Public Employees as Politicians: Evidence from Close Elections[†]

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Abstract

We analyze the effect of municipal employees' political representation in a municipal council on local public spending. We use close elections in a proportional election system in Finland, which has the largest public sector in the OECD and the second most indebted local government. One more councilor employed by the public sector increases spending by about one percent. The effect comes largely through the largest party. It also is specific to the employment sector of the municipal employees.

Keywords: Close elections, political representation, public employees, public spending

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1 Introduction

In 2013 public sector employees accounted on average for 21% of the total employment in the OECD countries (OECD 2015). They are therefore a large interest group that can influence politics by voting and/or lobbying. Public sector employees are also politicians themselves quite often. Their dual role has raised the concern that public sector employees who get elected may be in a better position to extract rents from holding the office than otherwise similar politicians employed by the private sector.[1] Many countries have imposed restrictions on the political participation of public sector employees to curb this type of potential conflict of interest. There is, however, surprisingly little convincing evidence that when elected, public sector employees act differently from the other politicians. We start to fill this gap in the literature by estimating the (causal) effect of municipal employee representation in a municipal council on local public spending using data from Finland. The Finnish economy provides a particularly interesting context for such an analysis, because there almost 30% of employment is in the public sector and more than 20% of employment is in the local public sector.[2]

The incentives and ability of public sector employees to influence policy by voting or lobbying have attracted substantial scholarly interest. According to bureaucratic voting models (e.g. Downs 1967, Niskanen 1971, Blais et al. 1990 and 1991, Rattso and Sorensen 2004 and Dahlberg and Mörk 2006), a large public sector benefits civil servants and those who work for public administration because its greater size means better (re-)employment opportunities, inflated salaries and a variety of occasions for on-the-job consumption. Potential and current public sector employees may therefore have an incentive to vote for candidates who favor a large public sector. At the local level, municipal employees can also influence election outcomes through municipal unions that set out to endorse a candidate that prefers an (inefficiently) large public sector (e.g. Sieg and Wang 2013). It also is worth pointing out that when a public sector employee gets elected, she may have a wider variety of ways to target public spending to certain voters, such as her own political constituency or interest group (see e.g. Alesina et al. 2000). Political agency issues (see e.g. Besley and Case

[1] See Dahlberg and Mörk (2006) who analyze the double role of bureaucrats in the public sector and Courant et al. (1979) for the first formalization of the double role of public employees.

[2] Figures for Finland from Statistics Finland Labor Force Survey 2015 (see http://www.tilastokeskus.fi/til/tyti/2014/02/tyti_2014_02_2014-03-25_tau_009_en.html, visited 6.12.2015).

1995, Ferraz and Finan 2011 and Svaleryd and Vlachos 2009) may thus be exacerbated for those politicians who also work in the public sector.

An alternative view is that the preferences of public sector employees differ systematically from those employed by the private sector. Public sector employees seem to be politically more active (e.g. Bhatti and Hansen 2012) and lean more to the left ideologically (e.g. Knutsen 2001 and 2005 and Jensen et al. 2009). Public sector employees may also be more dedicated to serving the society and have intrinsic or benevolent motivations (e.g. Francois 2000, Besley and Ghatak 2003 and 2006). In addition, public sector employees may be better or differentially informed about the costs and benefits of providing public services, because they provide those services (e.g. Niskanen 1971 and Braendle and Stutzer 2012).

An important feature of Finnish local politics, shared by many countries, is that being a municipal councilor is not a full-time job. [3] The task typically takes a few hours a week and the monetary compensation involved is not nearly enough to live on. Therefore, most of the Finnish local politicians have a normal day job: For about one quarter (26%) of the local politicians this means working for the municipality (see Table 2). This means that the distribution of power between private and public sector employees in the municipal councils may have a large impact on the size and efficiency of the local public sector.

We estimate the treatment effect of political presentation of municipal employees on local public spending using data from 1544 Finnish local elections.[4] To identify the effect, we follow Clots-Figueras (2011, 2012), who instruments the fraction of women in a council by the fraction of seats won by women in close elections against men.[5] We extend her approach to multi-party proportional elections and build on candidate level close contests within party lists to construct a municipality level treatment variable for municipal employee representation.[6] This procedure allows us to compare municipalities that, by chance, have

[3] This feature is not unique to Finland, but rather a more typical feature of local politics. This is, for example, the case in the UK (Local Government Association 2012).

[4] The effects political representation of women or minority groups on policy outcomes has been studied by e.g. Pande (2003), Besley et al. (2004) and Chattopadhyay and Duflo (2004).

[5] Her method builds on the regression discontinuity design (see e.g. Lee et al. 2004 and Ferreira and Gyourko 2009). Folke (2014) is the first to implement the RDD setup in proportional elections to study party effects.

[6] A small number of recent studies have explored close contests that take place within parties in proportional elections: Lundqvist (2013) and Kotakorpi et al. (2013) use them to study the returns to holding political office. Hyytinen et al. (2014) study personal incumbency advantage and evaluate the performance of close elections RDD using the same Finnish local elections that we study in this paper. Unlike these prior papers, we are interested in municipal level outcomes.

marginally more municipal employees in their council to municipalities that, by chance, have marginally fewer. Our instrument captures the extent to which the seat share of municipal employees exceeds or falls short of their expected share due to randomness in the outcomes of the close elections. The identifying assumption is that when measured at candidate level and sufficiently close to within party election thresholds, the seat allocation between municipal employees and other candidates can be considered to be as good as random. This assumption can be tested indirectly by covariate balance tests. We define candidate level closeness within party lists to make sure that differences in party representation (party effects) are not driving the results.

Our main result is that electing one additional municipal employee to a council as opposed to a candidate from the same party, but from another occupation, increases annual per capita local public spending. This result is in line with the previous findings which show that smaller parties and even individual councilors have an effect on policy in proportional representation systems (e.g. Folke 2014 and Freier and Odendahl 2015). It also is consistent with Braendle and Stutzer (2012), who report a positive correlation between the share of public employees in the German Länder parliaments and the number of parliamentary interpellations.[7] Our estimates suggest that in a municipality with a median sized council (27 seats), the increase in local public spending is about 1 percent on average over the four-year council term. The effect is surprisingly large for two reasons: On the one hand, we are probably looking at a relatively unimportant margin, i.e., the last elected candidates within a party to a council that typically consists of tens of councilors. On the other hand, there are explicit restrictions on the types of political positions that Finnish municipal employees can take.

We can also provide evidence on the mechanisms that are and are not at work: Starting from the former, we find that the effect varies by the type of municipal employee: electing in close elections one more employee who works for the health care sector leads to an increase in health expenditures, but not in the other (non-health) municipal expenditures. Similarly, when a non-health care employee gets elected, her getting to hold the office leads

[7] In Braendle and Stutzer's view, the positive correlation suggests that public employee representation may lead to more efficient use of public funds. In a related study, Braendle and Stutzer (2010) explore the connection between legal institutions and incentives of public employees to run for office and the extent of political representation of public employees.

to an increase in expenditures unrelated to health care. Moreover, we can show that the positive effect on public local spending arises in particular in close elections that involve the largest party in the municipality. This evidence is consistent with municipal employee councilors influencing intra-party decision making. Such decision making has an effect on municipal policy only if the party is sufficiently large.

Moreover, the municipal employee effect is robust to simultaneously instrumenting also for the female's council shares with a similarly constructed instrument for female representation as for the municipal employees. This is crucial for interpretation of the observed effects, because municipal employment status is correlated with gender. As to the mechanism not at work, we find no robust effect on public spending from increased female political participation. This finding is in contrast to Clots-Figueras (2011), who shows that increased female participation from lower castes increases health spending and early education in India. An obvious explanation for the difference is that women's position in Finland and India are quite different: Finland was first in Europe and third in the world to allow female suffrage in 1906.

Finally, we are unable to find systematic evidence for the extra spending being related to rents that the politicians employed by the public sector potentially get from holding the office (through better employment opportunities, or greater wages; see e.g. Ahlin and Johansson 2001 and Dahlberg and Mörk 2006).[8] Nor does our data support the view that the increased spending reflects different preferences of public sector employees (for public sector size in general). Be that as it may, it is noteworthy that the Finnish municipal councilors employed by the public sector want to increase public expenditures in a country that in 2014 had, at 59% (OECD 2015, pp. 70), the highest public sector ratio to GDP among all OECD countries and whose local governments were, together with Italy's, the second most indebted in the OECD (OECD 2015, Figure 2.15 and underlying data).

The rest of the paper is organized as follows. In Section 2, we describe the institutional setting and data. We present the identification strategy in Section 3. Section 4 presents the results and Section 5 concludes.

[8] Moreover, e.g. Bruckner and Neumark (2014) and Diamond (2015) show that public sector employees are able to extract rents in the form of higher wages in the US.

2 Institutional setting and data

2.1 Finnish local governments

As, e.g., Hyytinen et al. (2014) and Saarimaa and Tukiainen (2015) describe, Finland has a two-tier system of government consisting of central government and municipalities as the local level. Finnish municipalities have extensive tasks. In addition to the usual local public goods and services, municipalities are responsible for providing most of social and health care services and primary and secondary education. Health care is the most important spending component and education the second most important. Municipalities are of considerable importance to the whole economy. The GDP share of municipality spending is roughly 18 percent and they employ around 20 percent of the total workforce.

Municipalities also have extensive fiscal autonomy and they cover their expenses mostly using own revenue sources. The most important tax instrument is the local income tax. The tax rate is flat and the municipalities can set the level freely.[9] The property tax is of much less importance and municipalities can set the property tax rates only within limits set by the central government. The corporate income tax is a state level tax, but municipalities receive a share of this tax revenue based on profits and employment of local firms. In 2012, the average share of the income tax of total revenue was 46 percent, while the shares of the property and corporate taxes were only 3 percent, respectively.

There are clear regional tax base and cost disparities, which are offset by a central government grant system. The system is based on estimates of average costs and tax bases so municipalities have very limited possibilities to influence the amount of grants that they receive. The grant system covers about 20 percent of total municipal revenues, but this share varies a great deal. The system covers more than 50 percent of all revenues for every fourth municipality.

Municipalities are governed by municipality councils. The council is by far the most important political actor in the municipal decision making. For example, mayors are public officials chosen by the councils and have only limited and only executive power. Moreover, municipal boards (i.e. cabinets) have only a preparatory role and the representation in the boards follows the same proportional political distribution as the representation in the council.

[9] The central government cannot assign new task to municipalities without passing legislation.

Municipal elections are held simultaneously in all the municipalities. The elections in our data were held at the fourth Sundays of Octobers in years 1996, 2000, 2004 and 2008.[10] The council term starts at the beginning of the next year and lasts four years. Therefore, the council elected e.g. in 1996 makes decisions for the years 1997-2000. All municipalities have just one electoral district.

Within each municipality, the seat allocation is based on the proportional representation, with open list D'Hondt election rule. In the elections, each voter gives a single vote to a single candidate and the voters cannot vote for a party without specifying a candidate. In this setting, voters (as opposed to parties) decide which candidates are elected from a given list, because individual votes rank the candidates within parties. The total number of votes over the candidates in a given party list determines the votes for each party. The entire vector of these party votes for all parties determine how many seats each party gets. Given the party seats, competition within-parties is simply an *n*-past-the-post rule.

There are a number of restrictions in place concerning the allowed political role of municipal employees. First, a municipal employee who is in an executive position in some branch of public service production cannot be a *council member*. For example, the director of a municipality's school authority cannot be a member of the municipal council. Second, a municipal employee cannot be a *member of the sub-committee* of his own specific sector. For example, a teacher cannot be a member of the sub-committee for education. Third, a municipal employee working in administrative duties directly under the municipal board cannot be a *member of the board*. Fourth, a municipal employee who is the presenting official for matters dealt by the municipal board cannot be a *member of the board*.

Also the broader institutional context may limit the opportunities of the municipal employees to extract rents in office. For example, wages are largely set at the national level wage bargaining between the municipal employer organization (Local Government Employers KT) and various labor unions. However, individual municipalities can of course pay more than agreed upon nationally, and sometimes they do: for example rural municipalities often need to attract doctors and other specialists with higher salaries.

[10] We do not use 2012 elections because the outcome variables are not yet available for them.

2.2 Data

Our data come from a number of sources and refers to individual candidates (politicians) and municipalities:

As for the data on candidates, we have collected data from municipal elections held between 1996 and 2008. These data consist of candidate level election results, in particular party affiliation, number of votes and elected status. The election data also includes the age and gender of the candidates.[11] Information on municipal employment status comes from KEVA (formerly known as the Local Government Pensions Institution), and we have linked the candidate data also to Statistics Finland data on education, occupation and socio-economic status and to the income data from the Finnish Tax Authority. Overall we have 160,996 candidate-election observations. We do not have the income data for 1996 candidates and the education data is missing for some candidates for all of the years.

The characteristics of the candidates running in municipal elections held between 1996 and 2008 are shown in Table 1.[12] For our purposes, a candidate is a municipal employee, if she was employed by a municipality at the end of the election year. Compared to other candidates, municipal employees are more often female (nurse is the most common profession among them), classified as high professionals in their socioeconomic status and running for the Social Democratic Party. These observable differences in candidate characteristics may confound our econometric analysis, despite it being conducted at the municipality (not candidate) level (see e.g. Clots-Figueras 2011). We will return to this issue when we present our econometric approach in detail.

[11] The election data are publicly available from the Statistics Finland. However, our data was provided by the Ministry of Justice to include social security numbers so that we were able to link this data to other official registers.

[12] We omit 33 elections because those municipalities underwent a municipal merger in the middle of the election term. Due to some ambiguity in the candidate-level election data in 2004 elections for two municipalities (that merged) we also omit those municipalities for that year. As far as we have been able to determine, the ambiguity results from a popular candidate being disqualified, and thus, from a candidate with less votes getting elected.

Table 1. Candidate characteristics.

	All		Municipal employees		Other	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Number of obs.	155 111		35 977		119 134	
Vote share	1.01	1.21	1.11	1.28	0.98	1.19
Party vote share	6.05	11.30	6.18	10.53	6.02	11.52
Number of votes	59.3	148.8	68.8	152.0	56.5	148
Female	0.39	0.49	0.56	0.50	0.34	0.47
Age	46.2	12.3	45.1	10.5	46.6	12.8
Incumbent	0.21	0.41	0.25	0.43	0.20	0.40
Wage income (€)	20 307	26 245	22 625	13 129	19 563	29 190
Capital income	1 864	23 056	881	5 153	2 179	26 327
High professional	0.20	0.40	0.31	0.46	0.16	0.37
Unemployed	0.07	0.25	0.05	0.22	0.07	0.26
University degree	0.15	0.36	0.18	0.38	0.14	0.35
Coalition Party	0.19	0.39	0.17	0.37	0.19	0.40
Social Dem. Party	0.22	0.41	0.27	0.44	0.20	0.40
Center Party	0.28	0.45	0.26	0.44	0.28	0.45
True Finns	0.03	0.17	0.02	0.12	0.03	0.18
Green Party	0.04	0.20	0.05	0.22	0.04	0.20
Left Alliance	0.11	0.31	0.11	0.31	0.11	0.31
Swedish Party	0.04	0.19	0.04	0.19	0.04	0.19
Christian Dem. Party	0.04	0.20	0.04	0.20	0.04	0.21
Other parties	0.05	0.22	0.04	0.20	0.06	0.23

Notes: Income data are not available for 2012 elections, and in 1996 elections they are available only for candidates who run also in 2000, 2004 or 2008 elections (number of observations 96040 for the whole sample, 23317 for municipal employees and 72723 for other candidates). Income and income per capita are expressed in euros. We use 1995 occupation data for the elections held in 1996. Due to missing data, the number of observations for high professional and unemployment status are 155035, 23317, 72723, and for university degree 122720, 31247, 91473, respectively.

In addition to the candidate level election data, we use information on municipal expenditures and demographics for the years 1996–2012. All data on municipality characteristics are publicly available from the Statistics Finland.

Table 2 reports the summary statistics of municipality and municipal council characteristics from 1544 municipality-council term observations. On average, municipalities' total expenditures are 5500 euros per capita. The single most important expenditure category is health care, where the average per capita expenditure is 1,700 euros. Municipal employees' seat share is on average 26.4%, which is considerable when compared to typical seat shares of parties. The high average seat share of the Center Party

(40.5 %) is explained by the twin fact that the party is very popular in small rural municipalities due to it having been an agrarian party and that a majority of Finnish municipalities are small and rural.

Table 2. Summary statistics for municipal and council data.

Variable	Mean	Std. dev.
Municipality characteristics		
Total expenditures (€ per capita)	5,564	999
Health care expenditures (€ per capita)	1,699	409
Other expenditures (€ per capita)	3,865	822
Population	12,912	36,999
Young inhabitants %	17.7	3.52
Old inhabitants %	19.5	4.90
Council composition		
Council size	29.1	11.3
Municipal employees %	26.4	12.3
Municipal health care workers %	7.02	5.11
Municipal non health care workers %	19.40	11.43
Incumbents %	56.9	9.22
Women %	33.9	8.93
High professionals %	20.9	11.9
University educated %	12.6	9.9
Unemployed %	3.54	4.02
Center Party seat share %	40.5	21.2
Coalition Party seat share %	16.3	10.9
Social Democratic Party seat share %	19.6	11.3
Green party seat share %	1.88	3.52
Left Alliance seat share %	7.82	8.01
Swedish Party seat share %	5.33	18.1
True Finns seat share %	1.75	4.13
Christian Democrats seat share %	2.99	3.94
Other parties seat share %	3.87	9.05

Notes: Unit of observation is a municipality *m* in election period *t*. Number of observations is 1544. Municipality characteristics are calculated as means over the four year council term.

3 Econometric approach

3.1 Identification strategy

We are interested in the treatment effect of political representation of municipal employees on municipal policy. Our main equation of interest is

$$Y_{mt} = \delta M_{mt} + \boldsymbol{X}'_{mt}\boldsymbol{\beta} + u_{mt}, \quad (1)$$

where Y_{mt} is the outcome of interest, M_{mt} is the seat share of municipal employees in the council, $\boldsymbol{X}'_{mt}$ is a vector of control variables (possibly lagged), and u_{mt} is the error term in municipality m at time t. The parameter of interest is δ, which measures the effect of an increase in the seat share of municipal employees on the outcome.

Our main outcome variable is municipal expenditures. A simple OLS estimation of equation (1) may suffer from both reverse causality and omitted variable bias. This could be the case if, for example, voters in a municipality demand for a high level of (labor intensive) municipal services. Such a municipality would have a high number of municipal employees. This, in turn, calls for greater municipal expenditures and would as well show up as a greater council seat share of public sector employees.

We employ two methods to estimate the treatment effect of interest (δ). First, we use an instrumental variable (IV) estimator, using a close-elections approach similar to Clots-Figueras (2011, 2012). As we explain below, our instrument measures the extent to which the seat share of municipal employees exceeds (falls short of) their expected share due to randomness in the outcomes of the close elections. Second, to preserve power, we will invoke the structure of our estimation problem which implies that the coefficient of our instrument in the 1st stage of the IV should in expectation be one. This feature means that in the reduced form of our IV of equation (1), the coefficient of the instrument ought to be very close to the IV estimate of δ.

Unlike much of the recent literature on close elections, the Finnish municipal election system of proportional representation with open party lists does not easily render itself to a simple regression discontinuity design (RDD) analysis at the municipality level. We therefore build on Clots-Figuears (2011, 2012) who uses the fraction of women winning close elections in Indian State Legislature elections to instrument for the share of women in the legislature.[13] We extend her method by developing a procedure that uses random variation at candidate level in the close elections and aggregates this variation to a municipality level instrumental variable. To capture only the treatment effect of political representation of municipal employees on municipal expenditures, we focus on closeness within party lists.

[13] Clots-Figueras (2012, pp. 223) defines a close election to be one where "the difference in votes between the winner and the runner-up is less than 3.5 percent of the total votes for that particular constituency.

This choice means that between-party changes do not confound our results. For example, if municipal employees are more often left- than right-wing, between party comparison would give us the joint effect of municipal employees and party status.

To measure the extent to which the seat share of municipal employees exceeds or falls short of their expected share due to randomness in the outcomes of the close elections, we construct our instrument in the following steps:

Step 1: For each party list *p*, we define the pivotal number of votes as the average of the maximum number of votes among the non-elected candidates and the minimum number of votes among the elected candidates. The distance to getting elected for each candidate is the number of votes of the candidate minus the pivotal number of votes in the party list.[14] We normalize this distance measure by dividing it by the total number of votes of the party list and then multiply it by 100. We denote this variable v_{ipmt}.[15] Closeness of each candidate *i* in party list *p* in municipality *m* in election *t*, C_{ipmt}, is then defined as

$$C_{ipmt} = \begin{cases} 1 \text{ if } |v_{ipmt}| \leq \varepsilon \\ 0 \text{ if } |v_{ipmt}| > \varepsilon \end{cases}, \qquad (2)$$

where ε is some small bandwidth. The intuition for using this measure is that due to randomness in the outcomes of elections, candidates just above and below the pivotal number do not differ systematically from each other. Indeed, when $\varepsilon = 0$ in our data, there was a tie between two or more candidates at the threshold of getting into the council. In such a case, it is mandated by the law that a lottery decides which of the candidates are elected (see Hyytinen et al. 2014 for further details of these lotteries). There are 1351 candidates who end up in these lotteries and 335 of them are municipal employees.

Step 2: Quasi-randomization taking place within each party list influences how many municipal employees get elected from each list. To capture this random variation at the

[14] We get similar results if we define the distance either in terms of the number of votes (instead of vote shares) or if we measure the distance using the bootstrap strategy of Kotakorpi et al. (2013). Alternative definitions for the pivotal number of votes produce similar results, too.

[15] Note that v_{ipmt} cannot be defined for party lists (or candidates) where none of the candidates get elected or all of the candidates get elected. In total, this means that approximately 4800 candidate-election observations are left out from our analysis.

party list level, we calculate the difference between the realized outcome and the expected outcome of the within party randomization.[16] Formally, the difference can expressed as

$$T_{pmt}=\left(\sum_i^{N_p} C_{ipmt}D_{ipmt}\,M_{ipmt}\right)-\left[\frac{\sum_i^{N_p} C_{ipmt}M_{ipmt}}{\sum_i^{N_p} C_{ipmt}}\sum_i^{N_p} C_{ipmt}D_{ipmt}\right], \qquad (3)$$

where M_{ipmt} is equal to 1 if candidate *i* is a municipal employee and zero otherwise, D_{ipmt} equals 1, if candidate *i* in municipality *m* was elected in the election *t*, and zero otherwise and *p* refers to a party list and N_p to the number of candidates in the list *p*. The first term is the number of municipal employees that are elected in the close elections. The second term is the *expected* number of municipal employees who get elected in the close elections. The expected number comes from a hypergeometric distribution, because close elections can be seen as a basic urn problem.[17] The reason for this is that there may be more than two candidates defined as close and thus subject to randomization (as we define it here) and any number of the close candidates can be municipal employees. Moreover, the set of candidates defined as close may compete for more than one seat within the party list. These complications are the main difference between the Clots-Figuears (2011, 2012) approach, because she considers only situations where two candidates (one male and one female) compete for one seat, and therefore, does not need to consider the expectations when constructing the instrument.

Step 3: We aggregate the random variation at the party list level to construct a municipal level instrumental variable, T_{mt}. This is done by adding up T_{pmt} over all the party lists within a municipality and dividing the sum by council size (*CS*):

$$T_{mt} = 100*(\sum_p T_{pmt})/CS_{mt}. \qquad (4)$$

[16] It is important to point out that simply "adding up" candidate level treatments would not be appropriate. For example, consider three municipal employees who are close and compete for one seat from a given party list. There is no treatment at the party (or the municipality) level in this case, because the outcome cannot be anything else but a municipal employee getting elected.

[17] When a basic urn problem is applied to our context, the expected value is (n(K/N)), where *n* is the number of available close seats, *K* the number of close municipal employees and *N* the number of close candidates. The expected value of the urn problem is the same with and without replacement.

Our instrument, T_{mt}, captures the extent to which the seat share of municipal employees exceeds ($T_{mt} > 0$) or falls short of ($T_{mt} < 0$) the expected share due to randomness in the outcomes of the close elections. If, in a given municipality, municipal employees were lucky within one party list and equally unlucky in another, the treatment at the municipal level would be zero. One can think of T_{mt} as the part of the variation in M_{mt} that is as good as random, similar to the fraction of women chosen in close elections in Clots-Figueras (2011, 2012). Our IV approach thus assumes that T_{mt} is a determinant of M_{mt}, i.e. the (actual) seat share of municipal employees in the council. It also assumes that T_{mt} is as good as random and thus uncorrelated with u_{mt} in (1). As we show later, this assumption can to an extent be tested using municipality level covariate balance tests. Moreover, the candidate level bandwidth can be used to check the robustness of the results to the bandwidth choice.

Empirically, T_{mt}, appears to work as expected (see Appendix A for details of these analyses): First of all, it is symmetrically distributed around zero. Moreover, when the seat share of municipal employees increases due to randomness in the outcomes of the close elections (i.e. when T_{mt} increases by one unit), so does their actual share (i.e., M_{mt}). This implies that the coefficient of T_{mt} in the 1st stage of the IV should be close to one. As we show later, this is indeed empirically the case in our data. Finally, even with the smallest possible bandwidth ($\varepsilon = 0$), we have variation in T_{mt} . The reason for this is that there are many parties in each municipality and ties, and thus, lotteries can take place in any one of them. As we increase the bandwidth, almost all the municipalities have a close contest within at least one of its party lists. For example, for bandwidth $\varepsilon = 0.4$, 1145 municipalities out of the 1544 receive either a positive or negative treatment (as captured by T_{mt}). This does *not* imply that for these municipalities we would use all the variation in their municipal employee council seat share. We only use for identification of δ the random part of the variation in the seat share (as explained above).

Two final points about the procedure of constructing our instrument are worth mentioning. First, one could argue that there is an RDD flavor to our approach. We agree, but stress that we do not have a well-defined forcing variable at the municipality level (even though we have one at the individual candidate level). We cannot therefore implement a standard RDD analysis. Second, our procedure can be adapted to other political systems and settings. For example, it can be used to analyze party effects in plurality systems, where

quasi-randomization takes place within districts (with each electing one or more councilors) and where such variation needs to be aggregated to e.g. the council level for the analysis.

3.2 Preliminary analyses and validity tests

In Table 3, we report the covariance balance tests for the narrowest possible bandwidth (ε = 0) and the largest bandwidth that we use in the regressions (ε = 0.4).[18] We report both of these, because we face a trade-off: On the one hand, the smaller bandwidths lead to less precise estimates, because there is less variation T_{mt} . On the other hand, the smaller the bandwidth is, the more plausible is the assumption of "as good as random assignment". For the purposes of the table, we divide the municipal election observations into two groups, according to the seat share of municipal employees exceeds ($T_{mt} > 0$) or falls short of ($T_{mt} < 0$) its expected share due to randomness in the outcomes of the close elections.

As Table 3 shows, all the pre-treatment variables are well balanced, including the lagged municipal employee share in the council and the lagged (log of) total expenditures. This means that the municipalities where the municipal employees won, by chance, more seats are very similar to the municipalities where municipal employees lost, by chance, seats to other occupation groups.

[18] The number of observations varies because we do not observe some of the pre-treatment variables for the 1996 election term. We do not have the 1992 election data at the individual candidate level so we cannot calculate all the council characteristics for 1992. Furthermore, in 1997 the accounting procedures in municipalities changed so we do not have comparable expenditure measures for 1993–1996.

Table 3. Pre-treatment covariate balance at municipality level.

	$T_{mt} > 0$			$T_{mt} < 0$			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	68	5 316	956	75	5 323	838	-7.19
Health care expenditures (€ per capita)	68	1 600	352	75	1 653	370	-53.29
Other expenditures (€ per capita)	68	3 716	795	75	3 670	663	46.10
Population	109	8 524	14 144	118	8 835	11 398	-310.9
Young inhabitants %	109	18.83	3.67	118	18.67	3.04	0.16
Old inhabitants %	109	18.05	4.61	118	18.02	4.61	0.03
Council size	109	27.75	9.32	118	27.88	10.05	-1.17
Municipal employees %	68	28.69	14.07	75	27.75	11.50	0.93
Municipal health care employees %	68	7.72	5.50	75	7.50	4.49	0.22
Municipal non health care employees %	68	20.97	12.11	75	20.25	10.69	0.72
Incumbents %	68	56.65	7.57	75	57.11	9.40	-3.76
Women %	68	34.02	9.63	75	34.08	8.36	-0.06
High professionals %	68	18.73	11.42	75	19.56	10.11	-0.83
University educated %	68	11.65	7.43	75	10.57	7.62	1.08
Unemployed %	68	2.81	3.21	75	3.98	4.48	-1.17*
Center Party seat share %	109	40.49	20.08	118	40.53	19.50	-0.03
Coalition Party seat share %	109	16.13	9.63	118	16.07	10.17	0.06
Social Democratic Party seat share %	109	19.97	10.92	118	21.30	10.73	-1.33
Green party seat share %	109	1.89	3.22	118	1.53	3.43	0.36
Left Alliance seat share %	109	9.49	8.83	118	8.90	8.76	0.59
Swedish Party seat share %	109	3.25	13.82	118	3.79	15.75	-0.54
True Finns seat share %	109	2.33	4.70	118	2.11	4.08	0.22
Christian Democrats seat share %	109	3.01	3.89	118	2.73	3.62	0.28
Other parties seat share %	109	3.45	6.77	118	3.05	6.36	0.39
ε = 0.4	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	404	5 334	828	406	5 327	818	6.67
Health care expenditures (€ per capita)	404	1 631	392	403	1 636	359	-5.27
Other expenditures (€ per capita)	404	3 703	679	403	3 691	654	11.70
Population	588	17 488	46 681	557	13 548	33 128	3 939
Young inhabitants %	588	18.67	3.29	557	18.63	3.26	0.04
Old inhabitants %	588	17.52	4.65	557	17.90	4.42	-0.38
Council size	588	31.91	11.81	557	30.55	10.80	1.35
Municipal employees %	404	28.38	13.49	403	27.69	12.99	0.70
Municipal health care employees %	404	7.43	5.06	403	7.09	4.81	0.35
Municipal non health care employees %	404	20.95	12.71	403	20.60	12.09	0.35
Incumbents %	404	58.12	8.54	403	57.20	9.06	0.92
Women %	404	33.69	9.02	403	33.12	8.45	0.57
High professionals %	404	23.07	12.84	403	21.79	11.90	1.28
University educated %	404	14.32	10.20	403	12.70	9.63	1.61
Unemployed %	404	3.81	3.79	403	3.58	4.03	0.23
Center Party seat share %	588	36.83	21.08	557	37.95	21.26	-1.11
Coalition Party seat share %	588	17.15	10.07	557	15.94	10.15	1.21
Social Democratic Party seat share %	588	21.70	11.83	557	21.55	11.56	0.15
Green party seat share %	588	2.40	3.94	557	1.92	3.52	0.48
Left Alliance seat share %	588	9.19	8.64	557	8.85	8.39	0.34
Swedish Party seat share %	588	4.54	16.16	557	5.70	18.47	-1.16
True Finns seat share %	588	1.84	3.92	557	1.63	3.77	0.20
Christian Democrats seat share %	588	3.04	3.65	557	3.08	3.61	-0.04
Other parties seat share %	588	3.31	6.28	557	3.38	6.59	-0.07

Notes: The statistical significance of the differences is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

Table 4 reports balance tests on council characteristics for the *current* election term.[19] We have a good reason to take a closer look at them, because municipal employees are more often female and of higher socioeconomic status than the candidates with other employment status (cf. table 1). As Panel A of Table 4 shows, the post-treatment council characteristics are well balanced. For example, the municipal employees that by chance won a seat from a candidate from another occupation are of no better or worse quality (see e.g. Ferreira and Gyourko 2014), as measured by their incumbency and education. The only exception is the councils' gender composition. This finding mirrors the strong positive correlation between gender and occupation status at the candidate level. The imbalance is not, however, a result of failed randomization, but rather an intrinsic feature of municipal employees: When a municipal employee is randomly allocated into a council, a female is more likely to get a seat in the council.

Our candidate level data are rich enough for us to dig deeper into the sources of the gender unbalance. In Panel B of Table 4, we report the balance tests based on gender. For these tests, we divide the municipal election observations into two groups, according to the seat share of females exceeds or falls short of its expected share due to randomness in the outcomes of the close elections. The procedure used to calculate this is the same as the one we used for the municipal employees. As the table reveals, the councils that have by chance more females than males also have more municipal employees, but there is no imbalance in other observed characteristics. In Panel C and D of Table 4, we divide municipal employees into two categories: those who work in the health care sector and those who work in other non-health care sectors. We use this division, because the health care sector is the largest individual expenditure category of the Finnish municipalities and because the high degree of correlation between municipal employment and gender is driven by the health care sector workers. This is intuitive, because nurse is a female dominated occupation. From Panel C and D of Table 4, it is evident that the gender imbalance is related to employees in the health care sector. We explore the importance of gender for our econometric findings below in greater detail.

[19] The post-treatment balance of parties' seat shares are by definition balanced, because our treatment is based on within party close contests (see Appendix C).

Table 4. Post-treatment council covariate balance.

ε = 0.4	Positive treatment			Negative treatment			
Panel A: All municipal employees	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Incumbents %	588	57.26	9.16	557	57.29	8.85	-0.04
Female %	588	34.72	8.76	557	33.18	8.40	1.54**
High professionals %	588	23.34	12.84	557	22.06	11.83	1.27
University educated %	588	14.57	10.72	557	13.47	10.07	1.11
Unemployed %	588	3.47	3.88	557	3.43	3.99	0.04
Panel B: Female	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Incumbents %	596	57.12	8.62	674	56.92	9.35	0.20
Municipal employees %	596	27.62	12.44	674	26.33	12.26	1.28*
High professionals %	596	21.71	12.15	674	22.46	12.17	-0.75
University educated %	596	13.44	10.27	674	13.55	10.20	-0.10
Unemployed %	596	3.63	4.06	674	3.34	3.92	0.29
Panel C: Municipal health care employees	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Incumbents %	305	57.58	8.83	319	58.13	8.88	-0.55
Women %	305	35.86	7.69	319	33.86	8.53	2.00**
High professionals %	305	25.47	13.47	319	24.11	12.47	1.36
University educated %	305	16.35	11.44	319	15.38	10.74	0.98
Unemployed %	305	3.16	3.43	319	3.22	3.88	-0.06
Panel D: Municipal non-health employees	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Incumbents %	522	57.25	9.09	496	57.48	8.95	-0.24
Women %	522	34.45	8.84	496	33.62	8.47	0.83
High professionals %	522	24.02	12.80	496	22.66	12.43	1.36
University educated %	522	14.67	10.79	496	14.03	10.59	0.64
Unemployed %	522	3.61	3.93	496	3.35	3.87	0.26

Notes: In Panel A, the treatment groups are based on all municipal employees. In Panel B, the groups are based on gender. In Panel C, the groups are based on health care sector employees. In Panel D, the groups are based on those municipal employees who do not work in the health care sector. The bandwidth in each case is 0.4. The statistical significance of the differences is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

4 Results

We start by analyzing the effect of the share of municipal employees in the council on the (log) per capita total expenditures of the local government, measured as the average over the four year council term. We then present disaggregated results for municipal health care and non-health care employee and the corresponding expenditure categories. After that, we investigate whether the effect comes through the largest party. We then look for evidence on rent-seeking. Finally, we present additional validity checks.

4.1 Treatment effect on aggregate spending

To have a point of comparison, we start by reporting both naïve OLS results with different sets of controls (Panel A of Table 5) and the IV results (Panel B of Table 5) and the reduced form IV estimations (Panel C of Table 5) using the narrowest possible bandwidth with $\varepsilon = 0$. The OLS estimations obviously do not correct for the potential endogeneity of the seat share of the municipal employees, while the latter two arguably does that very well. The problem with the narrowest bandwidth is the limited amount of variation in the instrument, which means that the regressions potentially suffer from a low power. This is reflected in weak first stage in columns (5), (6) and (7). The difference between the four columns of each panel is that they include successively more controls. Here, and in all subsequent regressions, we use lags (means over the *t*-1 election term) of the control variables to avoid possible issues with bad controls (i.e. alternative outcomes). Due to as-good-as random instrument, the only purpose of the control variables is to reduce the residual variance. This is reflected in smaller standard errors with richer controls as well as the powerful first stage in column (8). The latter is natural because controlling for the municipal employee vote share obviously reduces residual variance in the first stage immensely.

Table 5. Results for total expenditures: OLS and IV analysis with $\varepsilon = 0$.

Panel A: OLS	(1)	(2)	(3)	(4)
Municipal employees	0.0016***	0.0021***	0.0018***	-0.0003
	[0.0005]	[0.0004]	[0.0004]	[0.0007]
R^2	0.29	0.43	0.58	0.58
Panel B: IV, ε = 0	(5)	(6)	(7)	(8)
Municipal employees	0.0058	0.0046	0.0070	0.0048
	[0.0110]	[0.0103]	[0.0087]	[0.0042]
First stage F	2.01	1.98	2.44	35.23
Panel B: Reduced form of IV, ε = 0	(9)	(10)	(11)	(12)
Municipal employees	0.0024	0.0019	0.0031	0.0041
	[0.0047]	[0.0042]	[0.0036]	[0.0036]
R^2	0.29	0.42	0.57	0.58
N	1544	1544	1544	1544
Year dummies	Yes	Yes	Yes	Yes
Party controls	No	Yes	Yes	Yes
Municipality controls	No	No	Yes	Yes
Vote share	No	No	No	Yes

Notes: The unit of observation is a municipality *m* in election period *t*. The dependent variable in all the models is the logarithm of the mean of per capita total expenditures over the council term. Standard errors are clustered at the municipality level and reported in parentheses. Party controls include parties' lagged seat shares. Municipality controls are all lagged and include population, squared population and shares of young and old citizens. Vote share includes a second order polynomial of the municipal employees vote share. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

As the first three columns of Panel A show, the OLS estimations suggest a positive and statistically significant association between the political representation of public employees and total expenditures. This association vanishes completely once we include a second order polynomial of the vote share of municipal employees (see column 4). This is not unexpected, because the municipal employees' vote and seat shares are highly correlated. While insignificant, the point estimates from the IV (Panel B) and the reduced form of IV (Panel C) estimations are positive and typically larger than the OLS estimates. Importantly, both the IV results are robust to including municipal employee vote share indicating that unlike the OLS, the IV can estimate the effect separately from voter preferences.

To explore whether we can estimate the (apparently positive) effect of political representation of municipal employees on municipal expenditures more precisely, we use the wider bandwidth of $\varepsilon = 0.4$. The wider bandwidth allows us to bring in more variation from the close elections. These results are reported in Table 6, where Panel A reports our IV

estimates and Panel B our reduced form estimates. The estimations that rely on the wider bandwidths can be taken to be more reliable if they produce a point estimate that is similar in size to that produced by the narrowest bandwidth and if they estimate it with greater precision (smaller standard error).

Table 6. Results for total expenditures: IV analysis with $\varepsilon = 0.4$.

Panel A: IV, $\varepsilon = 0.4$	(1)	(2)	(3)	(4)
Municipal employees	0.0034*	0.0046***	0.0040***	0.0041***
	[0.0018]	[0.0017]	[0.0015]	[0.0016]
First stage F	56.79	59.91	59.65	288.92
Panel B: Reduced form of IV, $\varepsilon = 0.4$	(5)	(6)	(7)	(8)
Municipal employees	0.0032*	0.0043***	0.0037***	0.0036***
	[0.0017]	[0.0016]	[0.0014]	[0.0014]
R^2	0.29	0.42	0.57	0.58
N	1544	1544	1544	1544
Year dummies	Yes	Yes	Yes	Yes
Party controls	No	Yes	Yes	Yes
Municipality controls	No	No	Yes	Yes
Vote share	No	No	No	Yes

Notes: The unit of observation is a municipality m at election period t. The dependent variable in all the models is the logarithm of the mean of per capita total expenditures over the council term. Standard errors are clustered at the municipality level and reported in brackets. Party controls includes parties' lagged seat shares. Municipality controls include lagged population, squared population and shares of young and old citizens. First stage F statistic reported for the IV estimations is Kleinberg-Paap Wald F statistic. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

Starting from the IV estimates in Panel A of Table 6, we find across all specifications a statistically significant treatment effect of 0.003-0.004 on the municipal spending from having a larger share of municipal employees in the council. The reduced form results in Panel B echo the IV findings: They yield treatment effect estimates that are statistically significant and very similar to those obtained with IV, but somewhat smaller in magnitude. It is especially noteworthy that both estimators deliver point estimates that are very close to those we obtained when the narrowest possible bandwidth ($\varepsilon = 0.0$) was used (see the earlier Panel B in Table 5). The fact that the reduced form estimates are a little smaller in absolute value than the IV estimates suggests that the first stage coefficient of the instrument is close to, but somewhat smaller than, one (as it often is; see Appendix B). It is comforting to report that we cannot reject the null hypothesis that the 1st stage coefficient of the instrument is unity.

The point estimates of Table 6 suggest that increasing municipal employees' seat share by 1 percentage point increases per capita total expenditures annually by circa 0.3 % over

one election term. As one seat is on average 3 percentage points of the total number of seats, the overall average effect of an increase of one seat is about 1%. Because the average annual municipal spending is around 5600 Euros per capita, this effect translates into around 60 euros per capita. The effect is surprisingly large, given that there are non-negligible institutional restrictions on the political representation of the municipal employees and that we are identifying the effect at a potentially unimportant of margin of allocating the last seats to the council.

Do municipal employees increase public expenditures because they are more often female or because there is a municipal employee effect independent of gender?[20] To address this question, we directly control for the seat share of females, F_{mt}. We instrument this (potentially endogenous) share by the share of females who were randomly elected in the close contests. This instrument is calculated using the procedure that produced the instrument for the share of municipal employees. We hence treat F_{mt} symmetrically to M_{mt}, i.e., either instrument it or replace it in the reduced form directly with the instrument. When F_{mt} is included in the model, we get at the effect of electing a municipal employee while keeping gender composition constant. The effect then refers to either electing a male municipal employee instead of a male with another occupation or a female municipal employee instead of a female with another occupation. When included and properly instrumented, F_{mt} in turn captures the treatment effect of randomly electing a woman instead of a man into the council, keeping the share of municipal employees constant.

We have reproduced the estimations of Table 6, but with the seat share of females included (see Appendix B). Somewhat surprisingly, adding the seat share of females has only a minor impact on the treatment effect estimate of the municipal employees: With IV, we find a statistically significant treatment effect of 0.0032 – 0.0035; with the reduced form model the corresponding figures are 0.0030 – 0.0031. In contrast to Chattopadhyay and Duflo (2004) and Clots-Figueras (2011), who find that increased female participation matter for the type of public spending in India, we find no robust effects from (randomly) increased female political participation, especially when the full set of controls is included. An obvious

[20] This problem may also be present in other research settings that explore the effects of political representation of different interest groups or parties. RDD does not automatically solve this problem, as it is not always clear whether e.g. the party effects are related to party ideology or to different parties attracting different kinds on candidates in terms of gender, income, education or occupation; see e.g. Chattopadhyay and Duflo (2004) and Clots-Figueras (2011) for further discussion.

explanation for this weaker female effect is that women's position in Finland and India are quite different: They are well represented in the Finnish political decision making to start with. Indeed, Finland was first in Europe and third in the world to allow female suffrage in 1906.

We have explored the robustness of our main findings and their internal and external validity in a number of ways (see Appendix B): First, the choice of bandwidth $\varepsilon = 0.4$ for our main analysis is somewhat *ad hoc*. The point estimates of the municipal employee effect are stable across a wide range of bandwidths and statistically significant for the larger bandwidths (from $\varepsilon = 0.24$ onwards). Second, our main results are based on the entire sample of 1544 municipality-election period observations, even though the instrument can be different from zero only within the chosen bandwidths. This choice may lead to a selection bias if the municipalities implicitly chosen by the bandwidth choice are different from those that remain outside the bandwidths. We have therefore replicated the results of Table 6 using only those observations in which close elections take place. This amounts to omitting the observations for which the instrument variable is zero. The point estimates from these estimations are almost identical to those reported in Table 6, but standard errors are slightly larger. The estimates nonetheless are mostly statistically significant. Finally, we have explored the covariate balance in the close sample (as defined by the choice of bandwidth ε) and the rest of the municipalities. For example, for $\varepsilon = 0$ the covariates balance perfectly. On the other hand, for $\varepsilon = 0.4$, the close sample is different from the other municipalities, because much larger municipalities select into the close sample.[21] Because our point estimates are stable (i.e., robust to changing the bandwidth), it is unlikely that this selection compromises the external validity of our main finding.

4.2 Treatment effects by type of spending

Why are municipal expenditures linked to the seat share of municipal employees in the council? We shed light on this question by exploring whether the link is occupation specific. In columns (1) and (3) of Table 7, the outcome variable is municipal expenditures that are

[21] The reason for this is that we define the bandwidth within parties in vote shares. This means that even the bandwidth of 0.4 (4 votes out of 1000) is very small. For example, with a two vote distance to the threshold, the party list needs to be larger than 500 votes for the candidate to be within the bandwidth. Such small bandwidths happen more often larger municipalities, because in them, the total number of votes that a party lists may receive, are large enough to generate small vote shares.

not related to health care, whereas in columns (2) and (4) of the panel the outcome variable is health care expenditures. In all the specifications, we are interested in both the effects of the municipal health care and non-health care employees' representation. With both these occupation groups simultaneously in the model, the interpretation for both coefficients is the effect of increasing the particular seat share relative to any non-municipal employee occupation. All the specifications include year fixed effects as well as the party and municipality controls (i.e., the same set as the one in column 3 of Table 5). The method of estimation is IV in Panel A, and Panel B presents the corresponding reduced form of IV estimates.[22]

As can be seen from the table, the results suggest that health care employees increase health care expenditures, but non-health care employees have no effect on them. Similarly, health care employees do not affect non-health care expenditures, but municipal employees in other sectors than health increase these other municipal expenditures. Spending increases thus seem confined to the sectors that have, by chance, more representation through municipal employees in the municipal council. These results largely rule out the explanation that municipal employees increase spending because they generally prefer a larger public sector.

[22] The results for pre-treatment covariate balance tests and the first stage estimations of the IV are presented in Appendix D.

Table 7. Results according to occupation and spending category.

	Outcome: non health care expenditures	Outcome: health care expenditures
Panel A: IV, ε = 0.4	(1)	(2)
Municipal non health care employees	0.0045**	0.0016
	[0.0021]	[0.0036]
Municipal health care employees	0.0033	0.0081**
	[0.0033]	[0.0039]
First stage F	29.73	29.57
Joint test for health and non-health	0.32	0.47
Panel B: Reduced form of IV, ε = 0.4	(3)	(4)
Municipal non health care employees	0.0044**	0.0019
	[0.0021]	[0.0035]
Municipal health care employees	0.0025	0.0076**
	[0.0031]	[0.0036]
R^2	0.44	0.18
Joint test for health and non-health	0.07	0.09
N	1544	1534
Year dummies	Yes	Yes
Party and municipality controls	Yes	Yes

Notes: The unit of observation is a municipality m at election period t. The dependent variable in all the models is the logarithm of the mean of per capita total expenditures over the council term. Standard errors are clustered at the municipality level and reported in brackets. Party controls includes parties' lagged seat shares. Municipality controls include lagged population, squared population and shares of young and old citizens. First stage F statistic reported for the IV estimations is Kleinberg-Paap Wald F statistic. Moreover, we report p-values from testing the joint significance of the treatments. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

The results reported in Table 7 are robust to adding the seat share of females to the models (see Appendix C). They results for the non-health care expenditures are also robust to using other bandwidth choices. However, the effect of the seat share of municipal health care employees on health spending is less robust: The coefficient of this variable loses its statistical significance for bandwidths smaller than 0.36 and the point estimate varies across the bandwidths.

4.3 Treatment effect through the largest party

The councilors that we use to identify the municipal employee effect of interest are marginal, and thus, probably not the most influential members of their party. Moreover, we have already shown that the result is not driven by the gender of the elected municipal employees. How does the effect come about then?

We have explored a number of possibilities: First, we can largely rule out that the marginally elected municipal employee councilors would lead to them having a majority in the council or to their party becoming dominated by municipal employees: Such instances are present in the data only very rarely. Second, the municipal employee effect appears not to be larger in the municipalities where the marginally elected councilor was the only elected municipal employee from his/her party. This finding means that the effect is not due to proposal power (see e.g. Knight 2005). Indeed, instances where there would be only one municipal employee in the entire council are very rare in the data. Finally, the increase in the municipal employee representation apparently does not increase the probability that a political leader (chairman of the council board or chairman of the council) would be a municipal employee (not reported).

The remaining explanation seems to be general coalition formation in decision making. Direct analysis of this mechanism is impossible, because there is no explicit ruling coalition in the Finnish local councils. The coalitions are formed on a question-by-question basis. However, we can look at the heterogeneity of the spending effect by party, in particular, whether the effect is different within the largest party than within the second largest party. We report these results in Table 8, where again Panel A reports the IV estimates and Panel B the reduced from estimates. We find a significant effect within the largest party. In contrast, the estimates are smaller and insignificant for the second largest party. This result indicates that non-partisan interest groups, such as municipal employees, may be able to influence decision making within the party, and if this party is large, they may have an effect on the policy. This result is however not conclusive, because the Centre Party is most often the largest party in the Finnish municipalities, due to its considerable support in the smaller rural municipalities (which constitute the bulk of municipalities). Therefore, the effect captured in Table 8 may be a Centre Party phenomenon rather than a party size effect. These results are similar also when looking at the sectoral effects and adding the seat share of females to the models (see Appendix D).

Table 8. Heterogeneity in the total spending effect by party size

	Largest party	2nd largest party
Panel A: IV, ε = 0.4	(1)	(2)
Municipal employees	0.0048**	0.0022
	[0.0019]	[0.0034]
First stage F	78.78	43.57
Panel B: Reduced form of IV, ε = 0.4	(3)	(4)
Municipal employees	0.0049**	0.0020
	[0.0020]	[0.0032]
R^2	0.57	0.57
N	1544	1544
Year dummies	Yes	Yes
Party and municipality controls	Yes	Yes

Notes: The unit of observation is a municipality m at election period t. The dependent variable in all the models is the logarithm of the mean of per capita total expenditures over the council term. Standard errors are clustered at the municipality level and reported in brackets. Party controls includes parties' lagged seat shares. Municipality controls include lagged population, squared population and shares of young and old citizens. First stage F statistic reported for the IV estimations is Kleinberg-Paap Wald F statistic. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

4.4. Evidence on rent-seeking

We have so far established that i) increasing the fraction of municipal employees in the municipal council has a positive causal effect on municipal expenditure; that ii) health care (non-health care) municipal employees have a positive impact on health care (non-health care) expenditures; and that iii) the mechanism works most likely through the largest party.

It is not easy to determine whether increased (sector-specific) spending is due to rent-seeking or pro-social behavior due to some kind of altruistic preferences or use of better information (i.e., whether it is efficient or inefficient). To investigate this issue, we have studied whether the elected municipal employees receive larger salary increases and/or face a smaller unemployment risk, and whether they enjoy from a (larger) incumbency advantage in subsequent elections than the other candidates. We have also analyzed whether the political representation of municipal employees shows up in house prices. We explore house prices, because, e.g., Gyourko and Tracy (1991) argue that high levels of government rent extraction might be capitalized in them.

When we use candidate level data (either lottery outcomes that make the election status truly random or RDD), we find no systematic evidence that that the municipal employees would get higher salaries, be more likely to be employed subsequently, or that

they would be more likely to get re-elected or get more votes (in the next election at t+1) than the other candidates due to getting elected at time t (see the Appendix E for details of these results).[23] Using municipal level data on real estate transactions, we find no effect on house prices.

These null results mean that we cannot rule out pro-social (altruistic) behavior or the use of better information, nor provide systematic evidence for rent-seeking.

5. Conclusions

We have produced three novel findings in this paper. First, the political representation of municipal employees has a positive causal effect on overall local public spending. This is relevant information for rational voters, because the marginally elected candidates seem to be able to influence policies and it is surprisingly likely that their voters would also be pivotal (see Lyytikäinen and Tukiainen 2013). Second, the effect is sector specific: Having more health care sector employees in the council increases health care spending and having more non-health sector employees increases non-health care spending, but there are no cross-sector effects. Since the spending effects are in this particular sense sector specific, we can rule out that general preferences for a larger public sector are driving the result. Third, the effect appears to be related to the interest group influencing the political agenda within the largest parties.

We have shown that in a municipality with a median sized council, the increase in local public spending is about 1 percent on average over the four-year council term. The effect is surprisingly large because we are probably looking at a relatively unimportant margin (i.e., the last elected candidates within a party) and because there are restrictions on the political positions that the municipal employees can take.

It is important to interpret these findings in the context to which they apply: We have shown that the effect of having relatively more municipal employees in the council on public spending is not due to the increased female political participation. This finding is in contrast to some seminal prior work (e.g., Chattopadhyay and Duflo (2004) and Clots-Figueras 2011),

[23] See Hyytinen et al. (2014) for more details of these lotteries and their use in the study of incumbency advantage. Kotakorpi et al. (2015) study the returns to office in general in Finland using close elections RDD. The main difference between these studies and ours is that we study whether returns to office are different to municipal employees than to other candidates. Moreover, we analyze only the local level, whereas Kotakorpi et al. (2015) look at both local and national level.

but a natural explanation for it is that women have already for long participated in the Finnish politics, both at the national and local level. Indeed, in our data, the share of female councilors is relatively high to start with, at about 40%. Moreover, our findings refer to a country that has a large public sector and that has traditionally given the local municipalities a major role in the allocation of public resources and production of public services. What our results say is that the Finnish municipal councilors employed by the public sector want - *by revealed preference* - to increase public expenditures in a country that in 2014 had the highest public sector ratio to GDP and whose local governments were among the most indebted among all OECD countries. One can therefore raise the question why, in this particular institutional context, increasing the public local expenditures further would be beneficial? How do the beneficial effects come about, if the effect is driven by the employment sector of the elected councilors and if it only comes through the largest party? These are important questions that call for further research on the mechanisms at work.

Our results also imply that various policies that limit the opportunities of public employees to participate in politics, whether they are quotas or requirements to withdraw from their public employment, are likely to be effective in steering policy choices, at least at the local level. Since public employees are a large interest group, their opportunities to gain political power and willingness to use it ought not to be overlooked. For example, fairness and equality considerations at the local level call for continuous monitoring of how the opportunities of public employees to participate in politics ought to be regulated.

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Appendix A: Describing the instrument

This is the appendix to section 3.1. We present here the distribution of the instrument T_{mt} for various bandwidths. The tables show how the variation in the treatment increases as the bandwidth increases but the shape of the distribution remains symmetric, thus implying valid randomization.

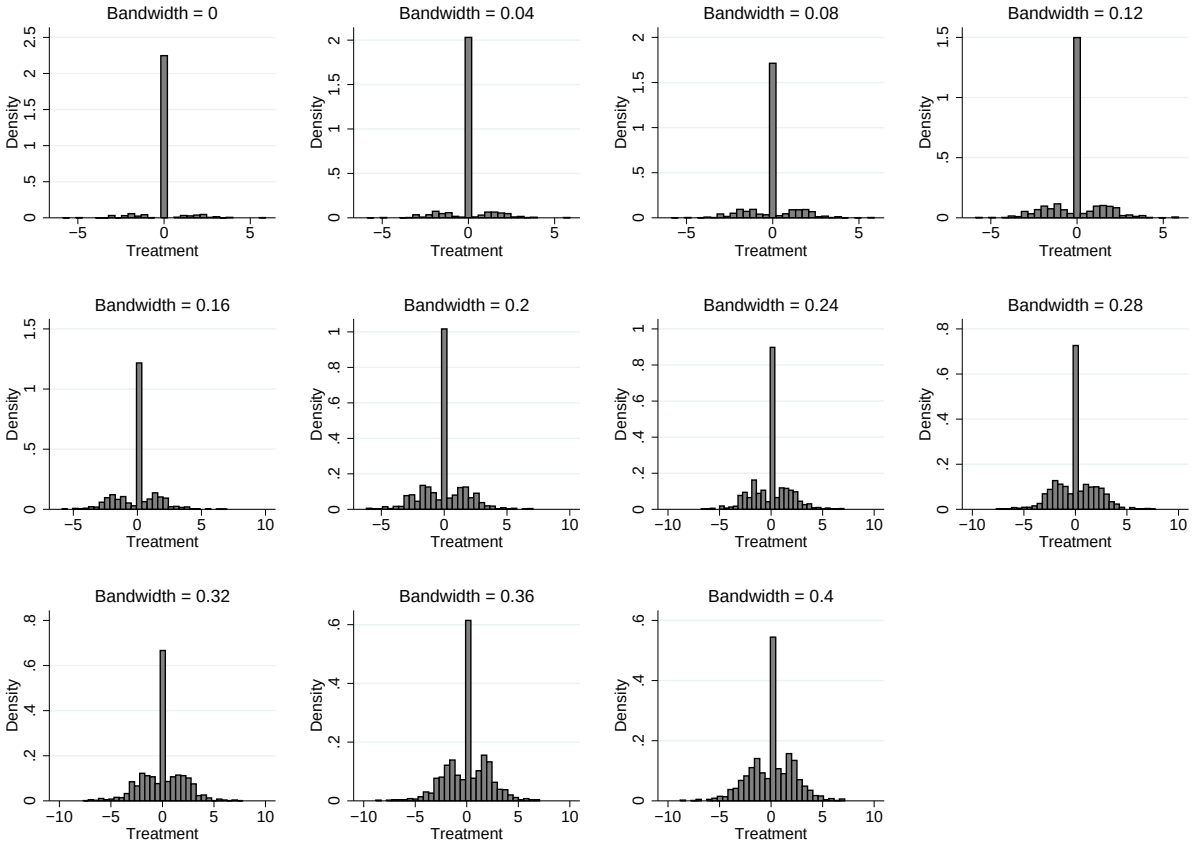


Figure A1. Distribution of T_{mt} .

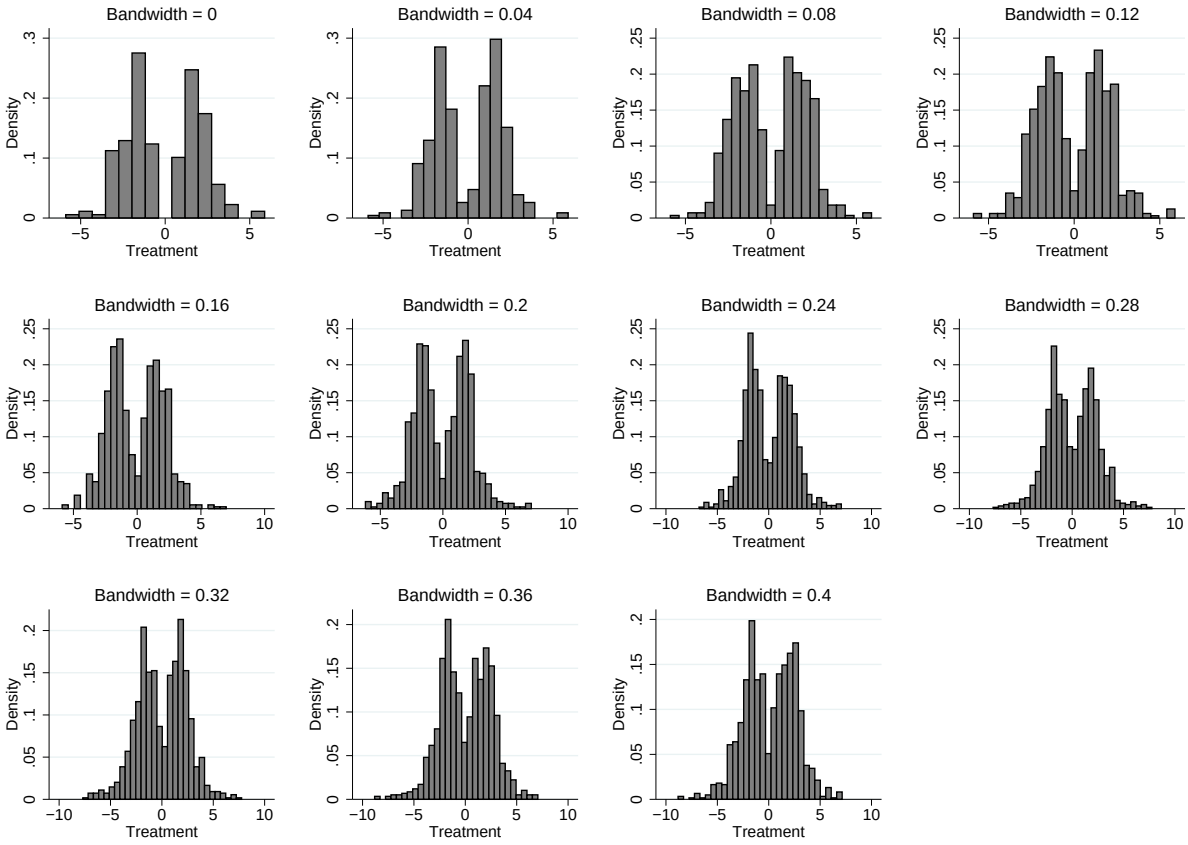


Figure A2. Distribution of T_{mt} (excluding zeros).

Appendix B: Robustness and validity of the total spending effect

This is the appendix to section 4.1. We present here the first stage of our IV across a range of bandwidths as well a similar first stage for the female instrument. We also report the robustness of the municipal employee results in Table 6 over a range of bandwidths as well as for accounting the correlation between the municipal employee status and gender by instrumenting also for the female seat share in the council with our instrument constructed for close contests between female and male. We also test for validity of the female instrument.

One can check whether our aggregation procedure produces a correct municipality level instrument by running the first stage of IV and checking whether the coefficient of T_m (ϕ) is indeed one. This regression can also be used to test for the power of our treatment for various bandwidth sizes. In Figure B1, we present estimates of ϕ for various bandwidths (ε) while first controlling only for the year fixed effect and then for all the municipality controls. The coefficient is below unity when the treatment is calculated using only the lotteries in the data, though we cannot reject the Null hypothesis that it is unity. However, when using larger bandwidths the point estimate is close to unity as it should be. This anomaly in the lottery sample may simply be a small sample statistical fluke. In particular, the first stage for the treatments when the interest group of interest is non-health care employees or female does not contain this anomaly (see Figures C1 and B3).

The first stage is fairly precisely estimated for bandwidths larger than 0.04 (4 votes out of ten thousand). The control variables do not increase precision substantially. The lottery sample (bandwidth 0) produces noisy results, but precision increases as we increase the bandwidth. For a bandwidth of 0.04 the *F*-test statistics for the instrument is around 10 and for the larger bandwidths it is substantially larger than 10 (e.g. for the 0.4 bandwidth with the controls, the *F*-test statistic is 60). From the perspective of statistical power, we should rely on the results that use bandwidths of about 0.08 or larger.

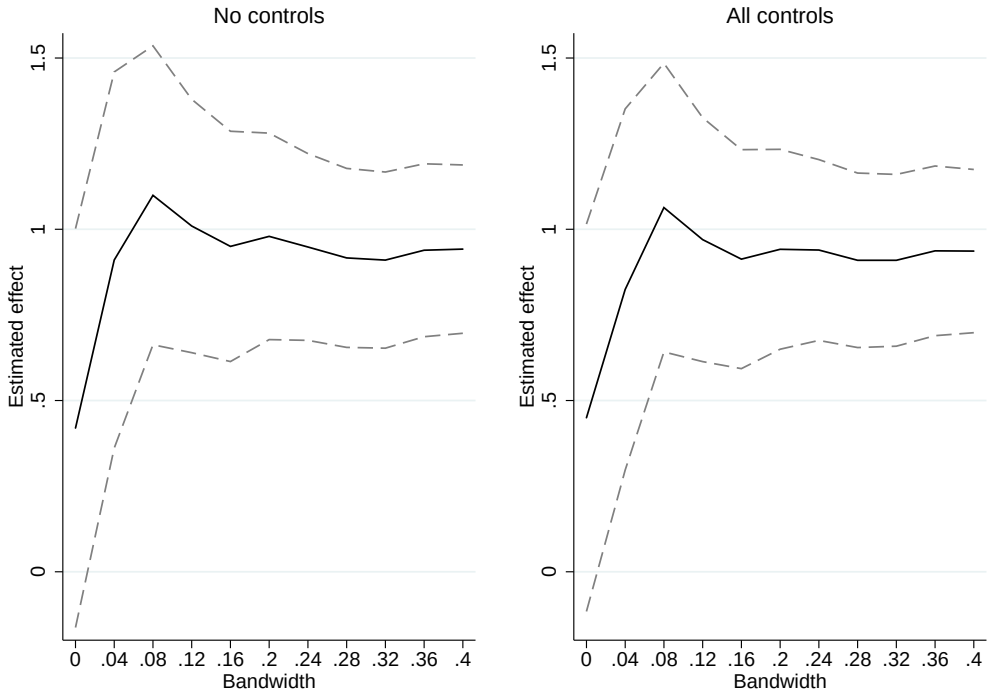


Figure B1. Explaining actual seat share with the treatment variable for municipal employees.

Notes: The figure reports point estimates and 95 % confidence intervals for the first stage coefficient ϕ. Both graphs include includes time dummies (election term). The "All controls" graph includes lagged values of seat shares of parties, municipal population, squared population and the shares of young and old citizens. Standard errors are clustered at the municipality level.

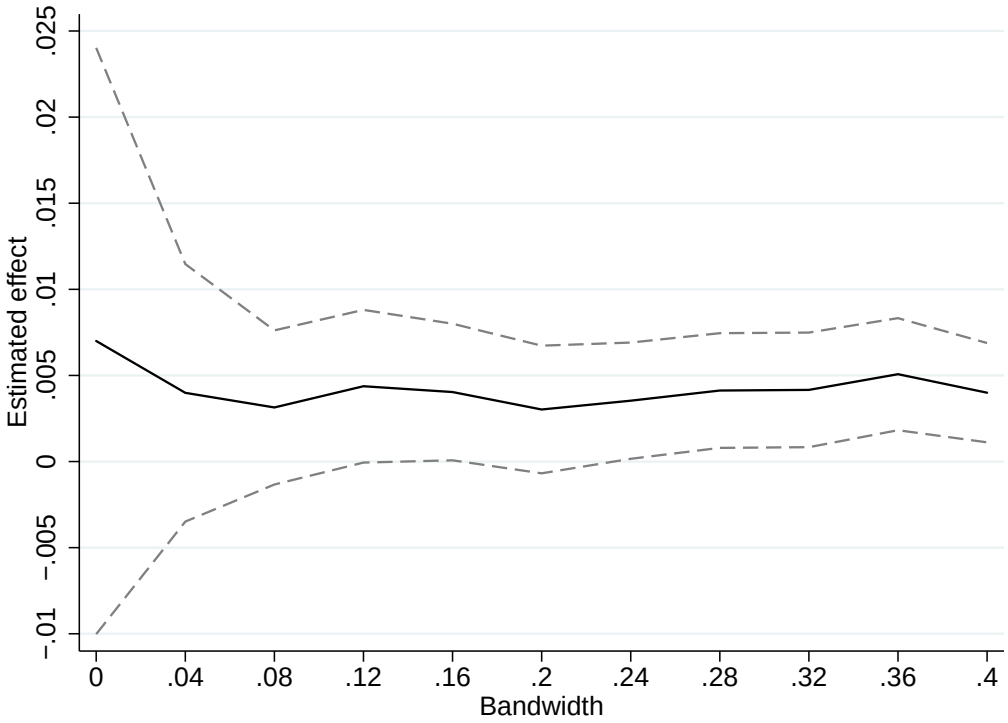


Figure B2. Robustness of the results in Table 6 for different bandwidths.

Notes: The solid line represents the point estimates and the dotted lines the 95% confidence interval. The specification includes year dummies as well as control for parties' seat shares, population, squared population and shares of young and old citizens (all controls are lagged). Standard errors are clustered at the municipality level.

Next, we present the post-treatment covariate balance tests for all municipal employees in Table F1. Table F2 shows covariate balance for the close elections and sample and the non-close elections sample. Finally, Table F3 shows the results from estimating our model using only the close elections sample.

Table B1. Post-treatment council covariate balance for all municipal employees.

	Positive treatment			Negative treatment			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Incumbents %	109	55.77	8.82	118	56.31	9.96	-0.54
Women %	109	33.55	8.59	118	32.42	8.96	1.14
High professionals %	109	20.29	10.63	118	20.58	10.43	-0.29
University educated %	109	12.07	8.13	118	11.42	8.53	0.65
Unemployed %	109	3.71	4.48	118	3.87	4.36	-0.16
Center Party %	109	42.55	19.84	118	41.07	19.31	1.48
Coalition Party %	109	17.10	9.59	118	17.75	10.84	-0.64
Social Democratic Party %	109	18.06	9.62	118	19.71	10.83	-1.65
Green party %	109	1.59	2.99	118	1.88	3.42	-0.29
Left Alliance %	109	8.62	8.73	118	8.17	8.48	0.45
Swedish Party %	109	3.08	13.22	118	3.80	15.97	-0.72
True Finns %	109	2.04	4.90	118	1.77	3.99	0.28
Christian Democrats %	109	3.06	3.84	118	2.95	4.15	0.11
Other parties %	109	3.89	6.96	118	2.91	6.17	0.98
ε = 0.4							
Incumbents %	588	57.26	9.16	557	57.29	8.85	-0.04
Women %	588	34.72	8.76	557	33.18	8.40	1.54**
High professionals %	588	23.34	12.84	557	22.06	11.83	1.27
University educated %	588	14.57	10.72	557	13.47	10.07	1.11
Unemployed %	588	3.47	3.88	557	3.43	3.99	0.04
Center Party %	588	38.26	20.88	557	38.48	21.00	-0.22
Coalition Party %	588	17.80	10.57	557	16.77	10.64	1.03
Social Democratic Party %	588	20.33	11.27	557	20.62	11.23	-0.29
Green party %	588	2.41	4.05	557	2.02	3.47	0.39
Left Alliance %	588	8.37	8.12	557	8.19	8.04	0.18
Swedish Party %	588	4.40	15.85	557	5.65	18.36	-1.25
True Finns %	588	1.86	4.16	557	1.69	3.76	0.17
Christian Democrats %	588	3.07	3.86	557	3.28	3.91	-0.21
Other parties %	588	3.49	6.74	557	3.30	6.30	0.19

Table B2. Pre-treatment covariate balance between the close sample and other municipalities.

	Close elections			No close elections			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	143	5 320	893	968	5 346	843	-26.38
Health care expenditures (€ per capita)	143	1 628	362	965	1 638	375	-10.23
Other expenditures (€ per capita)	143	3 692	727	965	3 708	690	-16.17
Population	227	8 686	12 762	1317	13 184	37 979	-4 498
Young inhabitants %	227	18.75	3.35	1317	18.45	3.34	0.29
Old inhabitants %	227	18.04	4.60	1317	18.35	4.63	-0.32
Council size	227	27.82	9.68	1317	29.18	11.09	-1.36
Municipal employees %	143	28.20	12.75	965	27.53	13.40	0.66
Municipal health care employees %	143	7.60	4.98	965	6.95	5.00	0.65
Municipal non health care employees %	143	20.59	11.36	965	20.58	12.63	0.01
Incumbents %	143	56.89	8.55	965	57.22	9.07	-0.32
Women %	143	34.05	8.95	965	32.82	8.93	1.23
High professionals %	143	19.17	10.72	965	20.80	12.08	-1.63
University educated %	143	11.08	7.52	965	12.25	9.69	-1.17
Unemployed %	143	3.43	3.96	965	3.89	4.15	-0.46
Center Party seat share %	227	40.51	19.73	1317	39.21	21.40	1.31
Coalition Party seat share %	227	16.10	9.89	1317	15.61	10.46	0.49
Social Democratic Party seat share %	227	20.66	10.82	1317	20.75	11.93	-0.09
Green party seat share %	227	1.70	3.33	1317	1.87	3.50	-0.16
Left Alliance seat share %	227	9.18	8.78	1317	8.43	8.31	0.75
Swedish Party seat share %	227	3.53	14.83	1317	5.69	18.55	-2.16
True Finns seat share %	227	2.21	4.38	1317	1.67	3.83	0.54
Christian Democrats seat share %	227	2.87	3.75	1317	2.91	3.72	-0.04
Other parties seat share %	227	3.24	6.55	1317	3.88	9.09	-0.64
ε = 0.4	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	810	5 330	823	301	5 376	919	-45.77
Health care expenditures (€ per capita)	807	1 634	376	301	1 646	369	-11.77
Other expenditures (€ per capita)	807	3 697	666	301	3 729	768	-32.65
Population	1145	15 571	40 687	399	3 773	3 153	11799***
Young inhabitants %	1145	18.65	3.27	399	18.07	3.51	0.58*
Old inhabitants %	1145	17.70	4.54	399	20.04	4.42	-2.34***
Council size	1145	31.25	11.35	399	22.45	5.75	8.80***
Municipal employees %	807	28.03	13.24	301	26.50	13.48	1.53*
Municipal health care employees %	807	7.26	4.94	301	6.44	5.11	0.82*
Municipal non health care employees %	807	20.78	12.40	301	20.06	12.67	0.72
Incumbents %	807	57.66	8.81	301	55.87	9.40	1.80***
Women %	807	33.41	8.74	301	31.82	9.38	1.59**
High professionals %	807	22.43	12.39	301	15.64	8.84	6.79***
University educated %	807	13.51	9.95	301	8.31	6.61	5.20***
Unemployed %	807	3.69	3.91	301	4.18	4.63	-0.49
Center Party seat share %	1145	37.38	21.16	399	45.20	20.08	7.82***
Coalition Party seat share %	1145	16.56	10.13	399	13.15	10.68	3.41***
Social Democratic Party seat share %	1145	21.63	11.70	399	18.16	11.60	3.47***
Green party seat share %	1145	2.16	3.75	399	0.92	2.32	1.25***
Left Alliance seat share %	1145	9.02	8.51	399	7.15	7.86	1.87**
Swedish Party seat share %	1145	5.10	17.32	399	6.14	20.03	-1.03
True Finns seat share %	1145	1.74	3.85	399	1.79	4.13	-0.05
Christian Democrats seat share %	1145	3.06	3.63	399	2.44	3.96	0.62*
Other parties seat share %	1145	3.34	6.43	399	5.05	13.29	-1.70*

Notes: The statistical significance is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

Table B3. The effect of municipal employment council share on total expenditures using only the close elections sample.

Panel A: IV, ε = 0.4	(1)	(2)	(3)	(4)
Municipal employees	0.0035*	0.0040***	0.0040***	0.0040***
	[0.0019]	[0.0015]	[0.0015]	[0.0015]
First stage F	54.25	57.76	58.76	59.76
N	1145	1145	1145	1145
Panel B: Reduced form of IV, ε = 0.4	(5)	(6)	(7)	(8)
Municipal employees	0.0032*	0.0042***	0.0037***	0.0035**
	[0.0017]	[0.0016]	[0.0014]	[0.0014]
R^2	0.3	0.42	0.58	0.59
N	1145	1145	1145	1145
Year dummies	Yes	Yes	Yes	Yes
Party controls	No	Yes	Yes	Yes
Municipality controls	No	No	Yes	Yes
Vote share	No	No	No	Yes

Notes: The unit of observation is a municipality m at election period t. The dependent variable in all the models is the logarithm of the mean of per capita total expenditures over the council term. Standard errors are clustered at the municipality level and reported in brackets. Party controls include parties' lagged seat shares. Municipality controls include lagged population, squared population and shares of young and old citizens. Vote share control is a second-order polynomial of municipal employees' vote share. First stage F statistic reported for the IV estimations is Kleinbergen-Paap Wald F statistic. Moreover, we report p-values from testing the joint significance of the treatments. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

Table B4. Results for total expenditures: IV analysis for both municipal employee and female instruments.

Panel A: IV, ε = 0.4	(1)	(2)	(3)	(4)
Municipal employees	0.0014	0.0032*	0.0034**	0.0035**
	[0.0022]	[0.0019]	[0.0016]	[0.0016]
Females	0.0041**	0.0032**	0.0013	0.016
	[0.0019]	[0.0016]	[0.0013]	[0.012]
First stage F	24.21	25.91	26.85	147.82
Panel B: Reduced form, ε = 0.4	(5)	(6)	(7)	(8)
Municipal employees	0.0017	0.0030*	0.0037**	0.0030**
	[0.0018]	[0.0016]	[0.0014]	[0.0014]
Females	0.0044**	0.0038**	0.0018	0.017
	[0.0017]	[0.0015]	[0.0013]	[0.013]
R^2	0.29	0.43	0.57	0.59
N	1544	1544	1544	1544
Year dummies	Yes	Yes	Yes	Yes
Party controls	No	Yes	Yes	Yes
Municipality controls	No	No	Yes	Yes
Vote share	No	No	No	Yes

Notes: The unit of observation is a municipality m at election period t. The dependent variable in all the models is the logarithm of the mean of per capita total expenditures over the council term. Standard errors are clustered at the municipality level and reported in brackets. Party controls includes parties' lagged seat shares. Municipality controls include lagged population, squared population and shares of young and old citizens. First stage F statistic reported for the IV estimations is Kleinberg-Paap Wald F statistic. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

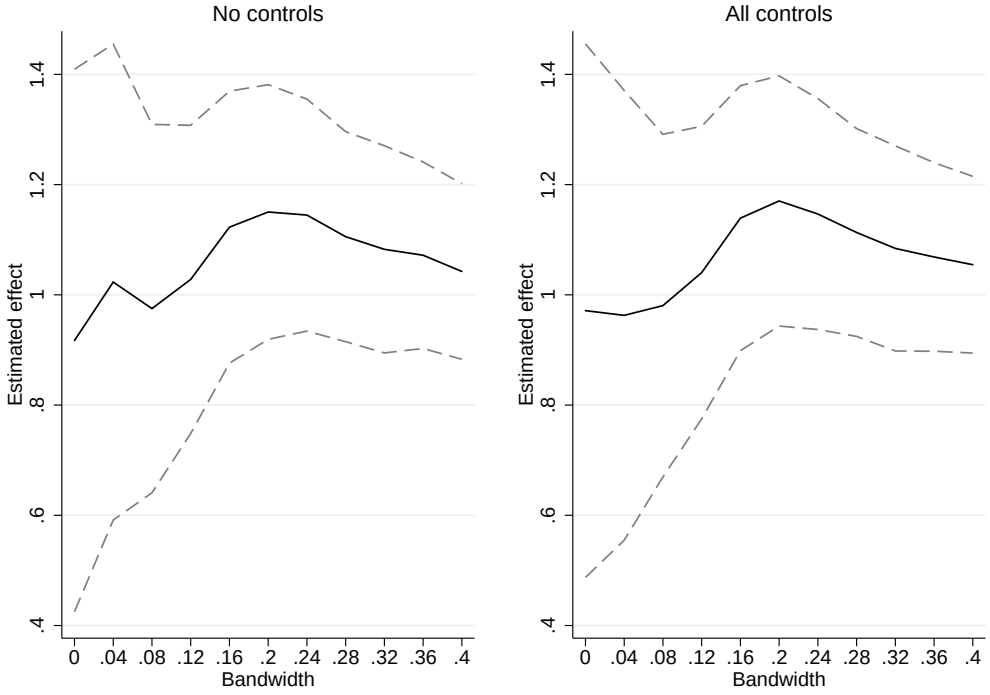


Figure B.3. Explaining actual seat share with the treatment variable for female.

Notes: The solid line represents the point estimates and the dotted lines the 95% confidence interval. The left hand graph includes only the year dummies as controls and the right hand graph includes all the controls used in Table 4 column (3). Standard errors are clustered at the municipality level.

Table B5. Pre-treatment covariate balance at municipality level for female.

	Positive treatment			Negative treatment			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	95	5 346	969	96	5 184	736	161.37
Health care expenditures (€ per capita)	95	1 610	300	96	1 590	370	20.76
Other expenditures (€ per capita)	95	3 736	790	96	3 595	622	140.81
Population	139	7 518	9 108	135	8 870	16 924	-1351
Young inhabitants %	139	18.38	3.10	135	18.52	3.35	-0.14
Old inhabitants %	139	18.79	4.67	135	18.18	4.49	0.60
Council size	139	27.17	9.38	135	27.81	9.46	-0.64
Municipal employees %	95	28.33	12.82	96	27.51	11.75	0.82
Municipal health care employees %	95	7.50	5.53	96	7.56	4.83	-0.06
Municipal non health care employees %	95	20.83	11.92	96	19.95	10.36	0.88
Incumbents %	95	57.02	8.60	96	57.58	8.64	-0.55
Women %	95	33.64	9.49	96	34.08	8.06	-0.44
High professionals %	95	17.86	9.69	96	21.24	10.69	-3.38**
University educated %	95	10.34	7.42	96	12.16	8.83	-1.82
Unemployed %	95	3.57	4.52	96	3.96	4.07	-0.40
Center Party seat share %	139	41.41	20.27	135	39.61	19.03	1.80
Coalition Party seat share %	139	15.38	10.26	135	16.66	10.59	-1.28
Social Democratic Party seat share %	139	20.99	11.64	135	21.71	10.54	-0.72
Green party seat share %	139	1.38	2.78	135	1.45	3.02	-0.07
Left Alliance seat share %	139	8.13	8.12	135	8.46	8.38	-0.34
Swedish Party seat share %	139	3.95	15.34	135	4.28	15.50	-0.33
True Finns seat share %	139	2.05	4.88	135	2.23	4.20	-0.18
Christian Democrats seat share %	139	2.39	3.66	135	2.98	4.19	-0.59
Other parties seat share %	139	4.32	10.65	135	2.61	6.03	1.71
ε = 0.4	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	428	5 382	863	485	5 272	778	110.00
Health care expenditures (€ per capita)	427	1 653	361	483	1 623	366	29.95
Other expenditures (€ per capita)	427	3 729	678	483	3 649	635	79.90
Population	596	14 154	33 116	674	14 708	43 222	-553.71
Young inhabitants %	596	18.53	3.20	674	18.83	3.39	-0.30
Old inhabitants %	596	17.98	4.59	674	17.72	4.48	0.26
Council size	596	30.62	11.30	674	30.36	11.09	0.26
Municipal employees %	427	28.85	13.73	483	27.34	12.79	1.51*
Municipal health care employees %	427	7.14	5.08	483	7.30	4.83	-0.16
Municipal non health care employees %	427	21.71	12.80	483	20.04	11.90	1.66
Incumbents %	427	57.53	8.85	483	57.46	8.87	0.07
Women %	427	33.14	8.69	483	33.24	8.65	-0.10
High professionals %	427	21.23	11.72	483	22.41	12.48	-1.17
University educated %	427	12.77	9.47	483	13.18	10.07	-0.41
Unemployed %	427	3.78	4.19	483	3.81	3.95	-0.03
Center Party seat share %	596	38.22	21.51	674	38.22	21.44	0.00
Coalition Party seat share %	596	16.13	10.47	674	16.19	10.31	-0.06
Social Democratic Party seat share %	596	21.03	11.61	674	21.30	11.98	-0.27
Green party seat share %	596	2.03	3.50	674	2.04	3.76	0.00
Left Alliance seat share %	596	9.18	8.52	674	8.59	8.43	0.59
Swedish Party seat share %	596	4.98	16.97	674	5.91	19.18	-0.93
True Finns seat share %	596	1.78	3.91	674	1.62	3.86	0.15
Christian Democrats seat share %	596	2.89	3.68	674	3.01	3.71	-0.12
Other parties seat share %	596	3.78	7.48	674	3.13	6.61	0.65

Notes: The statistical significance is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

Table B6. Post-treatment covariate balance at municipality level for female.

	Positive treatment			Negative treatment			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Incumbents %	139	56.46	8.19	135	56.09	8.91	0.37
Municipal employees %	139	27.97	11.31	135	25.22	12.48	2.75*
High professionals %	139	18.41	10.71	135	20.45	10.44	-2.04
University educated %	139	10.83	8.28	135	12.31	9.51	-1.48
Unemployed %	139	3.66	4.30	135	3.72	4.74	-0.06
Center Party %	139	43.04	20.30	135	40.71	19.06	2.33
Coalition Party %	139	15.81	10.98	135	17.12	11.28	-1.32
Social Democratic Party %	139	19.40	10.75	135	20.16	10.72	-0.76
Green party %	139	1.51	2.93	135	1.44	3.09	0.07
Left Alliance %	139	7.16	7.54	135	7.87	8.32	-0.71
Swedish Party %	139	3.86	15.11	135	4.25	15.44	-0.39
True Finns %	139	2.12	5.27	135	1.85	4.36	0.27
Christian Democrats %	139	2.47	3.52	135	3.48	4.68	-1.01*
Other parties %	139	4.64	11.02	135	3.13	5.96	1.51
ε = 0.4							
Incumbents %	596	57.12	8.62	674	56.92	9.35	0.20
Municipal employees %	596	27.62	12.44	674	26.33	12.26	1.28*
High professionals %	596	21.71	12.15	674	22.46	12.17	-0.75
University educated %	596	13.44	10.27	674	13.55	10.20	-0.10
Unemployed %	596	3.63	4.06	674	3.34	3.92	0.29
Center Party %	596	39.20	21.28	674	39.41	21.65	-0.21
Coalition Party %	596	16.65	11.00	674	16.82	10.72	-0.17
Social Democratic Party %	596	19.96	11.27	674	19.86	11.40	0.10
Green party %	596	2.08	3.49	674	2.13	3.86	-0.05
Left Alliance %	596	8.45	8.09	674	7.84	8.03	0.61
Swedish Party %	596	4.95	16.87	674	5.81	19.04	-0.86
True Finns %	596	1.80	3.95	674	1.74	4.31	0.06
Christian Democrats %	596	2.97	3.85	674	3.16	4.05	-0.19
Other parties %	596	3.96	8.08	674	3.25	6.70	0.71

Notes: The statistical significance is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

Appendix C: Validity and robustness of the sectoral effects

This is the appendix to Section 4.2. We present here the first stages of our sectoral IV across a range of bandwidths. We also report the robustness of the results in Table 7 over a range of bandwidths. We also show robustness to accounting the correlation between the municipal employee status and gender by instrumenting also for the female seat share in the council. We also test for validity of the sector specific instruments.

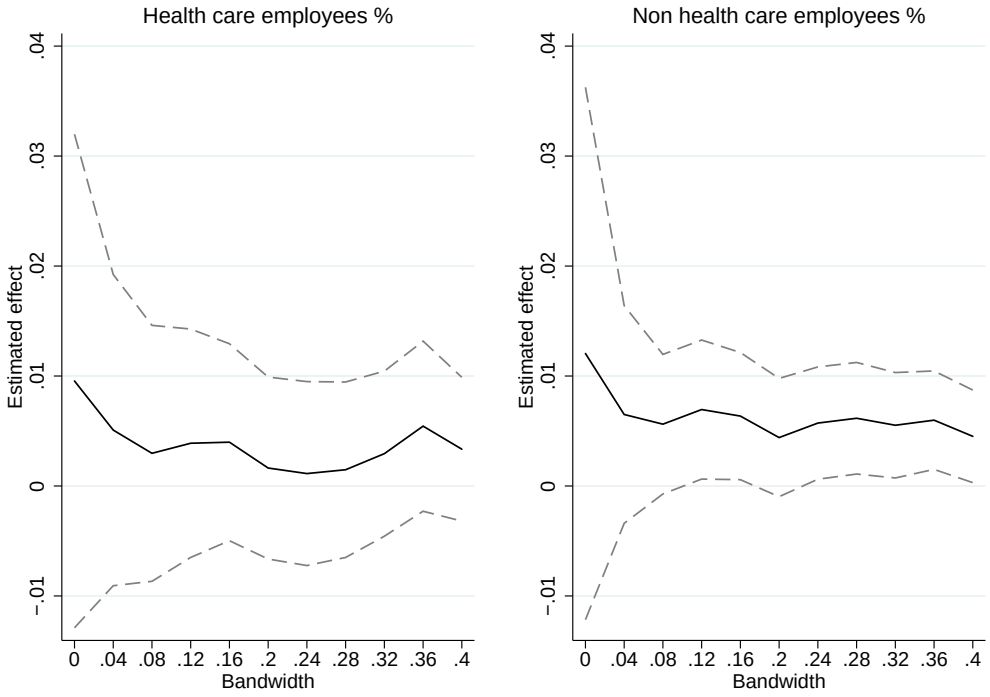


Figure C1. Robustness of the non-health outcome results in Table 7 for different bandwidths.

Notes: The solid line represents the point estimates and the dotted lines the 95% confidence interval. The specification includes year dummies as well as control for parties' seat shares, population, squared population and shares of young and old citizens (all controls are lagged). Standard errors are clustered at the municipality level.

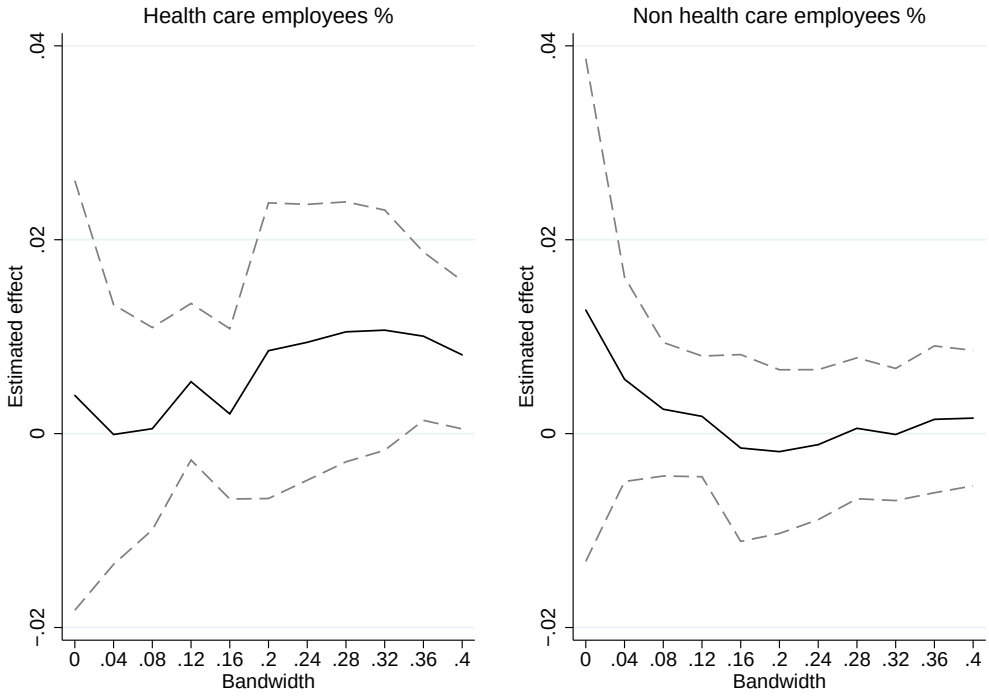


Figure C2. Robustness of the health outcome results in Table 7 for different bandwidths.

Notes: The solid line represents the point estimates and the dotted lines the 95% confidence interval. The specification includes year dummies as well as control for parties' seat shares, population, squared population and shares of young and old citizens (all controls are lagged). Standard errors are clustered at the municipality level.

Table C1. Results for sectoral expenditures: IV analysis with $\varepsilon = 0.4$ for both sectoral municipal employee and female instruments.

	Outcome: non health care expenditures	Outcome: health care expenditures
Panel A: IV, $\varepsilon = 0.4$	(1)	(2)
Municipal non health care employees	0.0050**	0.004
	[0.0023]	[0.0036]
Municipal health care employees	-0.0013	0.0021
	[0.0028]	[0.0033]
Female	0.0018	0.002
	[0.0016]	[0.0028]
First stage F	3.54	3.51
Panel B: Reduced form of IV, $\varepsilon = 0.4$	(3)	(4)
Municipal non health care employees	0.0037*	0.0012
	[0.0021]	[0.0035]
Municipal health care employees	0.0005	0.0056*
	[0.0032]	[0.0034]
Female	0.0030*	0.003
	[0.0017]	[0.0031]
R^2	0.44	0.18
N	1544	1534
Year dummies	Yes	Yes
Party and municipality controls	Yes	Yes

Notes: The unit of observation is a municipality *m* at election period *t*. The dependent variable in all the models is the logarithm of the mean of per capita total expenditures over the council term. Standard errors are clustered at the municipality level and reported in brackets. Party controls includes parties' lagged seat shares. Municipality controls include lagged population, squared population and shares of young and old citizens. First stage F statistic reported for the IV estimations is Kleinbergen-Paap Wald F statistic. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

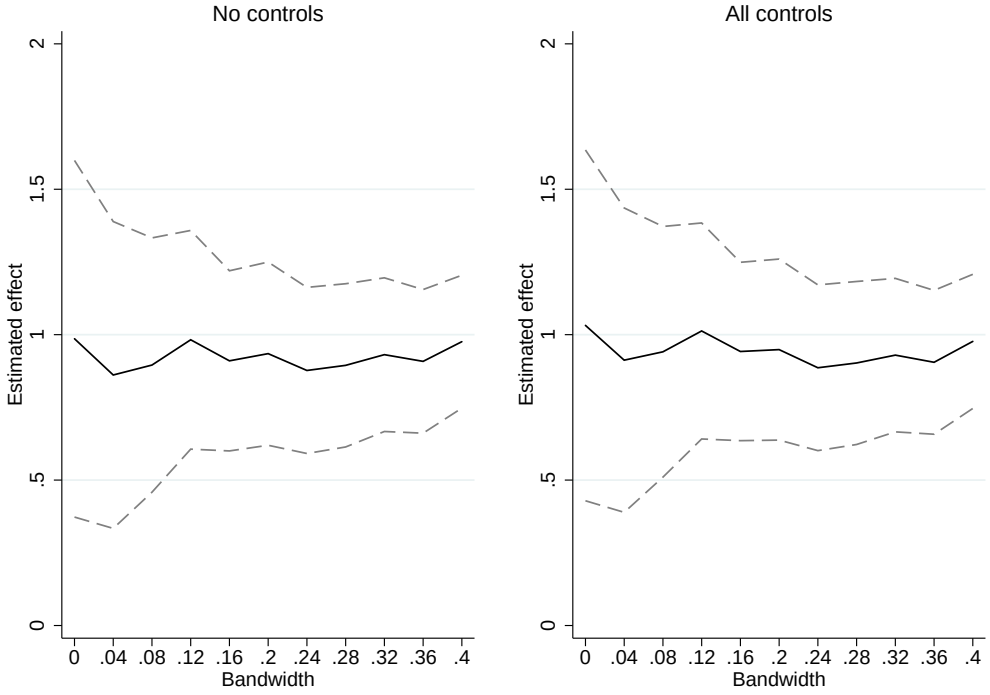


Figure C3. Explaining actual seat share with the treatment variable for municipal health sector employees.

Notes: The solid line represents the point estimates and the dotted lines the 95% confidence interval. The left hand graph includes only the year dummies as controls and the right hand graph includes all the controls used in Table 5 column (3). Standard errors are clustered at the municipality level.

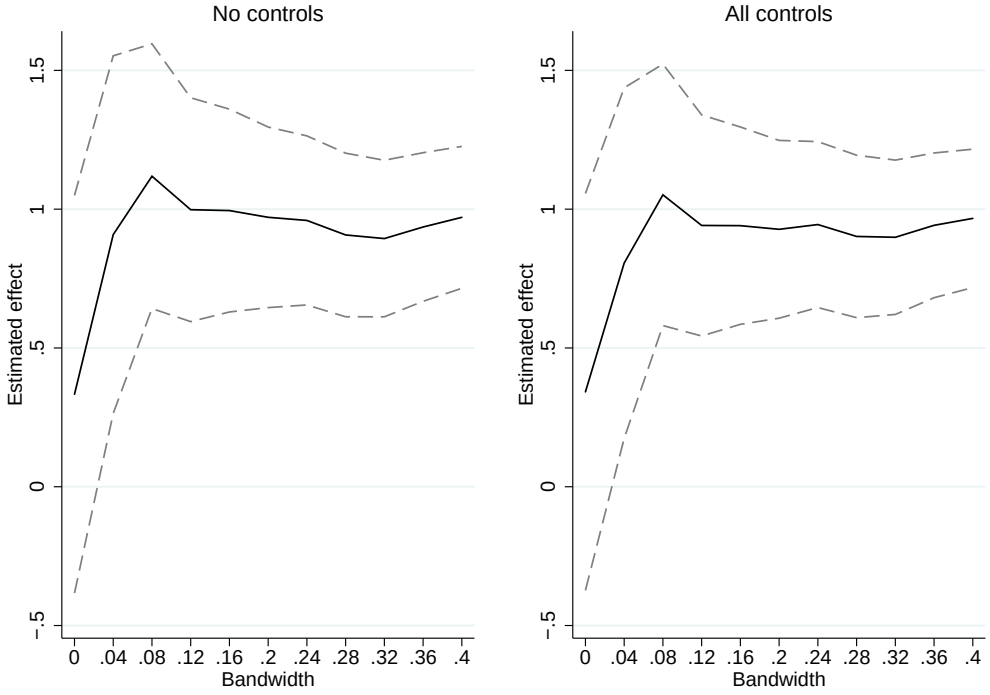


Figure C4. Explaining actual seat share with the treatment variable for municipal non-health sector employees.

Notes: The solid line represents the point estimates and the dotted lines the 95% confidence interval. The left hand graph includes only the year dummies as controls and the right hand graph includes all the controls used in Table 4 column (3). Standard errors are clustered at the municipality level.

Table C2. Pre-treatment covariate balance at municipality level for non-health care employees.

	Positive treatment			Negative treatment			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	45	5 427	1 029	59	5 407	943	20.11
Health care expenditures (€ per capita)	45	1 596	326	59	1 681	410	-84.45
Other expenditures (€ per capita)	45	3 831	888	59	3 727	745	104.56
Population	79	6 699	6 043	93	8 731	11 688	-2 032
Young inhabitants %	79	18.63	3.46	93	18.47	3.14	0.16
Old inhabitants %	79	18.27	4.31	93	18.22	4.77	0.04
Council size	79	27.18	7.98	93	27.80	10.20	-0.62
Municipal employees %	45	29.25	13.98	59	26.03	10.94	3.22
Municipal health care employees %	45	8.03	5.06	59	6.65	4.21	1.39
Municipal non health care employees %	45	21.22	12.47	59	19.38	10.34	1.84
Incumbents %	45	57.24	7.68	59	57.18	8.72	0.06
Women %	45	34.84	10.12	59	33.87	8.68	0.98
High professionals %	45	19.77	10.45	59	18.76	10.42	1.01
University educated %	45	10.92	6.95	59	10.37	7.22	0.55
Unemployed %	45	2.75	3.27	59	4.10	4.78	-1.35
Center Party seat share %	79	39.21	17.60	93	42.17	19.53	-2.96
Coalition Party seat share %	79	16.44	9.68	93	15.12	9.78	1.32
Social Democratic Party seat share %	79	21.55	10.70	93	21.11	10.50	0.44
Green party seat share %	79	1.69	3.13	93	1.75	3.76	-0.06
Left Alliance seat share %	79	9.55	8.64	93	9.20	9.01	0.35
Swedish Party seat share %	79	2.70	13.65	93	2.84	12.62	-0.14
True Finns seat share %	79	2.44	5.04	93	2.13	4.15	0.31
Christian Democrats seat share %	79	3.21	4.05	93	2.61	3.36	0.61
Other parties seat share %	79	3.21	6.17	93	3.08	6.60	0.14
ε = 0.4	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	334	5 330	810	359	5 363	808	-32.82
Health care expenditures (€ per capita)	333	1 626	384	357	1 633	364	-7.09
Other expenditures (€ per capita)	333	3 708	685	357	3 729	655	-20.95
Population	522	18 381	48 476	496	15 341	36 231	3 041
Young inhabitants %	522	18.77	3.22	496	18.67	3.31	0.10
Old inhabitants %	522	17.21	4.54	496	17.76	4.52	-0.56
Council size	522	32.71	11.78	496	31.30	11.41	1.41
Municipal employees %	333	28.82	13.23	357	27.81	13.62	1.01
Municipal health care employees %	333	7.34	4.72	357	7.03	4.88	0.31
Municipal non health care employees %	333	21.48	12.60	357	20.78	12.28	0.70
Incumbents %	333	57.90	8.40	357	57.99	8.97	-0.09
Women %	333	33.76	9.18	357	33.13	8.48	0.63
High professionals %	333	24.00	12.80	357	22.71	12.71	1.29
University educated %	333	14.43	10.43	357	13.77	10.20	0.66
Unemployed %	333	3.79	3.93	357	3.57	3.98	0.22
Center Party seat share %	522	36.03	21.10	496	37.59	21.45	-1.56
Coalition Party seat share %	522	17.45	9.94	496	15.93	10.32	1.52
Social Democratic Party seat share %	522	22.46	12.12	496	21.18	11.38	1.29
Green party seat share %	522	2.52	4.00	496	2.09	3.66	0.43
Left Alliance seat share %	522	9.39	8.74	496	8.90	8.30	0.49
Swedish Party seat share %	522	3.98	14.97	496	5.85	18.69	-1.88
True Finns seat share %	522	1.97	4.19	496	1.66	3.64	0.31
Christian Democrats seat share %	522	3.04	3.56	496	3.20	3.59	-0.16
Other parties seat share %	522	3.16	6.00	496	3.60	6.92	-0.44

Notes: The statistical significance is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

Table C3. Post-treatment council covariate balance for non-health care sector municipal employees.

	Positive treatment			Negative treatment			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Incumbents %	79	55.45	8.99	93	57.33	9.55	-1.88
Women %	79	34.30	8.72	93	32.79	9.32	1.51
High professionals %	79	20.18	9.05	93	20.16	10.53	0.02
University educated %	79	11.00	7.40	93	11.33	8.79	-0.33
Unemployed %	79	4.07	4.81	93	3.96	4.60	0.11
Center Party %	79	41.55	16.97	93	42.41	18.79	-0.86
Coalition Party %	79	17.33	9.44	93	16.83	10.48	0.50
Social Democratic Party %	79	19.54	9.34	93	19.78	10.34	-0.24
Green party %	79	1.49	2.69	93	2.07	3.77	-0.57
Left Alliance %	79	8.70	9.02	93	8.71	8.90	0.00
Swedish Party %	79	2.47	12.90	93	2.80	12.68	-0.33
True Finns %	79	2.03	5.36	93	1.77	4.15	0.26
Christian Democrats %	79	3.07	3.88	93	2.53	3.47	0.53
Other parties %	79	3.82	7.33	93	3.10	6.33	0.72
ε = 0.4							
Incumbents %	522	57.25	9.09	496	57.48	8.95	-0.24
Women %	522	34.45	8.84	496	33.62	8.47	0.83
High professionals %	522	24.02	12.80	496	22.66	12.43	1.36
University educated %	522	14.67	10.79	496	14.03	10.59	0.64
Unemployed %	522	3.61	3.93	496	3.35	3.87	0.26
Center Party %	522	37.50	20.92	496	38.29	21.23	-0.79
Coalition Party %	522	18.15	10.54	496	16.78	10.73	1.37
Social Democratic Party %	522	21.02	11.46	496	20.27	11.06	0.75
Green party %	522	2.53	4.04	496	2.22	3.72	0.31
Left Alliance %	522	8.56	8.35	496	8.23	7.97	0.32
Swedish Party %	522	3.84	14.57	496	5.78	18.56	-1.94
True Finns %	522	1.87	4.24	496	1.75	3.78	0.12
Christian Democrats %	522	3.08	3.79	496	3.30	3.81	-0.23
Other parties %	522	3.46	6.69	496	3.37	6.31	0.09

Notes: The statistical significance is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

Table C4. Pre-treatment covariate balance at municipality level for health care employees.

	Positive treatment			Negative treatment			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	35	5 225	835	27	5 220	607	5.14
Health care expenditures (€ per capita)	35	1 588	388	27	1 581	229	6.82
Other expenditures (€ per capita)	35	3 637	598	27	3 639	480	-1.67
Population	44	12 334	21 380	38	9 540	10 939	2 794
Young inhabitants %	44	19.35	4.01	38	19.02	2.46	0.34
Old inhabitants %	44	17.26	5.09	38	17.44	3.97	-0.18
Council size	44	29.32	11.44	38	28.63	9.77	0.69
Municipal employees %	35	29.20	14.30	27	32.80	12.87	-3.61
Municipal health care employees %	35	7.71	6.34	27	9.85	4.99	-2.14
Municipal non health care employees %	35	21.49	11.42	27	22.95	11.25	-1.47
Incumbents %	35	57.73	7.66	27	59.43	10.11	-1.70
Women %	35	32.53	10.22	27	34.47	9.14	-1.94
High professionals %	35	19.40	13.30	27	23.10	10.31	-3.70
University educated %	35	12.65	7.94	27	12.04	8.27	0.61
Unemployed %	35	3.27	3.35	27	3.89	3.49	-0.63
Center Party seat share %	44	42.96	23.28	38	37.11	18.55	5.85
Coalition Party seat share %	44	15.98	9.50	38	18.68	10.19	-2.70
Social Democratic Party seat share %	44	17.09	10.74	38	21.31	11.41	-4.22
Green party seat share %	44	2.08	3.25	38	1.00	2.09	1.08*
Left Alliance seat share %	44	10.48	9.69	38	9.51	9.00	0.97
Swedish Party seat share %	44	3.26	12.02	38	4.88	19.74	-1.62
True Finns seat share %	44	1.55	3.19	38	1.62	3.33	-0.07
Christian Democrats seat share %	44	2.65	3.53	38	3.04	4.00	-0.40
Other parties seat share %	44	3.95	7.64	38	2.84	5.27	1.11
ε = 0.4	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Total expenditures (€ per capita)	222	5 314	790	227	5 234	777	79.21
Health care expenditures (€ per capita)	222	1 642	381	226	1 588	348	54.06
Other expenditures (€ per capita)	222	3 668	579	226	3 648	675	19.76
Population	305	23 734	60 686	319	18 758	43 304	4 976
Young inhabitants %	305	18.57	3.17	319	18.94	3.26	-0.37
Old inhabitants %	305	17.13	4.75	319	16.96	4.33	0.17
Council size	305	34.48	12.77	319	33.10	11.80	1.38
Municipal employees %	222	30.60	14.60	226	28.77	12.32	1.83
Municipal health care employees %	222	8.16	5.30	226	8.00	4.68	0.15
Municipal non health care employees %	222	22.44	13.45	226	20.77	11.95	1.67
Incumbents %	222	59.18	8.72	226	57.74	8.68	1.44
Women %	222	34.02	8.59	226	34.48	8.64	-0.46
High professionals %	222	24.96	13.68	226	24.94	12.69	0.02
University educated %	222	15.74	10.61	226	15.10	10.92	0.64
Unemployed %	222	3.57	3.47	226	3.43	3.77	0.14
Center Party seat share %	305	34.51	21.18	319	35.14	20.90	-0.63
Coalition Party seat share %	305	17.21	9.88	319	17.75	10.09	-0.54
Social Democratic Party seat share %	305	22.95	11.65	319	22.69	11.79	0.26
Green party seat share %	305	2.99	4.44	319	2.44	4.03	0.56
Left Alliance seat share %	305	9.37	8.41	319	9.31	8.45	0.06
Swedish Party seat share %	305	4.85	16.61	319	4.29	16.53	0.56
True Finns seat share %	305	1.44	2.95	319	1.67	3.89	-0.23
Christian Democrats seat share %	305	3.24	3.56	319	3.22	3.40	0.02
Other parties seat share %	305	3.44	6.27	319	3.50	6.62	-0.06

Notes: The statistical significance is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

Table C5. Post-treatment council covariate balance for health care sector employees.

	Positive treatment			Negative treatment			
ε = 0 (lotteries)	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Incumbents %	44	56.60	9.03	38	53.67	10.48	2.93
Women %	44	33.57	8.39	38	32.21	7.95	1.35
High professionals %	44	21.41	12.75	38	22.06	9.83	-0.65
University educated %	44	13.79	9.08	38	11.69	7.98	2.10
Unemployed %	44	2.54	3.24	38	3.24	3.48	-0.70
Center Party %	44	44.41	23.40	38	38.26	19.33	6.16
Coalition Party %	44	17.06	10.27	38	19.74	11.02	-2.68
Social Democratic Party %	44	15.12	9.48	38	18.79	11.43	-3.68
Green party %	44	1.85	3.49	38	1.37	2.12	0.48
Left Alliance %	44	9.51	8.96	38	8.34	8.58	1.16
Swedish Party %	44	3.21	11.82	38	4.94	20.19	-1.74
True Finns %	44	1.62	3.08	38	1.59	3.02	0.03
Christian Democrats %	44	2.98	3.81	38	3.89	5.11	-0.92
Other parties %	44	4.26	6.69	38	3.07	6.66	1.18
ε = 0.4							
Incumbents %	305	57.58	8.83	319	58.13	8.88	-0.55
Women %	305	35.86	7.69	319	33.86	8.53	2.00**
High professionals %	305	25.47	13.47	319	24.11	12.47	1.36
University educated %	305	16.35	11.44	319	15.38	10.74	0.98
Unemployed %	305	3.16	3.43	319	3.22	3.88	-0.06
Center Party %	305	35.96	21.03	319	36.06	20.81	-0.10
Coalition Party %	305	17.80	10.35	319	18.40	10.73	-0.60
Social Democratic Party %	305	21.52	11.29	319	21.18	11.47	0.35
Green party %	305	2.98	4.66	319	2.54	3.85	0.44
Left Alliance %	305	8.71	7.98	319	8.61	8.10	0.10
Swedish Party %	305	4.74	16.33	319	4.16	16.12	0.58
True Finns %	305	1.75	3.54	319	1.88	3.79	-0.13
Christian Democrats %	305	3.32	3.79	319	3.49	3.79	-0.17
Other parties %	305	3.22	6.27	319	3.69	7.02	-0.47

Notes: The statistical significance is tested using a *t*-test adjusted for clustering at the municipality level. ***, ** and * denote statistical significance at 1 %, 5 % and 10 % level, respectively.

Appendix D: Robustness of the party size heterogeneity in the effect

This is the appendix to section 4.3. We analyze here whether also the sectoral results are stronger for the largest party and whether the by party for the total expenditures hold when instrumenting also the female share.

Table D1. Results for sectoral expenditures by party size.

	Outcome: health care expenditures		Outcome: non health care expenditures	
	Largest party	2nd largest party	Largest party	2nd largest party
Panel A: IV, ε = 0.4	(1)	(2)	(1)	(2)
Health care employees	0.0133**	-0.0413	0.0008	0.3327
	[0.0066]	[0.5556]	[0.0042]	[1.6703]
Non health care employees	0.0039	0.0136	0.0051**	0.0172
	[0.0048]	[0.0490]	[0.0024]	[0.1400]
First stage F	41.81	0.02	41.81	0.02
Panel B: Reduced form, ε = 0.4	(3)	(4)	(3)	(4)
Health care employees	0.0104**	-0.0040	-0.0007	0.0039
	[0.0050]	[0.0054]	[0.0035]	[0.0052]
Non health care employees	0.0054	0.0017	0.0057**	0.0012
	[0.0056]	[0.0040]	[0.0028]	[0.0049]
R^2	0.18	0.18	0.43	0.43
N	1534	1534	1534	1534
Year dummies	Yes	Yes	Yes	Yes
Party and municipality controls	Yes	Yes	Yes	Yes

Notes: The unit of observation is a municipality m at election period t. The dependent variable is either the logarithm of the mean of per capita other than health care expenditures or health care expenditures over the council term. Standard errors are clustered at the municipality level and reported in brackets. Party controls includes parties' lagged seat shares. Municipality controls include lagged population, squared population and shares of young and old citizens. First stage F statistic reported for the IV estimations is Kleinbergen-Paap Wald F statistic. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

Table D2. Results for sectoral expenditures: IV analysis for both municipal employee groups and female instruments.

	Largest party	2nd largest party
Panel A: IV, ε = 0.4	(1)	(2)
Municipal employees	0.0033	0.0030
	[0.0021]	[0.0036]
Females	0.0035*	-0.0025
	[0.0018]	[0.0030]
First stage F	38.33	17.68
Panel B: Reduced form, ε = 0.4	(3)	(4)
Municipal employees	0.0037*	0.0026
	[0.0020]	[0.0032]
Females	0.0034**	-0.0017
	[0.0016]	[0.0025]
R^2	0.57	0.57
N	1544	1544
Year dummies	Yes	Yes
Party and municipality controls	Yes	Yes

Notes: The unit of observation is a municipality m at election period t. The dependent variable in all the models is the logarithm of the mean of per capita total expenditures over the council term. Standard errors are clustered at the municipality level and reported in brackets. Party controls includes parties' lagged seat shares. Municipality controls include lagged population, squared population and shares of young and old citizens. First stage F statistic reported for the IV estimations is Kleinbergen-Paap Wald F statistic. ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

Appendix E: Rent-seeking results

This is the appendix to section 4.4. We report the rent-seeking estimations using candidate level data in Table E1 and the house-price regressions using municipal level data in Table E2. Last, we probe the robustness of the results in Table E1 to different bandwidths.

Table E1. Returns to office for elected municipal employees and other candidates.

	Panel A: Log(Change in income from t to t+1)			
	(1)	(2)	(3)	(4)
Elected	0.1468	-0.0399	-0.1696	-0.0856
	[0.2183]	[0.2118]	[0.1222]	[0.1199]
N	114	114	347	347
R^2	0.00	0.20	0.01	0.15
	Panel B: Unemployed t+1			
	(5)	(6)	(7)	(8)
Elected	0.0104	0.0040	0.0033	-0.0008
	[0.0214]	[0.0221]	[0.0122]	[0.0123]
N	207	207	588	588
R^2	0.00	0.04	0.00	0.11
	Panel C: Elected t+1			
	(9)	(10)	(11)	(12)
Elected	0.0407	0.0396	0.0013	0.0039
	[0.0506]	[0.0516]	[0.0283]	[0.0285]
N	330	330	990	990
R^2	0.00	0.06	0.00	0.04
	Panel D: Vote share t+1			
	(13)	(14)	(15)	(16)
Elected	0.1113	0.0265	-0.0538	-0.0531
	[0.1348]	[0.1328]	[0.0882]	[0.0847]
N	202	202	598	598
R^2	0.00	0.18	0.00	0.23
Sample	Municipal employees		Other candidates	
Indivual characteristics	No	Yes	No	Yes

Notes: Unit of observation is individual candidate at election period t. Individual characteristics include gender, age, incumbency status, unemployment status, student dummy, entrepreneur dummy, high professional dummy, party affiliation and vote share t-1. In panel B, we include only the candidates that are employed at time t to make the other candidates group comparable to municipal employees group. In panel C, candidates who do not re-run have elected t+1 status of zero. In panel D, those who do not re-run are excluded. Standard errors are clustered at the municipality level and reported in parentheses.

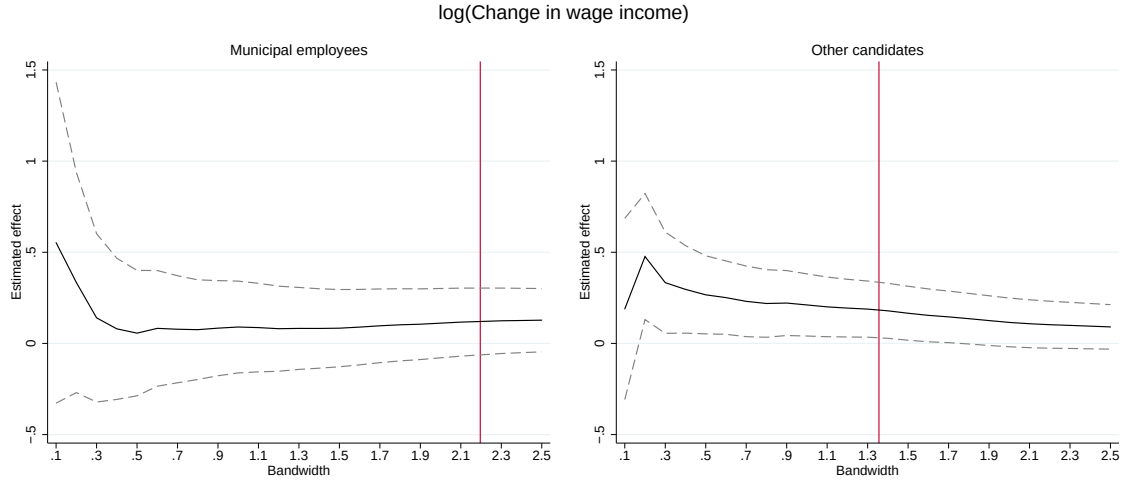
We then turn to our analysis of municipal house prices. We exclude 309 municipality-election period observations from the sample because these small municipalities do not have many housing market transactions.

Table E2. Results for house prices

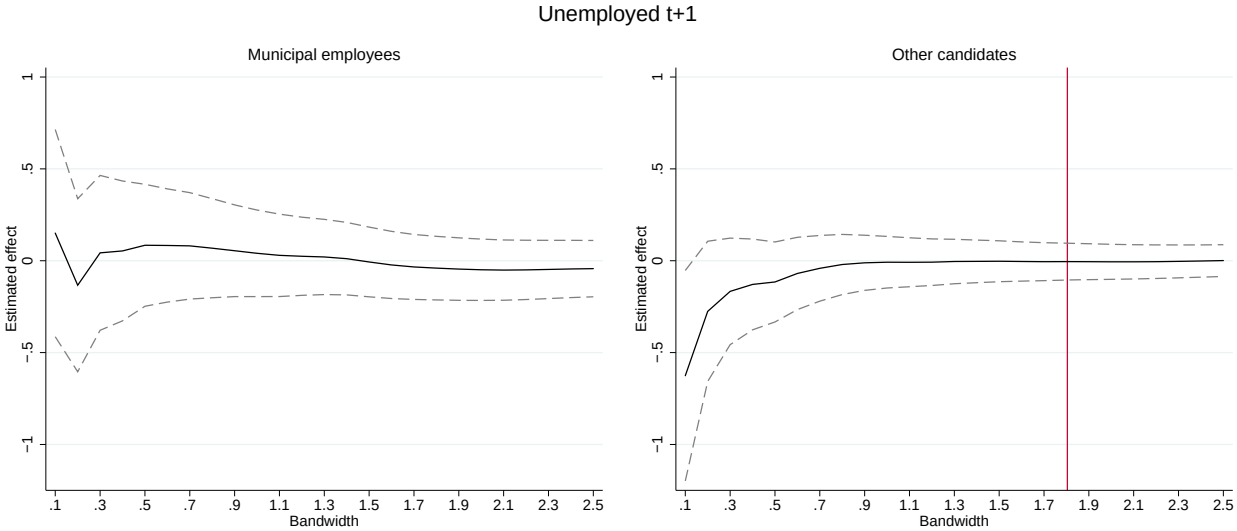
Outcome: log(house price per m^2)	
ATE, ε = 0.4	(1)
Municipal employees	0.0000
	[0.0021]
Female	-0.0002
	[0.0019]
R^2	0.77
N	1235

Notes: The unit of observation is a municipality *m* at election period *t*. The dependent variable is the logarithm of the mean of per square meter house prices over the council term. Standard errors are clustered at the municipality level and reported in parentheses. Controls include year dummies, parties' lagged seat shares, municipality population, squared population and shares of young and old citizens (all lagged). ***, ** and * denote 1, 5 and 10 % statistical significance levels respectively.

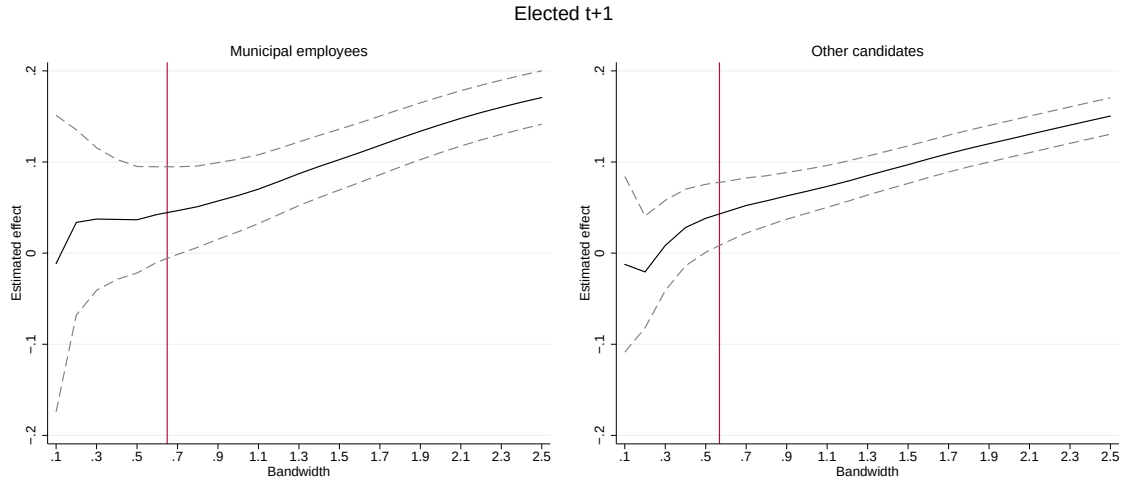
Panel A: RDD effect of getting elected at t on earnings at t+1 for a range of bandwidths.



Panel B: RDD effect of getting elected at t on unemployment at t+1 for a range of bandwidths.



Panel C: RDD effect of getting elected at t on elected at t+1 for a range of bandwidths.



Panel D: RDD effect of getting elected at t on vote share at t+1 for a range of bandwidths.

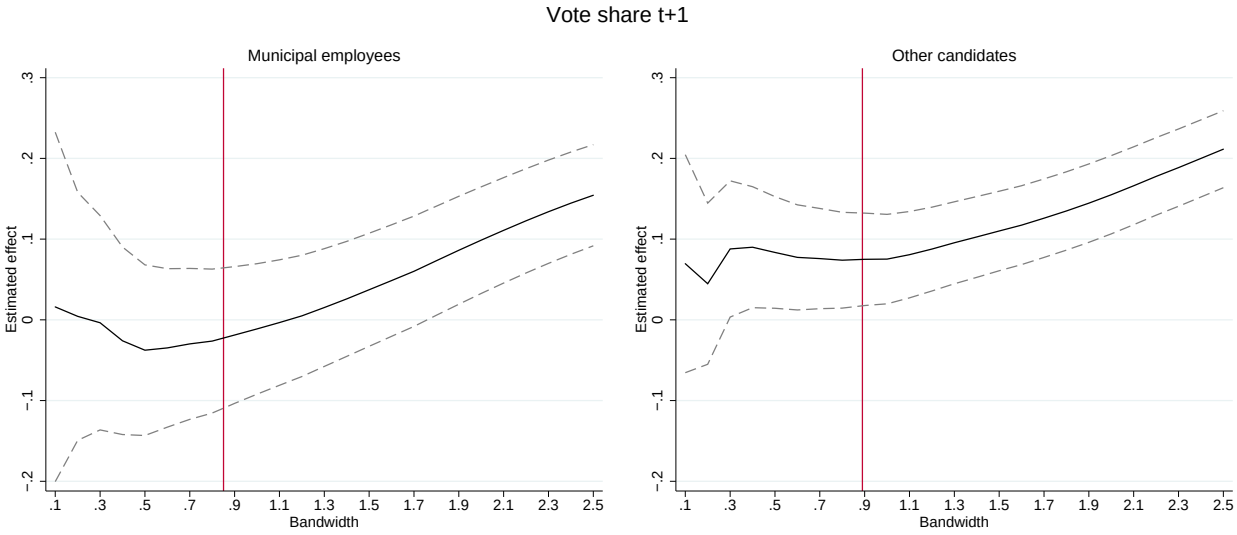


Figure E1. Robustness of the results in Table 7 for using RDD and for a wider range of bandwidths.

Notes: The solid line represents the point estimates and the dotted lines the 95% confidence interval. The results are from the conventional local linear RD specifications for various bandwidths. Standard errors are clustered at the municipality level. In all the panels, the left hand graph applies to the sample of municipal employees and right hand graph for the other candidates. The red line marks the Imbens and Kalyanaraman (2012) optimal bandwidth.