result of shifts in party representation leading the right-wing party bloc to win or lose its seat majority. Second, fiscal policies are also affected by differences in party representation that do not alter majorities, provided that the representational differences affect the left-right position of the average council member. While the first hypothesis is studied extensively in the literature, the latter is not. Most importantly, the two hypotheses have not been jointly tested.

3 Data and Institutional Setting

Norwegian municipalities (of which there are about 430) are multipurpose authorities with responsibility for local infrastructure and key welfare services of the Norwegian welfare state. Together with the regional level of government, whose responsibilities are more limited, the local public sector accounted in 2010 for 18 percent of mainland GDP; 19 percent of the Norwegian workforce is employed in the local public sector. The median population size of Norwegian municipalities is about 4,000 (the average is about 10,000).

Our main analysis is built around panel data covering tax and spending policies of Norwegian municipalities for the period 2000-2010. In addition, we use data from an extensive survey questionnaire aimed at establishing council members' preferences for particular municipal spending programs and tax policy. The survey data are useful for the current analysis for two reasons. Firstly, these data allow us to establish whether party platforms do in fact diverge, without which the power of the parties will fail to materialize. In addition, they are helpful for interpreting the main results.

In the ensuing subsections, we outline the fiscal framework of Norwegian municipalities (3.1), and present descriptive statistics on the response variables, i.e., the fiscal policy data (3.2). Next, we provide information on the election system and the party structure (3.3), and descriptive statistics on the preferences of the elected representatives (3.4). In Section 4, we explain how the survey data can be used to quantify whether exogenous shifts in political representation pushes policy in the expected direction.

3.1 Fiscal framework

While local authorities in the U.S. primarily provide local public goods, for example water supply and garbage collection, the mandate of Norwegian local governments is much broader. They are responsible for delivering key welfare services in the Norwegian welfare state including child care services, primary schools and senior citizen care at home and in nursing institutions. These tax-financed welfare services target specific age-groups,

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and have significant redistributive effects (Aaberge et al., 2010).

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 highest and lowest tax rates. All municipalities charge the highest possible tax-rates throughout the period analyzed here. Block and earmarked grants account for most of the other revenues. Municipalities have to take these revenue sources largely as given. They may, however, influence revenue from two additional sources.

First, municipalities collect user fees in several sectors, primarily for infrastructure services (sewage, water supply, and collection and management of garbage).[3] Local governments may choose to subsidize some infrastructure services, in which case user fees can be seen as implicit taxation (although the law stipulates that user charges cannot exceed production costs). User charges are an important source of revenue for Norwegian municipalities (Borge, 2000, Blom-Hansen, Monkerud and Sørensen, 2006).

Second, municipalities can levy commercial and residential property taxation according to specific criteria. Commercial property taxation is basically a tax on hydro power production (Andersen, Fiva and Natvik, 2014). We limit our analysis to residential property taxation.[4] Prior to 2007, residential property taxation could only be levied in urban areas. Although this source of revenue accounts, on average, for only about 2 percent of municipal income, it is an important marginal source of revenue (Fiva and Rattsø, 2007).

For a given level of revenue, local authorities can in principle allocate resources to the sectors they choose to prioritize. Budgetary allocations are limited by entitlement legislation under which every citizen enjoys a statutory right to particular services. Primary schooling has always been subjected to such legislation, but it also plays an increasing role in health care and nursing services. Councils' freedom to allocate spending is also

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[3]User charges for infrastructure services account for about half of the revenue from user charges, the remainder stemming from user charges for child and old-age care (Borge, 2000).

[4]Unfortunately, account data from Statistics Norway do not separate between income from residential and commercial property taxation until 2007. We therefore rely on survey data from 2001 from Fiva and Rattsø (2007) to capture property tax decisions for our first election period. For our second election period we rely on Statistics Norway data from 2007. For our third election period we rely on Statistics Norway data from 2008-2010. Our main results are basically unaltered if we alternatively use account data for overall property taxation for the entire period.

constrained by numerous nationally defined minimum standards, particularly pertaining to staffing and personnel qualifications. Finally, matching grants for child care and central government 'action plans' (particularly for elderly care), are designed to get councils to prioritize particular services.

3.2 Fiscal Policy Data

Table 1 offers descriptive statistics on our dependent variables; a dummy for property taxation, user charges for infrastructure per capita and percent spending on various public services.

Table 1: Descriptive statistics on fiscal policy outcomes

	Mean	Std. Dev.	Min.	Max.
Taxation				
Residential property taxation (dummy)	0.31	0.46	0.00	1.00
User charges (NOK 1000 per capita)	2.91	1.30	0.00	16.47
Welfare Services (percent of total spending)				
Child care	8.01	2.67	2.91	19.31
Education	24.20	4.21	10.51	39.35
Elderly care	27.76	5.06	9.80	52.19
Health and social care	11.36	2.38	4.42	24.07
Local Public Goods (percent of total spending)				
Culture	5.05	2.23	1.87	20.18
Transport	2.73	1.37	0.59	17.58
Central administration	9.28	2.71	2.72	21.33
Other purposes	11.62	3.34	3.43	38.22

Note: The sample is restricted as in baseline estimations below (N=1122). Data for property taxation for the first election period is from Fiva and Rattsø (2007). The other data is from Fiva, Halse and Natvik (2012).

31 percent of the observations in our sample do levy residential property taxation. User charges for infrastructure services (water supply, sewage treatment, and garbage collection) vary considerably across municipalities. The average is NOK 2,913 per capita

(deflated to 2007 NOK, about USD 350).

The welfare services for which local governments are responsible (child care, education, elderly care and health and social services) account for about 71 percent of total spending. The remaining 29 percent is spent on culture, transport (roads and infrastructure), central administration and "other purposes". In the following we refer to these categories as local public goods. Spending shares display substantial cross-sectional variation.

3.3   Election System and Political Representation

The electoral system is an open-list proportional system with one election district per municipality. Until 2003, the D'Hondt seat allocation method was used to allocate council seats. It was replaced at the 2003 election by a Modified Sainte-Laguë seat allocation method.[5] Fiva and Folke (2016) study this electoral reform in detail.

The local council is the supreme body in the municipality. It must have a minimum number of elected representatives, defined by population size. In the election periods analyzed here, the average council size is about 27 members, ranging from 11 (the legal minimum) to 85. The council elects a mayor (and deputy mayor), who are responsible for chairing council meetings. The institutional setup is not parliamentarism, but a system where the council elects an executive board ('Formannsskapet') with a minimum of five members. One council member can demand proportional elections to the executive board. Therefore, the board comprises representatives from the larger political parties. The chief administrative official ('Rådmannen') is responsible for preparing and executing council decisions, and he/she also is responsible for insuring that municipal operations are carried out according to law and regulations. The municipalities differ with respect to budgetary processes. In most cases, the chief administrator prepares a complete budgetary proposal for the council committees and the executive board. The executive board subsequently develops modified proposals, which are voted on by the council.

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[5] A few municipalities have a parliamentary system. These authorities are not included in the empirical analyses.

The main political cleavage in Norway goes between the left-leaning socialist and the right-leaning conservative camps. The Labor Party (DNA) is the dominant party within the left-leaning bloc, which also consists of the Socialist Left Party (SV) and Red Electoral Alliance (RV). The right-leaning bloc consists of five parties and is more fragmented. They are the Center Party (SP), the Christian Peoples' Party (KrF), the Liberal Party (V), the Pensioner's Party (PP), the Conservative Party (H), and the Progress Party (FrP). In addition there are independent party lists, not represented at the national level, small parties that fail to obtain much nationwide support and joint lists of several parties. Appendix Table A.1 offers descriptive statistics on the political representation of all parties.[6]

3.4   Policy Preferences and Left-Right Positions

As laid out in Section 2, for the power of parties to materialize, party platforms need to diverge. To investigate the extent to which this is the case we rely on survey data on council members in 120 municipalities for the election periods 1999-2003, 2003-2007, 2007-2011 (response rates: 60-65 percent).[7]

In Figure 2, the horizontal axis displays the average left-right positions of local council members by party. What is striking are the large ideological differences. On the 0-10 left-right scale, the average score of Socialist Left Party representatives is 2.0, the Labor Party 3.6, and the Progress Party 8.4.

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[6]Voters can affect the election outcome by voting for a party list and by casting preferential votes for particular candidates. We have data on the allocation of votes both before and after preferential votes are taken into account. Since our research design requires exact voting data for all parties running in the municipal elections, we chose a conservative strategy so as to exclude all observations where the sum of votes before preferential votes are allocated ('partistemmer') are not equal to the sum of votes after the preferential votes are allocated ('listestemmer'). In most of these cases the inconsistency is minor (e.g. a single vote appears to be missing). We also exclude a limited number of observations displaying inconsistency between the final distribution of votes and the distribution of seats (likely caused by errors in the seat data). Altogether then, about 13 percent of the sample is excluded.

[7]Municipalities are drawn as a random sample of municipalities. The survey questions were also answered by mayors and deputy mayors in the remaining municipalities. For further documentation on the survey data, see Monkerud (2007). The survey is conducted in the final year of each election period. Previous studies using data on previous election periods include Sørensen (1995) and Borge and Sørensen (2002).

Figure 2: Left-right placement, tax and spending preferences of local council members
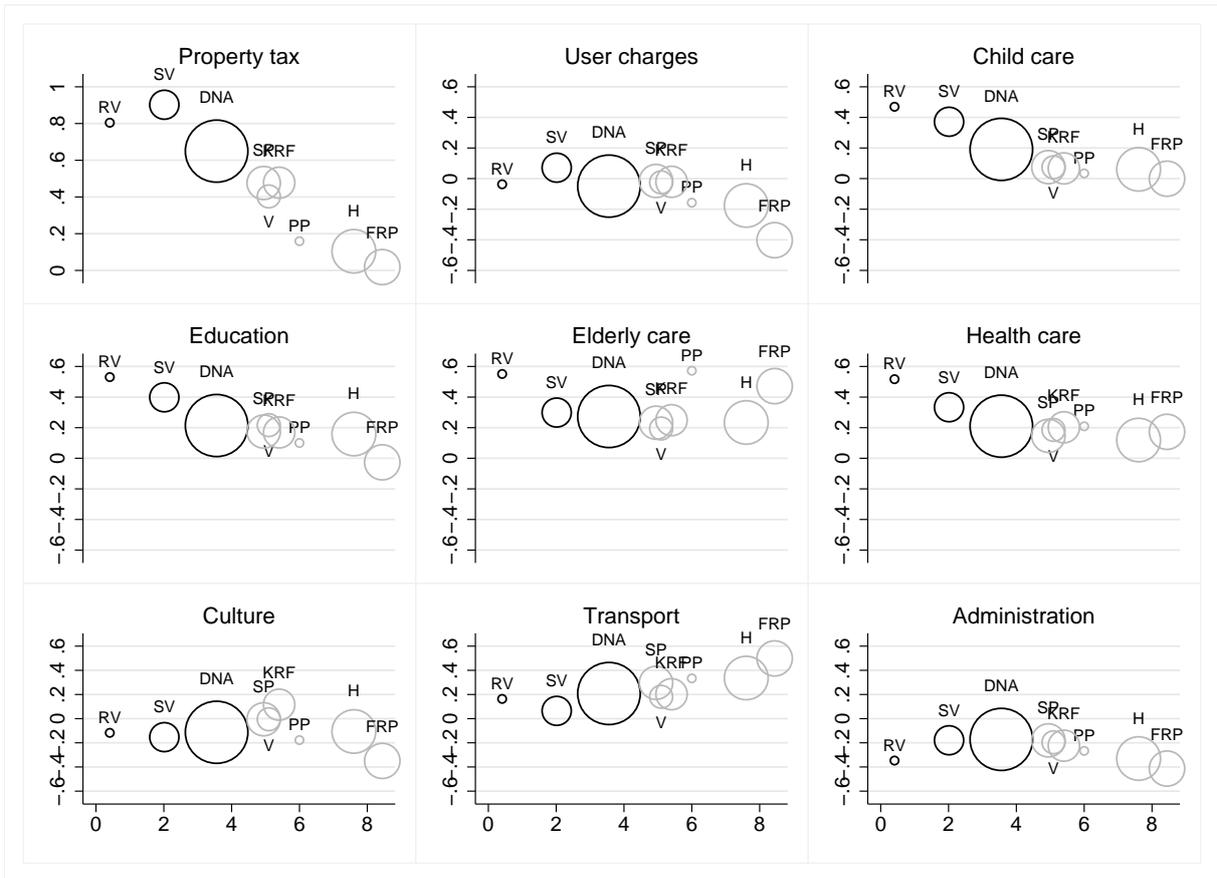
Note: The figure plots parties' policy position on various fiscal policy areas against parties' left-right self-placement. The left-right self-placement is measured by means of a question where respondents placed themselves on a scale from 0 (the extreme left) to 10 (the extreme right). Coding of property tax preferences: 1, if the respondent wanted to introduce, or alternatively, to 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 user charges preferences: -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 include answers to questions about three service sectors: water, sewage, and garbage collection and disposal. The spending preferences of local councilors are measured by survey questions related to individual spending items. The circle indicates the national average response of a particular party to the following: "We ask you to state whether you believe the municipality should spend much less (i.e. 5% or more), somewhat less (i.e. 1-5%), about the same as in the previous year, somewhat more (i.e. 1-5%), or much more (i.e. 5% or more). Remember that an increase in one spending area usually means cutbacks in other areas." We use the following coding: Much less: -1; somewhat less: -0.5; about the same: 0; somewhat more: 0.5; much more: 1. The sizes of the circles reflect parties' average electoral support. Black circles are used for parties in the left-wing camp (RV, SV and DNA); gray for parties in the right-wing camp (SP, KRF, H, FRP and PP). Party acronyms are explained in Table A.1.

The top left and top middle diagrams in Figure 2 display party members' preferences for increasing or decreasing property taxes and user charges for infrastructure services against left-right placement. Property tax preferences closely follow left-right positions; left-leaning representatives want to increase property taxes to a greater extent than the representatives on the right. User charges display less left-right polarization, probably a consequence of the different distributive effects of the two instruments of taxation (Borge and Rattsø, 2004).

The other diagrams of Figure 2 display party preferences for spending allocations. In line with previous studies (e.g. Rattsø and Sørensen, 2010) we find that left-wing parties prioritize services for children, and right-wing parties, in particular the Progress Party (FRP), want to spend relatively more on services for the elderly.

There are also noticeable differences in party platforms for local public goods. The right-wing parties want to increase spending on transportation. For central administration and culture spending, differences across parties do not follow the left-right pattern. For example, Progress Party members prefer small allocations to culture, while the representatives of the Christian Democratic Party (KRF) want to raise spending considerably.

In a supplementary analysis we investigate the extent to which party positions vary over time and space. This analysis indicates that party positions are remarkably stable.[8] This results should be understood in the context in which the local parties operate.

4 Identification Strategy

Political representation can, as explained in Section 2, be considered an equilibrium determined by the interaction of political elites and citizens. This makes it challenging to empirically separate the power of parties from the power of voters.

The identification problem could be seen as a classical omitted variable problem, the

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[8]Online Appendix Table C.1 shows that party positions on the left-right scale vary only moderately over space and time. Party fixed effects alone explain about 72 percent of the variation in the data. Adding full interactions between party, year and municipality fixed effects only marginally increase the explanatory power of the model.

omitted variable in this case being the preferences of the voters. If we were able to perfectly observe the preferences of the voters we would be able to control for them. However, even with rich survey data we will only have an approximation of voter preferences. This means that we will not be able to solve this identification problem with a control-variable-driven identification strategy.

In this section we describe the identification strategies used to estimate the causal effect of political representation on policy. First, we describe how we estimate the effect of the average policy position in the council. Second, we develop an empirical strategy for estimating the effect of a bloc holding a seat majority in the council. Finally we describe the procedure of jointly estimating these two treatment effects.

4.1 Estimating the Effect of Average Council Position

We define the average left-right position of the local council by combining the survey data explained in Section 3.4, with data on seat allocations in the council. This gives us the following definition:

$$I_{it} = \sum_{p=1}^{p=P} Q_p \cdot s_{pit}, p = 1, 2, ..., 9 \tag{1}$$

Here s_{pit} denotes the share of representatives for party p in municipality i in election period t. Q_p is the position of party p, which is assumed to be time and space invariant. The index is weighted averages of the positions of all P parties, using seat shares as weights. In the following, we refer to this index based on the left-right scale, as the *Left-Right Index*.

To obtain exogenous variation in the average left-right position, we rely on the methodology developed by Folke (2014). The basic idea in this research design is that a part of the seat allocation will be as good as randomly assigned when we are sufficiently close to seat allocation thresholds. The identifying assumption is that observations close to either side of a seat threshold are (on average) equal in all relevant respects, except in the

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difference in the allocation of seats. This is the same basic identifying assumption as in any electoral RD design. However, there are several methodological challenges due to the characteristics of proportional election systems that need to be solved, most importantly correctly defining the proximity of a party to a seat threshold.

We use a 2SLS approach to test whether differences in (random) seat allocation cause differences in policy outcomes. This builds on the idea that we can use the as good as random part of the seat allocation as an instrument for the left-right position of the council.

To illustrate the intuition behind our identification strategy we can return to Figure 1 above, where we show a simple case in which three seats are allocated to two parties in a PR system. This yields three thresholds that determine the seat allocation. With more than two parties, it becomes more complicated. The seat thresholds in a party's vote share are determined by the vote share of all the parties. Thus, a party may experience a seat change while its vote share remains constant. Consequently, distance to a seat change cannot be measured simply by using the vote share of an individual party.

We follow Folke (2014) and define the distance to a seat threshold as the minimum total vote change across all parties that would be required for a party to experience a seat change. We define an observation as being close enough to a seat threshold if the minimal distance to a seat change is less than a cutoff point, denoted by λ. Throughout the paper we will follow Folke (2014) and define $\lambda = 0.25$ percentage points.[9]

To implement the RD design, we need two sets of indicator variables. One set of variables indicates whether a party is close to a threshold. These are control variables. The other set indicates whether a party is close to and above or below the threshold. These are the treatment variables.

Formally, we define binary indicator variables for each party, c_{pit}, each taking the value of one for all observations where the party is within distance λ from a threshold, that is, for observations close to a threshold. The set of treatment variables, t_{pit}, is equal to $-\frac{1}{2}$

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[9]For a more detailed description of the identification strategy we refer the reader to Folke (2014). Online Appendix Figure C.7-C.15 show the relation between various fiscal policy outcomes and λ.

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.[10] Since the Left-Right index is calculated on the basis of seat shares, s_{pit}, rather than the absolute number of seats, we divide the treatment and control variable by the total number of seats in the council, S_{it}.

The first stage specification used here is of the form

$$I_{it} = \alpha_0 + \alpha_1 \frac{c_{1it}}{S_{it}} + \alpha_2 \frac{c_{2it}}{S_{it}} + \alpha_3 \frac{t_{1it}}{S_{it}} + \alpha_4 \frac{t_{2it}}{S_{it}} + \alpha_5 V_{it} + \varepsilon_{it}. \tag{2}$$

This specification illustrates a three-party setting where party 3 is left out as the reference party.[11] V_{it} is a *vote share* weighted average of the policy position of all P parties and is included as a control function. More formally, it is defined as follows:

$$V_{it} = \sum_{p=1}^{p=P} Q_p \cdot v_{pit}, p = 1, 2, ..., 9 \tag{3}$$

where v_{pit} denote the vote share of party p in municipality i in election period t. V_{it} is not needed for identifying a causal impact, but it greatly increases the precision in the first stage.

The second stage setup is simple; we use the fitted value of the policy position index from the first stage to estimate the effect of the seat allocation among parties on the council. This gives us the following specification

$$Y_{it} = \beta_0 + \beta_1 \widehat{I}_{it} + \beta_2 \frac{c_{1it}}{S_{it}} + \beta_3 \frac{c_{2it}}{S_{it}} + \beta_4 V_{it} + \epsilon_{it}, \tag{4}$$

where $\widehat{I}_{it}$ is the fitted valued from the first stage regressions for municipality i in election period t. The parameter of interest, β_1, measures how the policy position of the local

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[10]The reason for using $-\frac{1}{2}$ and $\frac{1}{2}$, rather than 0 and 1, is that we need to define the negative treatment in seat shares. This would not be possible if we used 0 when the party ends up on the left side of the seat discontinuity.

[11]Since we use constant party positions to calculate the policy indexes there is no need to put any additional weights on the treatment variables. However, if we used policy positions that varied across either election periods or municipalities, we would have had to take this into account by weighting the treatment variables accordingly.

council affects implemented policy, Y_{it}.

Correctly measuring the policy position of each party group is important because it strengthens the predictive power of the second stage of our 2SLS specification. The better we measure the policy positions of the local party groups the better we should be able to predict the policy changes generated by the as good as random variations in the seat shares. Mismeasurements of the policy positions will add noise to the estimation, resulting in less precise estimates and possibly attenuation bias.

4.2   Estimating the Effect of Seat Majorities

For the same reasons that it is difficult to measure the distance to individual seat thresholds it is also difficult to measure the distance to seat majority thresholds. Looking at Figure 1 again, it is obvious that a vote share above 0.5 would imply a seat majority in the case of two parties. With more than two parties it gets more complicated. The thresholds would depend on the vote shares of all parties, and not all thresholds will flip the majority among the party blocs. Whether an additional seat to the Labor Party, for example, would flip the seat majority in favor of the left-wing bloc will depend on a) whether the additional Labor Party seat means a loss to the right-wing bloc or to the other parties comprising the left-wing bloc, and b) whether the additional left-wing seat flips the seat majority in favor of the left-wing bloc. Therefore, a smaller vote change would be required to gain a seat majority if the votes are favorably allocated within the bloc than when they are not.

In the simulation procedure described in detail in Online Appendix B, we identify changes in electoral support that are likely to result in a change of seat majority. More specifically, for each municipality, at every election, we identify the change in electoral support for the right-wing bloc that would have been sufficient to change the seat majority in at least half of the simulations. With this variable, denoted *ThresholdDistance*, we can implement standard RD design used in a two-party majoritarian setting, using

specifications of the type:

$$Y_{it} = \gamma_0 + \gamma_1 RightMaj_{it} + \rho(ThresholdDistance_{it}) + \epsilon_{it}, \qquad (5)$$

where $RightMaj_{it}$ is an indicator variable equal to one if the right-wing bloc holds a majority of seats in the local council, and zero otherwise. γ_1 captures the effect of a right-wing seat majority on fiscal outcome, Y_{it}, and is the parameter of interest.[12] We finally add a low order polynomial of the distance to the majority threshold on each side of the discontinuity, $\rho(ThresholdDistance_{it})$.

We believe our simulation-based method for defining the forcing variable is an improvement on the seminal contribution of Pettersson-Lidbom (2008). Pettersson-Lidbom defines treatment according to having a seat majority, but uses the *bloc vote share* to define the forcing variable. This violates the basic idea of the RD design, whereby the treatment status should be determined entirely by the forcing variable. In Online Appendix B we explain how using either the bloc seat shares or bloc vote shares as forcing variables for seat bloc majority would invalidate standard RD designs.

4.3 Joint Estimation

We use the following specification to jointly estimate the effects of the average left-right position of the council and the seat majority:

$$Y_{it} = \beta_0 + \beta_1 \widehat{I}_{it} + \gamma_1 RightMaj_{it} + \beta_2 \frac{c_{1it}}{S_{it}} + \beta_3 \frac{c_{2it}}{S_{it}} + \beta_4 V_{it} + \rho(ThresholdDistance_{it}) + \epsilon_{it}, \quad (6)$$

With this specification we jointly estimate the effect of exogenous differences in the average left-right position of the council, $\widehat{I}_{it}$, and exogenous differences in having right wing

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[12]Pettersson-Lidbom (2008) interprets the treatment effect as the impact of being in power. He relies on the strong assumption that the left-right division in Sweden determines who rules the municipality. If the assumption of a two-bloc model is not valid in all cases we cannot interpret the treatment effect as that of being in power, but rather as the effect of gaining a seat majority.

seat majority. Estimating the two effects jointly allow us to isolate the effect of changes in the average policy position holding the seat majority constant (and vice versa).[13] In the Online Appendix we present results both with and without demographic control variables and election period fixed effects.

5   Results

The current section addresses the key empirical question: Does party representation matter only when majorities change, or does an additional seat yield additional influence even when the majority is uncaffected?

5.1   Main Results

Table 2 displays our main results. Estimates for each fiscal policy outcome are provided in separate rows and specifications vary by column. Column (1) yields partial estimates for the average left-right position of the municipal council. The left-right index is instrumented with the treatment variables in a 2SLS framework.[14] Columns (2) and (3) display estimates for right-wing bloc majorities using a second and third order polynomial in the forcing variable on each side of the discontinuity, respectively. Columns (4) and (5) show the joint estimation models. The effect of the left-right index then captures shifts in party representation that does not affect the seat majority. Our approach assumes that parties' fiscal preferences are one-dimensional, which is largely consistent with the survey evidence reported in Section 3.4.

The Left-Right index estimates in column (1) shows a reduction in the likelihood of

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[13]To jointly estimate the effect of the average left-right position and the seat majority in the council we must use the full set of observations. For the *partial* effect of changes in the seat majority we can, however, implement specifications using a limited bandwidth. If we rely on a local linear specification and the bandwidths suggested by the algorithms developed by Imbens and Kalyanaraman (2012) and Calonico, Cattaneo and Titiunik (2014), the estimated partial effects of seat majority status is basically unaltered (cf. Online Appendix Figure C.2).

[14]The first stage regressions are reported in Online Appendix Table C.2. There is no weak instruments problem. For specification (1), for example, the F-statistic on the excluded instruments is 49.3 ($p < 0.0000$).

Table 2: Political Representation and Fiscal Policy: Main Results

	(1) Index	(2) Majority 2nd order	(3) Majority 3rd order	(4) Both 2nd order	(5) Both 3rd order
Property Tax					
- Index	-0.30			-0.25	-0.24
	(0.49)			(0.48)	(0.49)
- Majority		-0.42**	-0.49**	-0.40**	-0.50**
		(0.18)	(0.23)	(0.17)	(0.22)
User Charges					
- Index	-0.58			-0.58	-0.58
	(0.36)			(0.37)	(0.37)
- Majority		0.07	0.08	0.09	0.12
		(0.14)	(0.19)	(0.15)	(0.19)
Child care					
- Index	-1.13**			-1.12**	-1.12**
	(0.46)			(0.45)	(0.46)
- Majority		-0.23	-0.20	-0.08	-0.11
		(0.15)	(0.20)	(0.15)	(0.20)
Education					
- Index	0.27			0.28	0.27
	(0.46)			(0.46)	(0.46)
- Majority		-0.14	0.08	-0.09	0.06
		(0.16)	(0.22)	(0.16)	(0.21)
Elderly Care					
- Index	0.97**			0.94**	0.94**
	(0.45)			(0.46)	(0.46)
- Majority		0.03	-0.09	-0.04	-0.16
		(0.17)	(0.25)	(0.18)	(0.26)
Health Care					
- Index	0.28			0.26	0.26
	(0.39)			(0.39)	(0.39)
- Majority		0.23	0.10	0.20	0.07
		(0.17)	(0.22)	(0.17)	(0.22)
Culture					
- Index	-0.54			-0.46	-0.47
	(0.41)			(0.40)	(0.40)
- Majority		-0.25*	-0.04	-0.25*	-0.02
		(0.14)	(0.18)	(0.14)	(0.19)
Transport					
- Index	-0.27			-0.20	-0.20
	(0.55)			(0.54)	(0.54)
- Majority		-0.03	-0.15	-0.04	-0.17
		(0.13)	(0.17)	(0.14)	(0.18)
Central Administration					
- Index	-0.22			-0.25	-0.25
	(0.44)			(0.43)	(0.43)
- Majority		0.34**	0.18	0.29*	0.24
		(0.17)	(0.23)	(0.16)	(0.22)

*Note: The parameter estimates reported in the first row give standard deviation changes in fiscal policy of a one standard deviation increase in the policy indexes. The policy index is instrumented with the treatment variables ($\frac{t_p}{S}$) in a 2SLS framework. The parameter estimates reported in the second row give standard deviation changes in fiscal policy of changing the majority from the left to the right-wing bloc. In specification (2) and (4) a second order polynomial in the forcing variable is included on each side of the discontinuity. In specification (3) and (5) a third order polynomial is included on each side of the discontinuity. In specification (1), (4), and (5) we include a vote share control function (cf. Equation (4)). Standard errors clustered at the local government level in parentheses, * $p < 0.10$, ** $p < 0.05$.*

property taxes following a right-wing shift in council representation, but the effects are not statistically significant. The partial estimates for having a right-wing majority (columns 2 and 3) on property taxation are, however, statistically significant. We find that a right-wing seat majority reduces the likelihood of levying property taxes by half a standard deviation. This implies a change in the probability of levying property taxation at the threshold of about 23 percentage points. This is a substantial effect which is visible in the raw data, see Figure 3. Importantly, the simultaneous estimation in columns (4) and (5) display similar effects, suggesting that party representation mostly affects property taxes through seat majorities.

For user charges, none of the specifications yield statistically significant party effects. The majority estimates for user charges are small, while effects are larger of non-majority changes in party representation. User charges on infrastructure services are levied with a fixed sum per household, and they have a regressive redistributive impact. Low levels of user charges (lower than unit costs) mean that services must be financed by other revenues, which implies less spending on welfare services. This can explain why a more left-leaning local council set higher user charges than a right-wing council.

The welfare services are targeted on the young and the elderly. For child care, we obtain consistent negative effects of differences in the average left right position of the council, and small and insignificant effects of seat majorities. A one standard deviation increase in the Left-Right position is estimated to reduce spending on child care by about 1.1 standard deviations. Conversely, the index causes a significant increase in spending on elderly care. The index effect on elderly care corresponds nicely to the negative effect on child care. Having a right wing seat majority have small and insignificant effects on care for the elderly. All model specifications in Table 2 suggest relatively small effects of both the average position and seat majority on education and health care.

Table 2 displays estimates for three local public goods, culture, transport and central administration. Models (2) and (4) indicate negative majority effects on cultural spending, and positive majority effects on central administration. Yet, the more flexible

Figure 3: Dependent variable averages as a function of the distance to majority change.
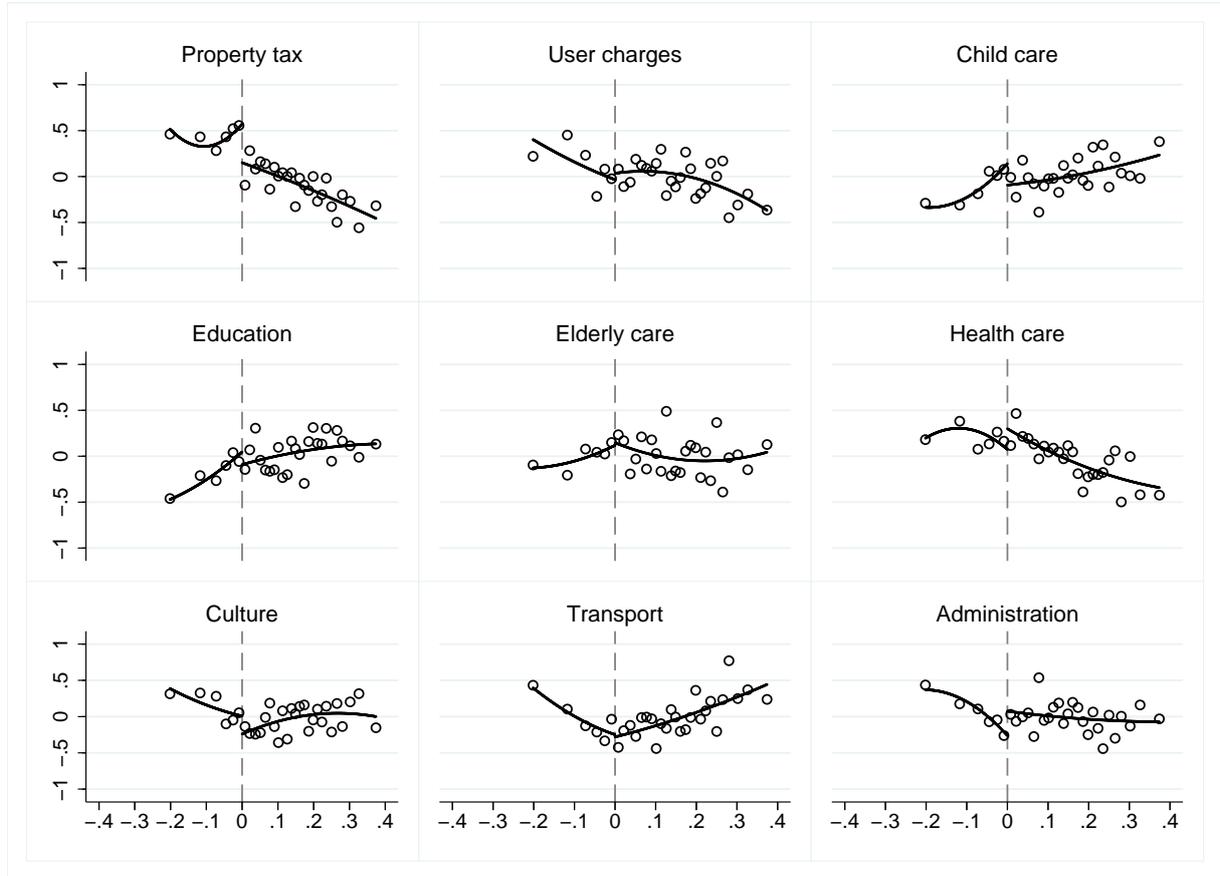
Note: The figure shows the relation between fiscal policies and the distance to majority change from right to left (i.e. right-wing win margin). Each fiscal policy outcome is standardized to have mean zero and standard deviation one. Each bin includes about 37 observations (n=1122). Separate quadratic lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. The figure is produced with the Binscatter module in STATA.

third order polynomials in the forcing variable yield smaller and insignificant effects. The estimates of the average position are quite large for culture, but large standard errors imply weak precision. All estimates for transportation spending are quite low and not significant. This suggests that party representation has small or no effects on local public goods.

Overall, changes in seat majorities appear to affect property taxes only. The right-wing party bloc is less inclined to apply property taxes, which corroborate the hypothesis that these taxes are salient and controversial. This result corroborates Pettersson-

Lidbom's (2008) study of Swedish municipalities, but deviates from the results of Ferreira and Gyourko (2009) for U.S. cities. The results presented here indicate that parties do indeed matter when taxation is used to finance welfare services (Norway and Sweden), but not local public goods (U.S. cities).

There is suggestive evidence that parties matter for spending allocations as well. In line with the diagrams on spending preferences (Figure 2), Table 2 suggests that representation affects allocations for child care and care for the elderly, but not for other welfare services (education and health care) and local public goods.

In Figure 2, we observed that it is primarily the far right-wing and far left-wing parties (the Progress Party and the Socialist Left Party) that articulate the demands of the elderly and young. These parties are never the median parties on local councils.[15] In a proportional representation system it is, however, plausible that these parties are able to sway spending allocations even without affecting which party bloc it is that holds a seat majority. In the Online Appendix we provide graphical evidence that this is the case. When plotting fiscal policy outcomes on the distance to seat changes for *individual parties*, we see that increased representation of the far-left party (SV) seem to increase child care spending (cf. Figure C.9), while increased representation of the far right-wing party (FRP) seem to increase elderly care spending (cf. Figure C.11). These estimates corroborate the proposition that parties can sway fiscal policies in accordance with their policy preferences. This result echoes Folke's (2014) finding in which the representation of small special interest parties influence environmental and immigration policies.

The estimates for child care and elderly care demonstrate that party power is more than majority politics. Changes in party representation in PR systems can sway allocations even if the same party bloc remains in majority.

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[15]Based on parties' seat shares and the left-right ordering of political parties we can identify the median party in each municipality. A frequency count yields the following result: Labor Party (18.9%), Center Party (34.9%), Liberal Party (9.6%), Christian People's Party (12.5%), joint lists of right-wing parties (1.8%), Conservative Party (5.0%), and Pensioners' Party (0.8%). In the other cases, the median involved various local lists.

5.2 Media coverage and election campaigns

In specification (5) of Table 2 we present eighteen estimates of 'party power'. Three of them are statistically significant at the five percent level. The pattern documented fits well with the stated preferences of party representatives (cf. Figure 2). Still, one might worry whether the significant results of Table 2 are products of multiple testing. A formal way do deal with this issue is to use the procedure suggested by List, Shaikh and Xu (2016). However, this has two caveats. First it does not allow us to incorporate the fact that it is more likely to find a treatment effect for some outcomes than for others. Secondly, it can only applied to binary treatments. To address the concern of multiple testing we have therefore taken a less formal approach by supplementing the analysis of politicians' fiscal policy preferences with data on media coverage. Which policy areas receive the most media attention during election campaigns?

We rely on a large database from the Retriever organization.[16] These data facilitates full-text search on a number of newspapers. The media archive covers fewer newspapers before the 2007 local elections, and we therefore limit the analyses the three local elections in the 2007-2015 period. We identify media attention by searching the digitalized archives, using generic keywords that cover the relevant local fiscal policies. The relevant test statistic is hits per quarter, calculated for the 27 news outlets where data is available for the entire period.

From Figure 4, we observe that the number of hits on "property taxes" display peaks in the quarters with local elections (solid vertical lines). On average, news media refer to property taxes about 300 times per quarter, while this number is tripled during in the local election quarters. A weaker, but similar pattern exists for user charges. Importantly, "elderly care" appears to be covered more extensively in the local election quarters, and we see more modest peaks in quarters with national elections (dashed vertical lines). "Child care coverage" also display a local election cycle, but less pronounced than elderly

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[16]The Retreiver archive is available to the public. For further information, see `http://www.retriever-info.com/en/category/news-archive/`.

Figure 4: Media hits per quarter for keywords covering the relevant local fiscal policies
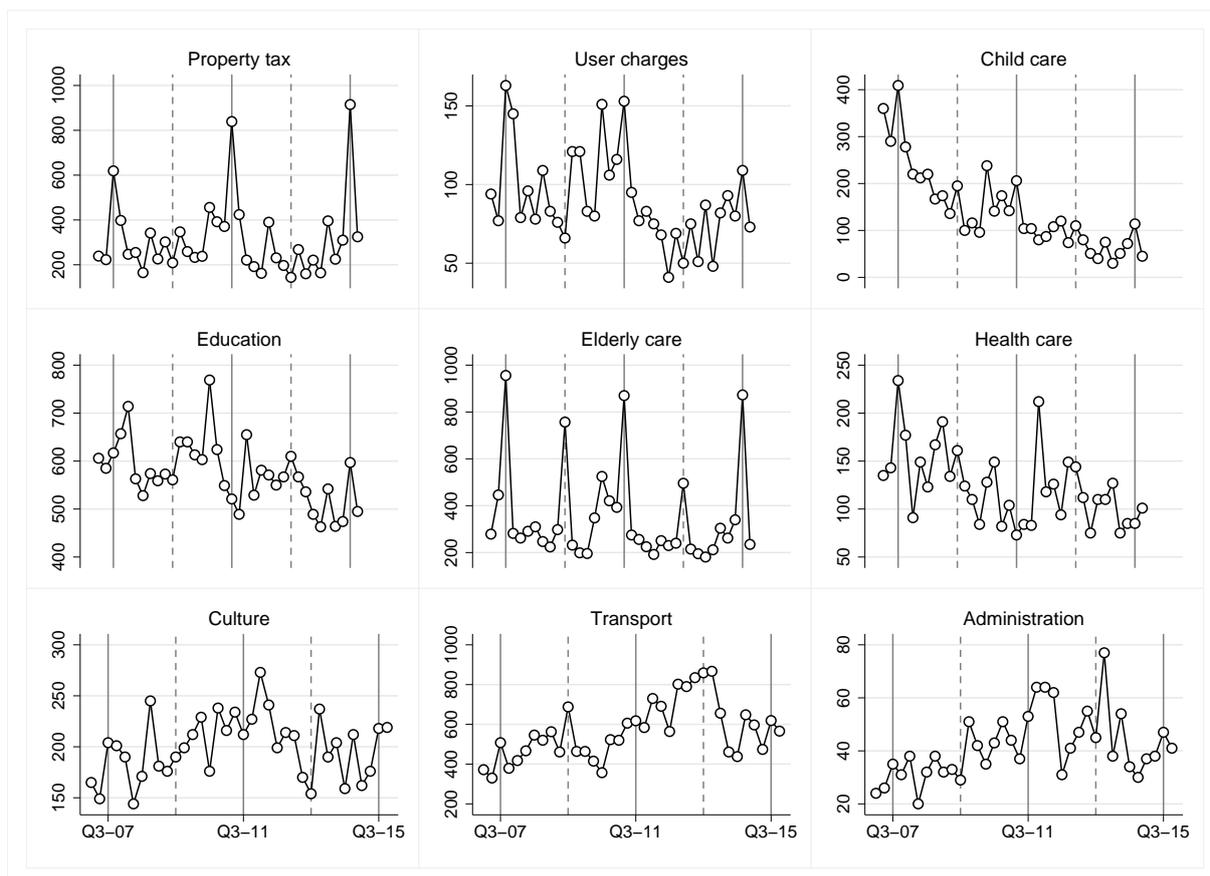
Note: The diagram displays number of hits per quarter over the 1.1 2007- 31.12 2015 period. The solid vertical lines indicate the local elections held in September 2007, September 2011, and September 2015. The dashed vertical lines indicate the national elections held in September 2009 and September 2013. The data derive from search in the digitalized archives of Norwegian news media, the Retriever database. The diagrams exploit a balanced panel on 27 printed newspapers, including 13 national, 9 regional, and 5 local newspapers. Each search applied a simple set of key words selected to capture each of the fiscal policy sectors. The following search terms were used (the Norwegian wording in parentheses): property tax (eiendomsskatt), user charges (kommunale avgifter), child care (barnehagedekning), education (grunnskole), elderly care (eldreomsorg), health care (sosialhjelp), culture (kultur AND idrett), transport (samferdsel) and administration (kommunal administrasjon).

care. The search words covering the other fiscal policies are "primary school", "social assistance" (the primary spending category of health care), "culture and sports", "transportation" and "municipal administration". These items appear uncorrelated with the timing of elections. These findings appear robust to a number of modifications in search words.[17]

A comparison of the partisan preferences displayed in Figure 2 and patterns in Figure 4 reveal some striking patterns. The left-right positions of parties are strongly correlated with preferences for property taxes, and we see that media interest spikes during the election campaigns. It is therefore reasonable that parties matter for this policy area.

The parties on the left prioritize spending on the young - child care and education. Yet, media interest correlates with the election cycle for child care only. Conversely, spending preferences differ relatively modestly for elderly care, yet we see a striking election cycle in media attention. This suggests that party representation could affect the spending trade-off between young and elderly. Finally, left-right party positions relate weakly with preferences of other spending items, and media interest show no election-quarter effects, providing suggestive evidence on why we do not find any clear effects of party representation on these expenditure categories.

5.3 External Validity

A common critique of electoral regressions discontinuity designs is that they have low external validity since close elections are different from those that are not. From Section 3.4, we know that local party platforms exhibit little variation across time and space, which indicates that the RD effects estimated in 'close races' do have external validity. However, we can examine this in a more direct manner. Since we have policy preferences measured at the municipality level we can examine if the positions of parties differ when an

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[17]We explored a number of related search expressions. For example, as an alternative to *primary education* (*grunnskole*), we tested *schooling* (*skole*); as an alternative to *culture and sport* (*kultur* AND *idrett*, i.e. occurrences of both words in the same news story), we tested *culture*; as an alternative to *social assistance* (*sosialhjelp*), we tried *health care* (*helsevesen*). Using these search words did not show additional election quarter effects in media coverage.

election is defined as close and when it is not. In the interest of space we limit ourselves to an analysis of survey responses concerning left-right self-placement and council members' preferences on property taxes. The results show that parties do not position themselves differently whether the elections are close or not (cf. Online Appendix Tables C.5 and C.6). This gives important support for the external validity of our results.

5.4 Sensitivity Checks

Under proportional representation 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. It is therefore unsurprising that we do not find any bunching of observations around the threshold for a seat change (cf. Online Appendix Figure C.3) and that parties' vote share at the threshold for a seat change remain stable (cf. Online Appendix Figure C.4). This suggests that concerns raised by Caughey and Sekhon (2011) are of little consequence in the proportional representation setting (see also Online Appendix B).

In the Online Appendix we provide results from several alternative specifications. We find similar results if we include election period fixed effects and predetermined control variables in our baseline specification (cf. Online Appendix Table C.3).[18] This indicates that the effects reported in the baseline specification should be given a causal interpretation, and that the RD is successful in isolating 'as good as random variation'.

We do notice, however, that not all predetermined variables balance well around the cut-off for a seat majority change (Online Appendix Table C.4). In particular, the share of people living in rural areas (rural) is higher just to the right of the cut-off for a seat majority change (cf. Online Appendix Figure C.1). This could, of course, be a fluke, but we still find this somewhat worrying. We have investigated what happens with this imbalance if we use a local linear regressions, using triangualar kernels, and choose the

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[18]The point estimates for child care and elderly care fall in absolute value, but are still statistically significant. The estimated effects on child care fall from -1.1 to -0.7. The estimated effect on elderly care fall from 0.9 to 0.8.

"optimal bandwidths" as suggested by Imbens and Kalyanaraman (2012) and Calonico, Cattaneo and Titiunik (2014). In these specifications the estimated "effect" for rural is somewhat smaller and significant only at the ten percent level. The property tax effect, however, do not change much when varying the bandwidth and is statistically significant at the five percent level with both types of "optimal bandwidths". Using an alternative definition of the property tax variable (also including commercial property taxation) we get stronger results (cf. Online Appendix Figure C.2).

6 Conclusion

The overall picture is that local party representation has causal effects in some high-profile policy areas. Following Lijphart's (1999) conjecture, we find that parties matter even when holding the bloc with a seat majority constant. Left-right party politics permeates the local tax-setting and allocation on welfare spending; local public goods, on the other hand, appear to be a non-partisan issue.

Elected assemblies make decisions by majority voting, and it comes as no surprise that bloc majorities cause changes in fiscal policies. Yet, it is an unresolved question why political parties matter when bloc majorities remain constant. One proposition asserts that seat share changes only matters when parties are members of the incumbent coalition. According to Gamson's law, coalition partners distribute portfolios proportional to their share of representatives. This might explain the observed effects. Coalition members may also bargain directly over policy priorities, a topic which is analyzed by Freier and Odendahl (2015). Another hypothesis suggests claim that seat share changes matter even when the party is outside the incumbent coalition. Though Folke (2014) provides evidence in support for this hypothesis, we have little knowledge on the sources of minority party influence. It remains for future research to disentangle the importance of these causal mechanisms.

Parties may indeed affect policies even when voter preferences are fixed. This is the

democratic supply schedule referred to in the introduction. The current paper does *not* address the demand schedule, the power of voters. Yet the analysis suggests a *potential* for electoral influence: voters can influence policies by altering party representation. This means that party power facilitates voter influence.

The introduction described the close 2007 election in Gjøvik. The analysis predicts what would have happened with a counterfactual election outcome: First, an additional seat to the right-wing Progress Party would probably have led to a right-wing majority coalition. The RD estimates suggest that property taxation might be abolished, while spending allocations would not change much. Second, an additional seat to the left-wing Labour party would not alter majorities, but only shift the average position of the council. We would expect more spending in favor of child care, but smaller changes in property taxation.

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Appendix

Table A.1: Descriptive statistics: Seat shares in the local council

	Mean	Std. Dev.	Min.	Max.
Left-Wing Parties				
Red Electoral Alliance (RV)	0.004	0.015	0	0.148
Socialist Left Party (SV)	0.061	0.059	0	0.471
Labor Party (DNA)	0.305	0.124	0	0.762
Green Party (MDG)	0.000	0.004	0	0.061
Joint lists	0.002	0.024	0	0.440
Right-Wing Parties				
Liberal Party (V)	0.045	0.058	0	0.471
Centre Party (SP)	0.170	0.135	0	0.667
Christian Democratic Party (KrF)	0.080	0.081	0	0.560
Conservative Party (H)	0.141	0.104	0	0.529
Progress Party (FrP)	0.099	0.090	0	0.486
Pensioners' Party (PP)	0.003	0.011	0	0.152
Joint lists	0.016	0.076	0	0.636
Party independent lists	0.073	0.132	0	0.810

Note: Descriptives based on municipal elections in 1999, 2003 and 2007. The sample is restricted as in main analysis (n=1122). Data from Fiva, Halse and Natvik (2012).