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Public Employees as Elected Politicians: Assessing Direct and Indirect Substantive Effects of Passive Representation

Short title: Public Employees as Elected Politicians

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Abstract

In many countries, public sector employees are eligible to hold political offices during their employment as civil servants. This often triggers conflict-of-interest concerns that elected public employees might sway policies to their professional benefit. In this article, we build on representation scholarship in political science and public administration to assess such substantive effects of public employees' political representation using detailed Norwegian administrative register and survey data (2003-2019). Our main results indicate that public employees differ little from other members *within* their party in terms of ideology and policy preferences. They do, however, appear to move their party slightly towards the left of the political spectrum, consistent with preference spillover effects induced by heightened public sector representation. Finally, using an instrumental variable approach exploiting close elections, we find that political representation of public employees is associated with at best modest public spending, employment and wage effects at the local level.

Key words:
Substantive representation, civil servant, bureaucracy, municipalities, Norway.

Online appendix:
Supplementary material is available with the online edition of the article.

Data and Replication materials:
Replication files for the municipality-level analyses in the manuscript are available in the JOP Data Archive on Dataverse (https://dataverse.harvard.edu/dataverse/jop). This empirical analysis has been successfully replicated by the *JOP* replication analyst.

The individual-level analyses in the manuscript exploit survey data collected for a project commissioned by the Norwegian Ministry of Local Government as well as registry data managed by Statistics Norway under the Norwegian Statistics Act. In compliance with the GDPR regulations, the former dataset cannot shared under the Data Protection Impact Assessment (DPIA) signed by the authors. The latter dataset cannot be made available to other

users following the provisions of the Norwegian Statistics Act. Researchers in approved research institutions can apply to Statistics Norway for access to the relevant administrative data, cf. https://www.ssb.no/en/omssb/tjenester-og-verktoy/data-til-forskning. Researchers must document sufficient confidentiality under the General Data Protection Regulation (GDPR), and submit a Data Protection Impact Assessment (DPIA).

1. Introduction

A long-standing concern among political scientists and economists alike is that there may arise conflicts of interest from holding elected office *during one's employment as civil servant*. For instance, the Public Choice view of budget-maximizing bureaucrats (Tullock 1965; Niskanen 1971; Buchanan and Tullock 1977) as well as the Bureau Voting Model (Garand 1988; Garand et al. 1991) assume that public employees are "self-interested political actors who desire to increase government spending for their own well-being" (Cigler 1990, p. 638). A similar assumption underlies Dunleavy's (1991) argument that 'bureau-shaping' bureaucrats redirect public funds to further the interests and decision-making influence of the bureaucracy. Scholars in these research traditions assume that employment in the public sector comes with clear material interests in terms increased public spending, well-staffed public organizations, as well as favourable public sector work conditions and remuneration (Egeberg 1995; Yackee 2023).

Under this line of argument, the political representation of public employees may lead to a conflict of interest as elected civil servants might be tempted to sway policies towards their professional interests. The ensuing prediction would be that larger shares of elected representatives with a public sector occupation cause higher levels of government spending (Garand 1988; Garand et al. 1991; Moe 2006; Hyytinen et al. 2018) and increased public sector employment and wages (Buchanan and Tullock 1977; Lowery and Berry 1983).[1] Moe (2006), Bhatti and Hansen (2013) and Geys and Sørensen (2022) furthermore maintain that such potential for conflicts of interest is particularly strong when local public employees work for their municipality of residence. The reason is that these individuals can "influence their job

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[1] Similar conflict-of-interest concerns have been raised with respect to the political representation of other professional groups, including businessmen (Fuhrmann 2020; Szakonyi 2021), lawyers (Matter and Stutzer 2015), and insurance brokers (Hansen et al. 2019).

security and work conditions more (…) than employees living and working in different municipalities" (Bhatti and Hansen 2013, p. 617).

This rather pessimistic view stands at odds with an equally large and vibrant scholarship in political science and public administration. This line of research maintains that political representation of public employees could benefit society as a whole whenever – as many public administration scholars suspect – civil servants are characterized by public sector values and public service motivation (Perry et al. 2010; Wright and Grant 2010). Under such conditions, they would tend to direct their focus towards the pursuit of the common good and actions that favour the larger community – rather than their narrow self-interest.

Naturally, the actual motives of public employees are most likely a mix between self-interest and public interest. Yet, few empirical studies have tried to address this debate by analysing whether and when the passive representation of public sector employees in elected bodies has substantive policy effects (for a recent exception, see Hyytinen et al. 2018).[2] In this article, we contribute to this literature by quantifying the (direct and indirect) substantive effects of civil servants' passive representation in politics using detailed survey and administrative register data on Norwegian local governments. Norway is characterized by *both* a high level of public employees elected into local councils (on average more than 30 percent), *and* substantial variation over time and space in this level of representation. In this respect, Norway is comparable to countries such as Canada, Finland or France (Rohr 1991; Hyytinen et al. 2018).

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[2] We define passive or descriptive representation as the level of representation of a social group – defined by gender, ethnicity or other characteristics – in a specific organizational environment (e.g., a political body or bureaucracy). The substantive effects of passive representation are understood as any benefits produced for those that are passively represented (Pitkin 1967; Selden 1997a,b; Mansbridge 1999; Meier 2019). Empirical assessments of the proposed link between descriptive and substantive representation have been carried out for public bureaucracies (e.g., Selden 1997a; Wilkins and Keiser 2006) as well as political bodies (e.g., Wängnerud 2009; Teele et al. 2018). Both of these literatures, however, predominantly focus on characteristics including gender, race and ethnicity. Only recently have some scholars started to investigate "the representation of (…) mutable and less visible identities" such as those related to an individual's profession (Gade and Wilkins 2013, p. 267). This includes studies of US army veterans (Gade and Wilkins 2013; Lowande et al. 2019), businessmen (Szakonyi 2021), lawyers (Matter and Stutzer 2015), insurance brokers (Hansen et al. 2019) and public employees (Hyytinen et al. 2018).

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At the same time, legal provisions in the Norwegian Local Government Act imply that public sector employees holding local elected office are *not* disqualified when the local council decides on the annual budget or its four-year finance plan – even though these decisions may directly affect their own workplace. Both aspects create a fruitful laboratory for uncovering any relationship between public employees' passive representation in politics and outcomes benefiting them as a professional group.

Our empirical analysis examines this relationship in three stages. First, we exploit a survey among local council members in 2015 (N≈3000) to evaluate their ideological orientation and policy preferences in function of their professional background. Shared values and beliefs within social groups are often seen as the main *direct* source of any substantive effects of passive representation (Selden 1997a,b; Murdoch et al. 2018; Meier 2019). We therefore examine whether elected public employees are positioned further towards the political left and display stronger preferences for increased public spending than their private-sector counterparts. Overall, we find that *within*-party differences due to variation in professional background are very small relative to *between*-party differences, which implies that the stated preferences of elected officials reflect partisan attachment rather than professional background.

Clearly, absence of intra-party preference differences across professional backgrounds does not rule out that public employees in political bodies have *indirect* substantive effects. One possibility is that public employees shift the position of their party due to "changes they induce in the behavior of other participants" (Lim 2006, p. 193; Selden 1997a,b). If so, public employees' party choice may intensify differences across parties (while not necessarily affecting intra-party cohesion), which could lead to indirect policy effects of public sector representation in politics. Testing this line of argument in the second stage of our analysis, we find that local party groups with larger public employee contingents display more left-leaning policy preferences. The estimated effect size, however, remains small and is not always

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statistically significant at conventional levels. This indicates that public sector representation is associated with at best modest left-wing shifts in local parties' ideological positions.

Finally, the third stage of our analysis estimates the overall impact of public sector representation on local policy outcomes, thereby evaluating any combined influence of direct and indirect substantive effects of passive representation. We thereto combine individual-level register data on local election outcomes in the 2003-2019 period (Fiva et al. 2020b) with individual-level register data on politicians' occupational background, as well as municipality-level information on local government expenditures, employment and wages. This dataset enables an instrumental variables approach where we instrument public sector representation at the municipality level using as-good-as-random variation deriving from close elections between public employees and other candidates (see also Clots-Figueras 2011, 2012; Hyytinen et al. 2018). Exploiting such variation from barely (non-)elected politicians, our analysis indicates that public sector representation in local councils has at best negligible effects on public spending, employment and wages.[3]

Overall, our analyses suggest that there are at best limited direct and indirect substantive effects of public employees' descriptive representation in politics. This is a strong result since it arises even though conflict of interest regulations in our setting do *not* bar public employees from participating in (budgetary) decisions affecting their own workplace. Several potential mechanisms may help explain these null findings. One possibility lies in public employees' motivations, since they might simply care more about the common good than their own self-interest (see above). Another possibility relates to politicians' self-selection into particular political parties. This limits differences in policy preferences among politicians within a party

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[3] This stage of our analysis is close in spirit to Hyytinen et al. (2018), who show that increasing the share of local councillors employed by the public sector leads to higher spending in Finnish municipalities. We extend their work in two ways. First, we additionally analyse politician preferences (stage 1) and party positions (stage 2) to obtain a more encompassing assessment of the impact of elected public employees. Second, we extend the set of outcome variables beyond public expenditure levels, and also look at public employment and wage effects.

(as our findings illustrate), and implies that the election of one additional public employee from a given party (relative to another politician) makes little difference for policy outcomes. Finally, individual politicians may be subject to party discipline, which restricts their room for manoeuvre within the party. While it is hard to establish the exact driver(s) of our null findings, it is clear they offer little support for long-lasting concerns about budget (and bureau) maximizing bureaucrats (e.g., Tullock 1965; Niskanen 1971; Dunleavy 1991; Yackee 2023).

2. Direct and indirect sources of substantive representation

From a theoretical perspective, a link between descriptive and substantive representation may derive from several direct and indirect sources. Direct sources of the substantive effects of passive representation stem from elected public employees' own behaviour (Lim 2006; Lowande et al. 2019; Hibbart et al. 2022). This builds on the notion that individuals from a given social group are more likely to have similar socialization experiences and share the same values and beliefs (Selden 1997a,b; Murdoch et al. 2018), which provides information about the preferences of the "communities with which they have shared experiences and common history" (Lowande et al. 2019, p. 648). Applied to our setting, elected officials with a public sector background would then be expected to increase the substantive representation of public employees (relative to, say, elected officials with a private sector background).

In a political setting, this direct source of substantive representation rests on the assumption that there exist differences in policy preferences and ideological orientations *within* political parties depending on individuals' background characteristics (Slegten and Heyndels 2020). This *intra*-party requirement is important since politicians with certain preferences and opinions often self-select into specific parties.[4] Given the *between*-party preference differences

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[4] Online Appendix Figure A.1 and Table A.1 confirm that public employees are more likely to be members of left-leaning parties. This may arise from self-selection as well as party leaders selecting candidates matching the party label irrespective of occupation. Either way, it implies more homogenous *within*-party policy preferences.

generated by such self-selection, any effects arising from increased passive representation do *not* reflect a direct source of substantive representation when they are due to a (voter-induced) shift in the partisan balance of the elected body under analysis.[5] From an empirical perspective, it is thus important to assess whether or not public employees hold different policy preferences relative to private-sector employees *within their party* (Garand 1988; Moe 2006; Hyytinen et al. 2018).

Indirect sources of the substantive effects of passive representation stem from changes in the preferences and behaviour of other elected politicians (Selden 1997a,b; Lim 2006). Such effects can in our setting first of all arise because the preferences of individual politicians help define party positions. Public employees joining a party may shift the policy position of that party – not because the new entrants have different preferences, but because they induce other members of that party to adjust their viewpoints. The presence of individuals from a given social group (here, public employees) can influence other party members by increasing their "emphatic understanding and responsiveness" to the concerns of that group (Selden 1997b, p. 6). This indirect source of substantive representation would imply that parties with more public employees display more left-leaning, pro-government policy preferences. Such 'preference spillovers' would work to buttress any substantive effects of public sector representation.

A second indirect source of substantive representation relates to "constituent demand-side" effects (Lowande et al. 2019, p. 648). The key idea is that members of a social group may be more likely to contact legislators with the same background, because they anticipate that "someone is listening who can understand the needs, realities and perceptions being described, and who would help if at all possible" (Herbert, 1974, p. 559). This not only increases perceptions of trust and legitimacy (Hibbart et al. 2022), but could boost the number of contacts,

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[5] This line of argument assumes that voter preferences for occupational backgrounds have no bearing on the share of council seats held by distinct parties. We return to this issue below.

applications or service demands deriving from this social group. Both elements can, in turn, lead to greater substantive representation. While this mechanism is important to keep in mind, our analysis will, unfortunately, not be able to assess its presence directly.

3. Institutional setting and data

Institutional framework

Norway has three levels of government: i.e. the national level, the regional level with 19 counties and the local level with just over 420 municipalities at the time of our analysis (2003-2019). Municipalities and counties are managed by independently elected municipal and regional councils, respectively, with elections held every four years using a proportional representation system to determine the seat allocation across parties. Seats within parties are allocated based on candidates' personal preference votes. Important for our purposes, all Norwegian nationals qualified to vote (i.e. over the age of 18) are generally also eligible to stand for political office. This includes the vast majority of public employees, even if they work for the municipal/regional authority or hold managerial functions in public institutions (such as school principals or heads of fire departments). Only a small set of top administrators at the local level is excluded, including the (deputy) chief executive, the council secretaries, the person responsible for the accounts or audits, and the (assistant) regional governor. This permissive institutional setting is similar to, for instance, Austria, Canada, France, Israel, and Spain (Rohr 1991; Braendle and Stutzer 2016), and allows us to exploit considerable variation over time and space in the level of representation of public employees in local councils.

Public employees' political representation can only lead to substantive representation when they are able to act and make decisions that benefit their social group. In the absence of such discretion, substantive representation cannot occur (Keiser 1999; Meier 2019). From this

perspective, it is important to note that the Norwegian Local Government Act includes the following provision:

> *A popularly elected representative who has been involved in the preparation of, or deciding on, a matter as an employee of the municipality or the county authority is disqualified from subsequently dealing with the same matter in a popularly elected body in the municipal or the county authority, respectively. The first sentence does not apply when the annual budget, finance plan, municipal plan, regional plan strategy and regional plan are dealt with by a popularly elected body.* (Local Government Act, section 11-10; https://lovdata.no/dokument/NLE/lov/1967-02-10)

This provision implies that elected representatives are *not* excluded from case handling in the local council purely due to their position as a public employee in the same municipality. In fact, they are disqualified *only when* they have participated in case preparation on a given matter as part of their employment. Moreover, this exclusion does *not* hold when the council is handling the local government's annual budget or its finance plan (which sets out revenue and spending plans for the next four years). A local government employee elected into the local council can therefore vote on the budget even if this vote affects them directly as an employee. A similar provision applies when setting the remuneration for certain public offices.

Local governments in Norway furthermore have considerable discretion to affect the size of the local public sector. Specifically, besides a 'no strings attached' general-purpose grant allocated on the basis economic, social, and demographic criteria, Norwegian municipalities rely on tax revenues for nearly half of their revenues. The central government stipulates minimum and maximum rates for some of these taxes (e.g., on work income and wealth), but local governments have wide discretion in setting property taxes on commercial and residential properties (as well as some purely local taxes). Moreover, local governments decide on user

charges for infrastructure services and certain welfare services (including elderly care and childcare), and can finance investments via previously amassed budgetary surpluses or loans. Hence, local councilors have influence over the level and distribution of local public finances.

While this legal framework arguably creates a best-case scenario for public employees to affect public policies as elected politicians, party discipline would naturally restrict the ability of any individual (or group of) elected official(s) to exert influence. Still, levels of party discipline in Norway are by no means exceptional relative to many other European countries (Rasch 1999; Depauw and Martin 2008), and it may also be less strictly enforced at the local government level. Furthermore, high levels of party discipline would not undermine any indirect sources of substantive representation arising when public employees affect their party's policy positions. We return to this when discussing our main findings.

Finally, wage-setting institutions in the Norwegian public sector are highly centralized. Most public employees are members of one of four unions, which negotiate a collective agreement that applies to all local government employees. The central salary system sets the same wage level and seniority bonus for similar positions requiring the same formal competence level. Hence, in principle, local governments have limited leeway in wage setting decisions. The only exception is that they can circumvent these restrictions – and thus affect wages – by redefining positions. For instance, they can re-define specific jobs as involving leadership responsibilities, which attract higher remuneration and offer more wage-setting flexibility.

Data sources

Our analysis builds on three sources of data. First, we have access to population-wide individual-level register data covering five local elections in the period 2003-2019. This dataset includes both those elected into local councils and those who did (not) stand for election (Fiva et al. 2020b). Crucially, the dataset includes Statistics Norway's classification of individuals

into occupational sectors, which follows international conventions: e.g., US System of National Accounts (SNA93) or European System of National Accounts (ESA95). This enables us to identify public employees at national, regional and municipal levels of government (respectively, 8.2%, 1.3% and 13.3% of the electorate). Individuals *not* working for national, regional and municipal governments are defined as private sector employees (which covers self-employed individuals as well as non-profit employees; 49.2% of the electorate). Finally, people not classified by occupational sector are considered as not employed (including students, retirees, and people on social security benefits such as unemployment or disability payments; 28.1% of the electorate). For all individuals in this dataset, we also know their age, gender, education level and immigration background, as well as their municipalities of residence and employment. While individuals are legally allowed work in *any* municipality as a public employee – including where they are not a resident – they are entitled to stand for local elected offices *only* in their municipality of residence.

Our second source of data derives from a survey conducted in 2015 among all members of the municipal councils (N≈3000) as part of a research project for the Norwegian Ministry of Local Government. This includes data on party affiliation, occupation, policy preferences and left-right self-placement (see https://www.regjeringen.no/no/tema/kommuner-og-regioner/kommunedata/nullpunktsmaling/id2540086). We provide more detailed discussion of the variables taken from this survey when relying on them in the analysis below. Finally, we obtained information about municipality characteristics including local public expenditures from Fiva et al. (2020a). This source of data has been extended with information about local public sector wages using the administrative register data mentioned above.

4. Public sector representation and policy preferences

We start our analysis by looking into potential differences in the ideological positions and policy preferences across public and private-sector employees *within a party*. As discussed in section 2, this within-party preference divergence is a necessary – though not sufficient – condition behind the main direct source of substantive representation. That is, if private and public employees have diverging policy preferences *after controlling for their partisan affiliations*, increased public sector representation in elected offices might have a direct effect on their substantive representation (Geys and Sørensen 2019; Slegten and Heyndels 2020). We explore this issue using 2015 survey data covering almost 3000 municipal council members.

Figure 1 displays municipal council members' average self-placement along a left-right ideological scale (ranging from 1 for extreme left to 10 for extreme right), differentiated by occupational sector and party affiliation. The question was: "In politics we often speak of the 'left' and the 'right'. Where would you place yourself on such a scale?" The data highlight large disparities in council members' ideological position *across* parties, as would be expected. More importantly, we find at best small differences in ideological orientation by occupational sector *within* parties (see also Columns (1) and (2) in Table 1). In other words, the majority of any left-right difference between private and public employees is absorbed by the ideological distinctions between parties.[6] This is consistent with both public and private sector employees selecting themselves into distinct parties based on their ideological orientations (see also section A of the Online Appendix).

*** Figure 1 about here ***

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[6] Geys and Sørensen (2019) and Slegten and Heyndels (2020) report similar findings for sex gaps in politicians' policy preferences.

We pursue this further in Table 1, which displays the results from a series of regression models that focus on two local political discussion points brought up in the survey: i.e. property taxes (a key local revenue source; see above) and government spending.[7] The dependent variables reflect respondents' support for property taxes (columns 3 and 4), and higher local public expenditures (columns 5 and 6). The main independent variables are dummies for individuals' occupational sector (i.e. not employed, national government, regional government, municipal government; private sector as omitted reference category). All models include a full set of municipality fixed effects. We also add a full set of party fixed effects in even columns to accommodate that politicians with certain preferences (self-)select into particular parties. Comparing the results in uneven and even columns, Table 1 confirms that any preference differences across occupational sectors are almost always fully absorbed by individuals' party affiliation. The sole exception is the coefficient of regional public employees' preferences about property taxation, but even this is only statistically significant at the 90% confidence level. These findings highlight that ideological profiles and policy preferences are highly homogenous across occupational backgrounds *within parties*. This is important since it suggests that *direct* sources of substantive representation are likely to remain very modest.

*** Table 1 about here ***

5. Public sector representation and party positions

Even if there are no substantive intra-party differences in ideology or policy preferences, it may be that public employees shift the position of their party (see section 2). To test for this indirect mechanism of substantive representation, we merge data from the 2015 survey among

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[7] The question wording and answer options are as follows. Property taxation: "Are you in favour or against property taxation in your municipality?" ('in favour', 'against', 'no opinion'). Public spending: "If you consider the distribution of municipal expenditures today, which of the following policy areas do you think should receive a larger or smaller share of municipal revenues, or do you think it is OK as it stands today? ('higher share' (+1), 'lower share' (-1), 'OK as is' (0)). We take the average across all spending programs (i.e. administration, childcare, education, elderly care, healthcare, child custody, culture, industry development and infrastructure) as our dependent variable.

municipal council members (used in section 4) with municipality-level data on the share of private and public sector employees in each council party group (derived from our individual-level register data). Let LR_{ipm} denote the left-right position of council member i representing party p in municipality m (ranging from 1 for extreme left to 10 for extreme right). The share of representatives in party p in municipality m working as public employees at the national level is $NatGov_{pm}$, and similarly for the shares working as public employees at the municipal ($MunGov_{pm}$) and regional levels ($RegGov_{pm}$). Representatives with no sectorial background are captured in $NoSector_{pm}$ (private-sector employees are the excluded reference group). We then estimate the following regression model:

$$LR_{ipm} = \beta_P + \beta_S NatGov_{pm} + \beta_M MunGov_{pm} + \beta_R RegGov_{pm} + \beta_N NoSector_{pm} + \theta_m$$
$$+ \vartheta_p + \epsilon_{ipm}$$

Municipality fixed effects (θ_m) capture the overall ideological leaning of the municipal council, while party fixed effects (ϑ_p) capture the average ideological position of a party across the Norwegian territory. The main variables of interest ($\beta_S, \beta_M, \beta_R, \beta_N$) estimate how the left-right position of council members of a given party p in municipality m changes when we increase the share of council members with a specific occupational background in that party and municipality by one percentage point. The results are summarized in Table 2. Columns (1) and (2) show estimates without and with municipality fixed effects, respectively. Observe that the estimates for the party dummies are similar across both models, which indicates that municipality variations have little bearing on overall party positions, all else equal.

The negative estimates on the main parameters of interest indicate that larger shares of public sector representatives are associated with a shift towards the left in the average ideological self-placement of a party's council members. This suggests that public employees within any given political party have some (direct or indirect) influence on the overall ideological position of

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that party. Nevertheless, the observed shifts remain substantively very small. For instance, increasing the share of public employees working at the national level within a party with one standard deviation (0.22) would be reflected in a shift towards the left of less than 0.1 points on the 10-point left-right scale. The effects are even smaller for municipal and regional public employees (i.e. approximately 25 to 50 percent of the effect of national public employees). Note also that the point estimates of political parties are considerably larger than the point estimates of public sector representation. For example, the Socialist Left Party members place themselves about 1.6 points to the left of the Labour Party (the reference category), while Conservative Party members place themselves 3.8-3.9 points to the right of the Labour Party. Hence, partisanship is *much* more important for the ideological position of local council members relative to their occupational background (given their partisanship). Overall, these findings suggest that higher representation of public employees is associated with at best modest left-wing shifts in council members' ideological positions, such that this *indirect* source of substantive representation is likely to be of limited importance in our setting.

*** Table 2 about here ***

6. Public sector representation and policy outcomes

Our results thus far indicate that direct sources and at least one indirect source of substantive representation find only marginal corroboration in our Norwegian data. Since it is impossible to rule out (or in) all possible direct and indirect sources of substantive representation (Lim 2006; Lowande et al. 2019), this section turns to a more general estimate of the impact of public sector representation on local policy outcomes. The ideal experiment to evaluate this would involve randomly allocating representatives with different occupational backgrounds to distinct municipalities while keeping the party structure fixed. Clearly, this is practically – and ethically – unfeasible. We therefore rely on an instrumental variables approach where the

exogenous variation arises from close electoral races between public employees and other candidates (as in Clots-Figueras 2011, 2012; Hyyttinen et al. 2018) using data on all five municipal council elections since 2003. This approach rests on the assumption that the final result in (very) close elections is as good as random, which allows for causal inferences with high internal validity because it generates exogenous variation in who becomes elected.

Empirical specification and identification

Let *m* denote municipality, *x* denote election period – i.e. the periods 2004-2007, 2008-2011, 2012-2015, 2016-2019 – and *t* represent years within each election cycle (t=1,2,3,4). We then estimate:

$$Public\ policy_{mxt} = \beta\ Share\ elected\ public\ employees_{mxt} + \theta_{xt} + Controls + \epsilon_{mxt}\ (1)$$

Where the outcome of interest – $Public\ policy_{mxt}$ – equals total municipal expenditures per capita, the average wage of local public employees, or the number of local public sector work-years (as a proxy for public sector employment). The main independent variable – $Share\ elected\ public\ employees_{mxt}$ – is the proportion of public employees in the council of municipality *m*, election period *x* and year *t* within then election cycle. We estimate effects separately for each year within the election cycle and hypothesize that $\beta > 0$.

In line with Clots-Figueras (2011, 2012) and Hyytinen et al. (2018), we exploit close elections to identify as good as random variation in the share of elected public employees. Following Fiva and Røhr (2018), we define the *WinMargin* for each candidate *j* on list *l* for each municipal council in each election as follows:

$$WinMargin_{jl} = \begin{cases} \dfrac{Poll_{jl} - Poll_{jl}^{S_l+1}}{Partyvotes_l} & if\ R_{jl} \geq S_l\ (Elected\ candidates) \\ \dfrac{Poll_{jl} - Poll_{jl}^{S_l}}{Partyvotes_l} & if\ R_{jl} < S_l\ (Not\ elected\ candidates) \end{cases}$$

Where 'Poll' measures the number of personal votes, which forms the basis for the within-party distribution of seats. Let S_l denote number of seats the party won in the election, and the candidate won the seat if $R_{jl} \geq S_l$. We then restrict the analysis to cases where $abs(WinMargin_{jl}) < 0.1$, which we define as narrowly won/lost council seats (i.e. a 10% bandwidth, which covers 68% of all candidates contesting the last seat obtained by their party). This choice of bandwidth involves a balance between statistical power (i.e. higher N with wider bandwidth) and internal validity (i.e. higher validity with narrower bandwidth). We experimented with different bandwidths, but this does not affect the results reported below.[8] We further limit the sample to cases where one of the candidates involved in a close race is a public employee while the other is not. Online Appendix Figure B.1 displays a binned scatterplot illustrating the random nature of public employee victories at the threshold. This highlights that the victory of a public employee over a non-public employee in a close race is effectively a 50-50 coin toss.[9]

Defining $List_{xml} = 1$ as lists in municipality m including a close candidate contest as defined above, and $PublicSectorVictory_{xml} = 1$ when a public employee was elected in the narrow contest (0 otherwise), this allows us to construct an instrument variable as the share of lists l in each municipality-election where a public employee was barely elected:

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[8] Figures B.4 and B.5 in the Online Appendix show a robustness check using instead a 20% win margin.

[9] Identification of causal effects requires that there exists balance of potential confounders around this 50-50 threshold. In our setting, a critical validity check therefore entails that the instrument is not correlated with pre-determined municipality characteristics. We verify this by regressing the instrumental variable against the share of female council members, the average age of council members, the number of council members, population size, and the seat shares of the eight main party lists (with the Labour Party as the excluded reference group). The results in Online Appendix Table B.3 and Figure B.2 indicate that the instrument is unrelated to pre-determined municipality characteristics with the possible exception of the share of female council members. The latter may raise concerns that our estimates become conflated by gender representation (since a 'bundle of characteristics' including public sector affiliation and gender changes at the threshold; Marshall 2022). To address this, we exploit our micro data to design two alternative instrumental variables: i.e. one using close elections where women compete against men, and another based on same-gender close elections. Online Appendix Table B.3 indicates perfect balancing for the 'same gender' instrument, while Online Appendix Table B.4 confirms that this alternative specification of the instrument leaves our main results unaffected. Hence, our results are robust even when excluding any gender changes at the threshold.

$$Instrument_{xm} = \frac{\sum_l PublicSectorVictory_{xml}}{\sum_l List_{xml}}$$

This yields the first-stage regression equation:

$$Share\ elected\ public\ employees_{mx} = \gamma_t Instrument_{mx} + \vartheta_{xt} + Controls + \varepsilon_{mx} \quad (2)$$

The predicted values of equantion (2) can then be used in equation (1) to identify the causal effect of public sector representation on our policy outcome variables. Note that the vector of *Controls* in both equations includes fixed effects for labor market regions, the shares of party lists with marginal candidates in the municipality, and the (average) win margin of the barely elected candidates (following Clots-Figueras 2011, 2012).

As recently highlighted by Marshall (2022), a potential concern with our approach is that voters may for some (un)observable reason prefer candidates with a certain characteristic (say, public employees) over candidates with another characteristic (say, private-sector employees). Under such conditions, close elections would only arise *if* candidates without characteristic X have some compensating quality that benefits them in the election against candidates with this characteristic. This would naturally imply a lack of balance along at least some (un)observable dimensions at the 50-50 threshold, which leads to biased inferences on our main estimand of interest (i.e. β). Crucially, Marshall (2022) shows that one of the following two assumptions would be required to derive valid inferences: i) either public sector employment does *not* affect candidate vote shares; or ii) no compensating candidate quality affects the outcome of interest. He goes on to state that either assumption is highly implausible "when voters *observe* X [in our case: civil servant status]" (Marshall 2022, p. 4, our italics).

Clearly, this creates a major concern when studying easily observable traits such as candidate gender, ethnicity or party affiliation. In sharp contrast, candidates' civil servant status is *not* easily observable to voters in our Norwegian setting. This rests on two complementary pieces

of evidence. First, Norwegian Election Law provides the opportunity for parties to include information on occupation on the ballot. We therefore collected all municipal and regional election lists from the 2015 and 2019 local elections (5,936 election lists with 125,960 candidates). This shows that only 7.48% of these lists include information on occupational background (7.62% in municipal elections and 5.43% in county elections). Moreover, the occupational backgrounds mentioned on the ballot (e.g., economist, engineer, teacher, nurse, and so on) generally do not yield clear-cut information on candidates' public versus private sector affiliation. Overall, only 1.73% of the 125,960 candidates on the lists we collected can be identified as a public sector employee based on the information provided.

Second, voters can cast personal votes in Norwegian elections, which may improve candidates' post-election realized ballot rank (based on personal votes) relative to their pre-election ballot rank (decided by the party). Analyzing these personal votes across the 2003-2019 period, we find that public employees are *not* more likely to gain ballot ranks compared to private sector employees or candidates without occupation (see Online Appendix Figure B.3). This suggests that preferential votes are not cast to the benefit of public employees. Hence, voters either do not prefer public employees over candidates employed in other sectors, or they cannot express that preference in the voting booth due to a lack of sufficiently detailed information about candidate's profession (see above). This confirms recent findings based on five Norwegian Local Election Surveys over the period 1999-2015 indicating that voter preferences regarding candidate-specific characteristics are very weak in Norway, and are strongly dominated by party- and issue-based preferences (Geys et al. 2022). All in all, these observations suggest that voters cannot observe civil servant status and that public sector employment does not affect candidate vote shares, which is important for the validity of our inferences (Marshall 2022).

Main findings

The findings are shown in Figures 2 and 3. In each case, we provide results for three measures of public sector representation in local councils: i.e. all public employees regardless of the level of government (top panel), municipal public employees (middle panel) and municipal public employees working and living in the residential municipality (bottom panel). The F-test statistic for the first stage exceeds 50 in all specifications, suggesting we do not suffer from a weak-instrument problem (see Online Appendix Table B.1). The point estimates in Figure 2 indicate a spending *reduction* of circa 0.1% for an extra closely elected public employee in the municipal council: i.e. 80NOK (ca. 8 EUR/USD) relative to roughly 80.000NOK average municipal expenditures per capita (ca. 8000 EUR/USD). Further support for the null-result comes from the observation that estimated effects on public spending are *not* larger for local government employees working in their residential municipality (which would constitute a best-case scenario for public employees' influence; Moe 2006; Bhatti and Hansen 2013; Geys and Sørensen 2022). The 95% confidence interval indicates an upper-bound effect on public spending of circa 0.35% for an extra closely elected public employee. A one standard deviation increase in public employee representation (i.e. 0.11) thus would *at most* generate an increase in public spending equivalent to circa 13% of the standard deviation in this dependent variable (log-spending has a standard deviation of 0.29).

Similarly, Figure 3 indicates very small and statistically insignificant point estimates when looking at local public employee wages. This is consistent with the strong influence of comprehensive wage settlements in our Norwegian setting. The estimated effects on work-years are positive, and tend to be larger when we focus on those public sector employees who work in their residential municipality. The point estimates, however, are once again very small. The lower panel in Figure 3 has an estimated effect of 0.18, suggesting that a one standard deviation increase in public employee representation (i.e. 0.11) causes a public sector work-

force increase of about 2%. Still, it is important to observe that we can never rule out the null hypothesis of no relationship between public employee representation and local policy outcomes.

*** Figures 2 and 3 about here ***

The estimates displayed in Figures 2 and 3 are local average treatment effects (LATE) for the universe of Norwegian municipalities. One may worry, however, that municipalities with smaller local councils differ from larger ones since one additional public sector representative might have a larger effect on the overall share of public sector representation. Smaller-sized councils also have ballot lists with smaller shares of safe seats, which may affect the strength of our instrument across distinct council sizes. We therefore implemented a robustness check focusing on the subset of smaller municipalities (less than or equal to the median council size of 23 members). Online Appendix Table B.5 compares the estimates obtained from the complete sample with those from the sample restricted to municipalities with smaller council sizes. The first-stage estimates show a noticeably stronger instrument in smaller councils (as would be expected), while the second-stage IV-estimates indicate homogenous (null) effects irrespective of council size.

Before we conclude, Hyytinen et al. (2018) use a similar approach on data from Finnish local governments, and report that one additional (closely elected) public employee in a local council *increases* spending on average by about 1% over a four-year period. This difference between our results is unlikely to derive from distinct institutional contexts, since local governments in Finland and Norway have comparable responsibilities and decision-making authority (including about the budget), municipal council sizes, electoral systems (both based on proportional representation), and large public sectors. Nonetheless, there are differences related to, for instance, the extent of party discipline and individual-level self-selection into particular

parties, as well as with respect to the number of parties running in elections (all of which tend to be higher in Norway). Hence, we suggest that our null findings may derive from candidates who self-select into political parties – thereby facing party-level policy positions consistent with their preferences (cf. Figure 1) – and political parties disciplining elected politicians – which mitigates their individual influence on policy outcomes. Even so, we urge future research to consider comparative research exploiting (one or more) sources in institutional variation in order to improve our understanding of the role of candidate selection into parties and party discipline.

7. Conclusion

A persistent academic and public debate exists about the eligibility of public sector employees for political office (Rohr 1991; OSCE 2017), and the potential for conflicts-of-interest this may engender (Tullock 1965; Niskanen 1971; Dunleavy 1991; Egeberg 1995). On balance, our analysis suggests that there may be little reason for concern. While public employees tend to represent left-wing political parties, they are no different in ideological position and policy preferences from other members of these parties. They also have only a very limited impact on the overall ideological and policy position of the parties they join. Finally, we uncover at best negligible effects of public sector representation on local public expenditures, wages and employment. [10] Naturally, these findings relate to one country with a particular set of institutional characteristics, which does not allow us to verify the potential institutional scope conditions of our results. Future work would therefore do well to replicate our analysis in countries with, for instance, less ideological and/or disciplined parties, higher levels of patronage and corruption, lower levels of transparency in political decision-making, and

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[10] Clearly, public expenditure is a broad measure and cannot parse out potential effects on parts of the budget of most interest to (certain groups of) public employees. One would, for instance, expect teachers to be more interested in affecting the education budget, while nurses might care more about the healthcare budget (cf. Dunleavy 1991; Egeberg 1995). Such targeted effects remain an important avenue for further research.

different electoral systems. Explicitly comparative research designs would be highly beneficial to assess the role and relevance of such institutional characteristics.

Previous representation scholarship has by and large concentrated on the impact of visible characteristics including gender, race and ethnicity. In sharp contrast, our analysis contributes to recent work addressing less visible group identities and affiliations such as individuals' professional affiliation (Keiser et al. 2002; Gade and Wilkins 2013; Matter and Stutzer 2015; Hyytinen et al. 2018; Hansen et al. 2019; Lowande et al. 2019; Szakonyi 2021). In such settings, substantive representation may not always be a positive or desirable outcome since there is no previous discriminatory treatment to rectify (Wängnerud 2009; Meier 2019), and conflict-of-interest concerns may become more prominent (Tullock 1965; Niskanen 1971; Dunleavy 1991; Moe 2006). As a result, any substantive representation of specific professional groups would require a more careful consideration of institutional restrictions and legal competence rules.

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BIOGRAPHICAL STATEMENTS

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Figure 1. Within- and between-party ideological heterogeneity
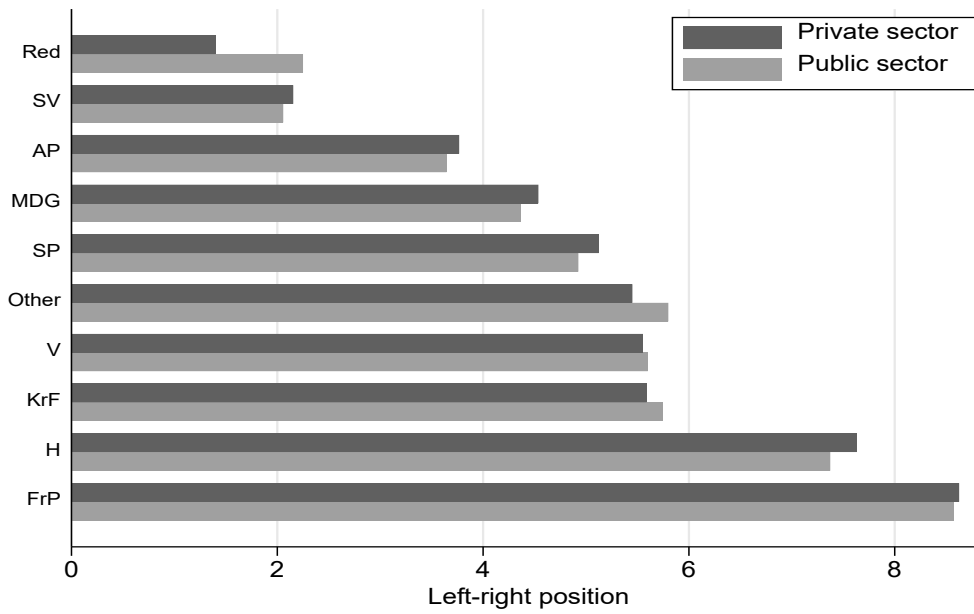
Notes. We display average self-reported left-right position of council members working in the private sector (dark grey bars) or the public sector (light grey bars). Left-right positions are measured by a 10-point left-right ideological scale (ranging from 1 for extreme left to 10 for extreme right; see main text). Party codes: Red: Red Party; SV: Socialist Left Party; AP: Labour Party; MDG: Green Party; SP: Centre Party; Other: Other parties; V: Liberal Party; KrF: Christian Democratic Party; H: Conservative Party; FrP: Progress Party.

Figure 2. The impact of public sector representation on public spending

Note. The dependent variable equals total municipal expenditures per capita, measured on a log-scale. The main explanatory variable is the (instrumented) share of public employees in each municipality. This covers all public employees regardless of the level of government in the top panel, only municipal public employees in the middle panel, and only municipal public employees working and living in the residential municipality in the bottom panel. The model includes fixed effects for years and labor market regions, as well as controls of the (average) win margin of marginal seats and the share of marginal seats in the local council. We display 90% and 95% confidence intervals around the point estimates. For additional details, see Table B.1 in the Online Appendix.

Figure 3. The impact of public sector representation on public sector wages and work-years

Note. The dependent variable equals the average wage level of local public employees (left-hand panel) and local public sector work-years (right-hand panel), both measured on log-scales. The main explanatory variable is the (instrumented) share of public employees in each municipality-party. This covers all public employees regardless of the level of government in the top panel, only municipal public employees in the middle panel, and only municipal public employees working and living in the residential municipality in the bottom panel. The model includes fixed effects for years and labor market regions, as well as controls of the (average) win margin of marginal seats and the share of marginal seats in the local council. We display 90% and 95% confidence intervals around the point estimates. For additional details, see Table B.2 in the Online Appendix.

Table 1. Within-party preference heterogeneity

	(1)	(2)	(3)	(4)	(5)	(6)
	Left-right		Property taxes		Public spending	
Not employed	-0.503***	-0.231**	0.0609**	0.0194	0.0182	0.0109
	(0.127)	(0.075)	(0.0285)	(0.0236)	(0.0201)	(0.0205)
National gov.	-0.730***	-0.262***	0.0952***	0.0159	0.0410**	0.0293
	(0.147)	(0.079)	(0.0352)	(0.0295)	(0.0199)	(0.0204)
Regional gov.	-0.943***	-0.241*	0.187***	0.0692*	0.0654	0.0509
	(0.226)	(0.129)	(0.0465)	(0.0399)	(0.0354)	(0.0350)
Municipal gov.	-0.950***	-0.279***	0.132***	0.0279	0.0346**	0.0190
	(0.101)	(0.065)	(0.0247)	(0.0220)	(0.0150)	(0.0153)
Other parties		-3.063***		0.369***		0.100**
		(0.226)		(0.0610)		(0.0406)
Labour		-4.868***		0.742***		0.107***
		(0.109)		(0.0330)		(0.0267)
Conservative		-1.002***		0.129***		0.0160
		(0.101)		(0.0296)		(0.0280)
Christian Democrat		-3.013***		0.560***		0.0190
		(0.137)		(0.0514)		(0.0349)
Green		-4.279***		0.766***		0.0410
		(0.309)		(0.0694)		(0.0676)
Center		-3.608***		0.541***		0.0437
		(0.120)		(0.0434)		(0.0318)
Socialist Left		-6.448***		0.911***		0.189***
		(0.166)		(0.0537)		(0.0620)
Liberal		-3.135***		0.513***		0.0221
		(0.170)		(0.0671)		(0.0335)
Red		-7.246***		0.581***		0.0822
		(0.228)		(0.181)		(0.0592)
Municipality FEs	YES	YES	YES	YES	YES	YES
Observations	2,921	2,921	2,921	2,921	2,624	2,624
R-squared	0.232	0.740	0.319	0.547	0.202	0.224

Notes. 'Left-right' measures council members' left-right self-placement on a 10-point scale. 'Property taxes' equals 1 when the respondent supports this policy issue, 0 otherwise. 'Public spending' was calculated using questions on administration, childcare, education, elderly care, healthcare, child custody, culture, industry development and infrastructure. For each category, the respondents indicated whether they preferred higher (coded +1), similar (coded 0), or lower (coded -1) spending shares. We take the average across all spending programs as our dependent variable. The reference groups are persons employed in private sector, and representing the (right-wing) Progress Party. We report robust standard errors clustered on municipalities. Significance: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 2. Ideological positions and public sector representation

	(1)	(2)
NatGov	-0.338***	-0.402***
	(0.126)	(0.148)
RegGov	-0.195	-0.141
	(0.162)	(0.183)
MunGov	-0.164*	-0.0919
	(0.0954)	(0.103)
NoSector	-0.176	-0.245**
	(0.110)	(0.122)
Christian Democrat	1.875***	1.924***
	(0.0845)	(0.0872)
Conservative	3.835***	3.883***
	(0.0589)	(0.0664)
Center	1.343***	1.359***
	(0.0602)	(0.0673)
Green	0.778***	0.767***
	(0.128)	(0.142)
Liberal	1.816***	1.794***
	(0.0918)	(0.0906)
Progress	4.859***	4.915***
	(0.0874)	(0.0917)
Red	1.322***	1.476***
	(0.0937)	(0.119)
Socialist Left	-1.592***	-1.632***
	(0.0708)	(0.0769)
Other parties	1.777***	1.815***
	(0.204)	(0.192)
Constant	3.855***	3.834***
	(0.0658)	(0.0672)
Municipality FEs	No	Yes
Observations	3,340	3,319
R-squared	0.711	0.749

Note. The dependent variable is council members' left-right self-placement on a 10-point scale. The main explanatory variables are the shares of public employees in each municipality-party (with private sector employees as reference group). All analyses include indicator variables for respondents' party affiliation, and model (2) includes fixed effects for municipalities. We report robust standard errors clustered on municipalities (in parentheses). Significance: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Online Appendix to

Public Employees as Elected Politicians: Assessing Direct and Indirect Substantive Effects of Passive Representation

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Appendix A. Distribution of candidates' occupational background across parties

Figure A.1 displays the share of public sector employees among municipal council candidates and representatives of each party over the period 2007-2019. The x-axis indicates parties' placement on a left-right scale (with extreme left equal to 0 and extreme right equal to 10), based on municipal council members' left-right self-placement in a 2015 survey. The y-axis displays the share of public sector employees. The size of the bubbles reflects the overall size of each party (defined as parties' share of election candidates or elected council members across the country). Figure A.1 indicates a strong negative correlation between parties' left-wing position and their share of public sector employees – both among election candidates and elected representatives. This relationship corresponds closely to the observation in previous work that public sector employees tend to self-select into as well as vote for left-leaning parties (Garand et al. 1991; Jensen et al. 2009; Thomsen 2014).

Figure A.1. Public sector employees' representation by parties' left-right positions
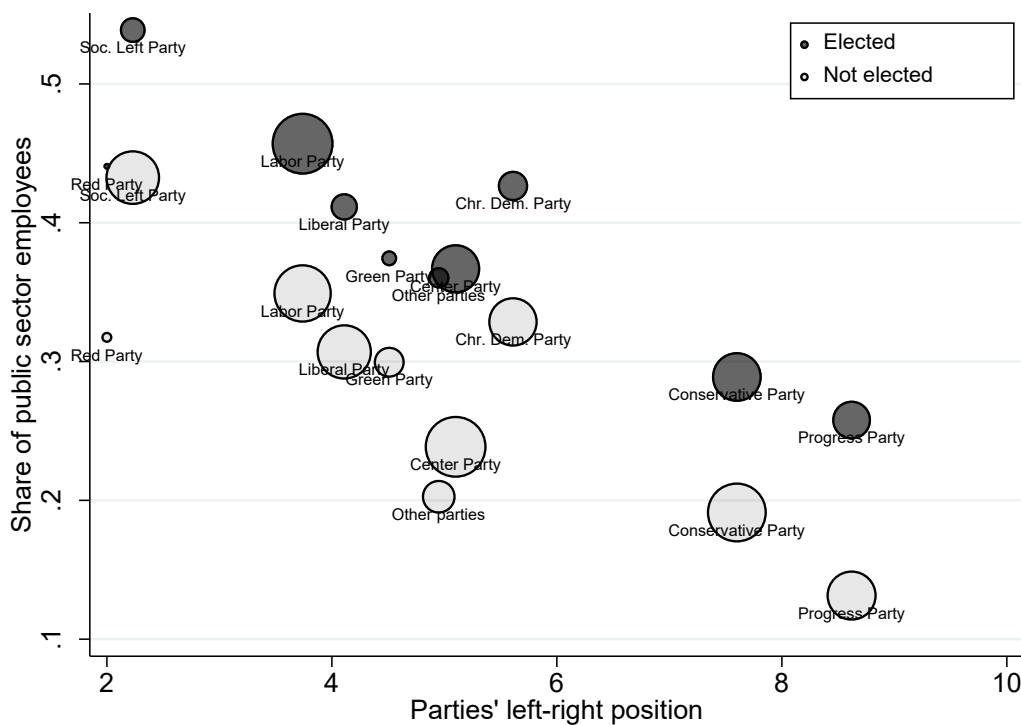
Notes. The diagram shows the share of public sector employees among municipal council candidates and representatives of any given party. Parties are placed on the horizontal axis by the average left-right self-placement of their municipal council members in a 2015 survey, using the question: "Where would you place yourself on a scale from 0 to 10 where 0 means the left and 10 means right?" Bubbles reflect parties' size as measured by their relative share of municipal council candidates and members across the country. The diagram relies on data from the 2007, 2011, 2015 and 2019 municipal council elections.

Clearly, the pattern in Figure A.1 could be an artefact of other individual-level characteristics, such as gender, age, education level or immigrant status. We therefore estimated regression models using an indicator variable equal to 1 for public sector employees (0 otherwise) as response variable, and parties' left-right position as the main independent variable. The results are reported in Table A.1, where even columns include a host of individual-level control variables. The results indicate that the probability of working in the public sector is significantly larger (smaller) among candidates and representatives of parties with a left-wing (right-wing) orientation. In terms of effect size, a one-point shift to the right yields a 3-4% reduction in the likelihood of a party's candidates and representatives being public sector employees.

Table A.1. Party positions and public sector employee representation

|	(1)	(2)	(3)	(4)
	All candidates		Elected representatives	
Parties' left-right position	-0.0488***	-0.0299***	-0.0471***	-0.0358***
	(0.00106)	(0.000844)	(0.00200)	(0.00190)
Observations	171,209	170,836	31,104	31,071
R-squared	0.045	0.199	0.053	0.159
Municipality FE	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes

Notes. The table displays regression analysis using public sector employee (=1) as response variable. The left-right positions of individual parties are derived from a survey among municipal council members (2015). Models (1) and (3) include municipality and election year fixed effects only. Columns (2) and (4) add a number of individual-level controls: gender, age dummies (one-year intervals), education level (five levels), and immigrant status (four categories). The standard errors are robust and clustered on municipalities. Significance levels: *** $p<0.001$, ** $p<0.01$, * $p<0.05$.

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Appendix B. Validity and robustness checks for Regression Discontinuity Design

Figure B.1. RD regression plot
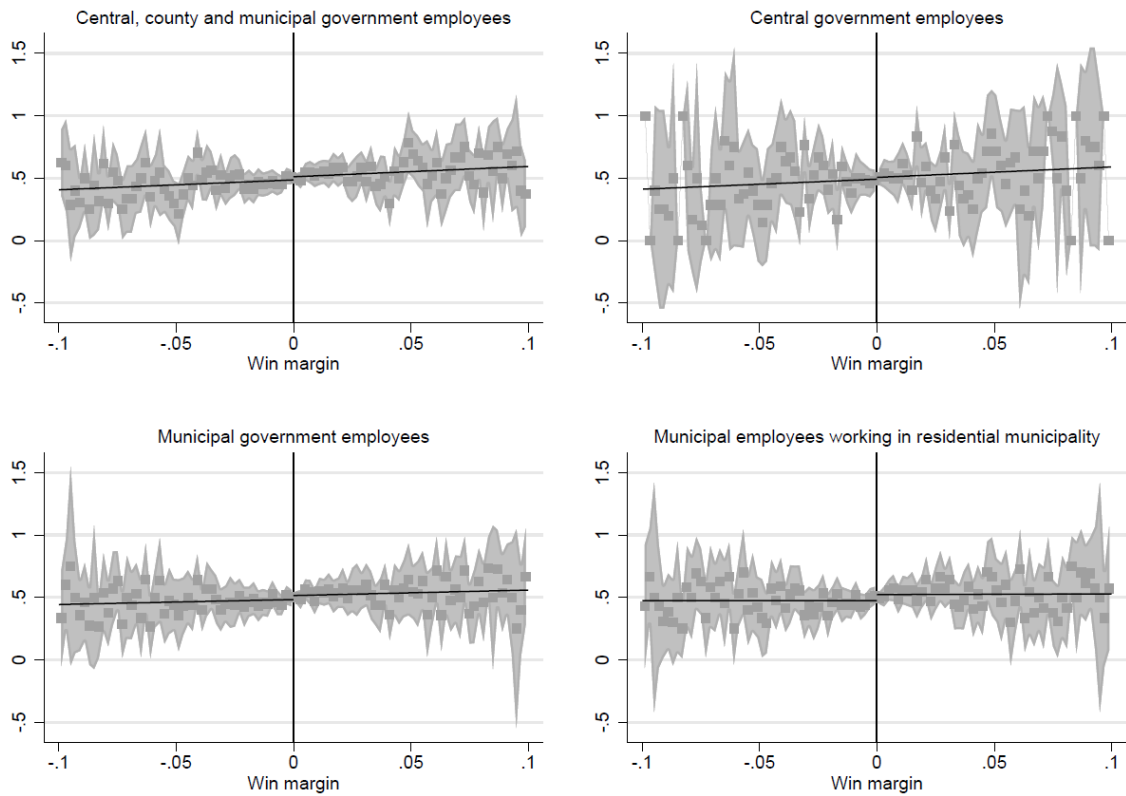
Note: The graph plots the likelihood of electing a public sector representative conditional on the "win margin". The plots include observations with a win margin less than +/- 10%. The diagrams show public sector candidates for all categories, national, regional and municipal government and municipal public employees working in their home municipality. The diagrams display separate linear regression lines below and above the cutoff value. The plots have 50 bins above and below the cutoff value and show corresponding 95% confidence intervals.

Figure B.2. Balancing tests
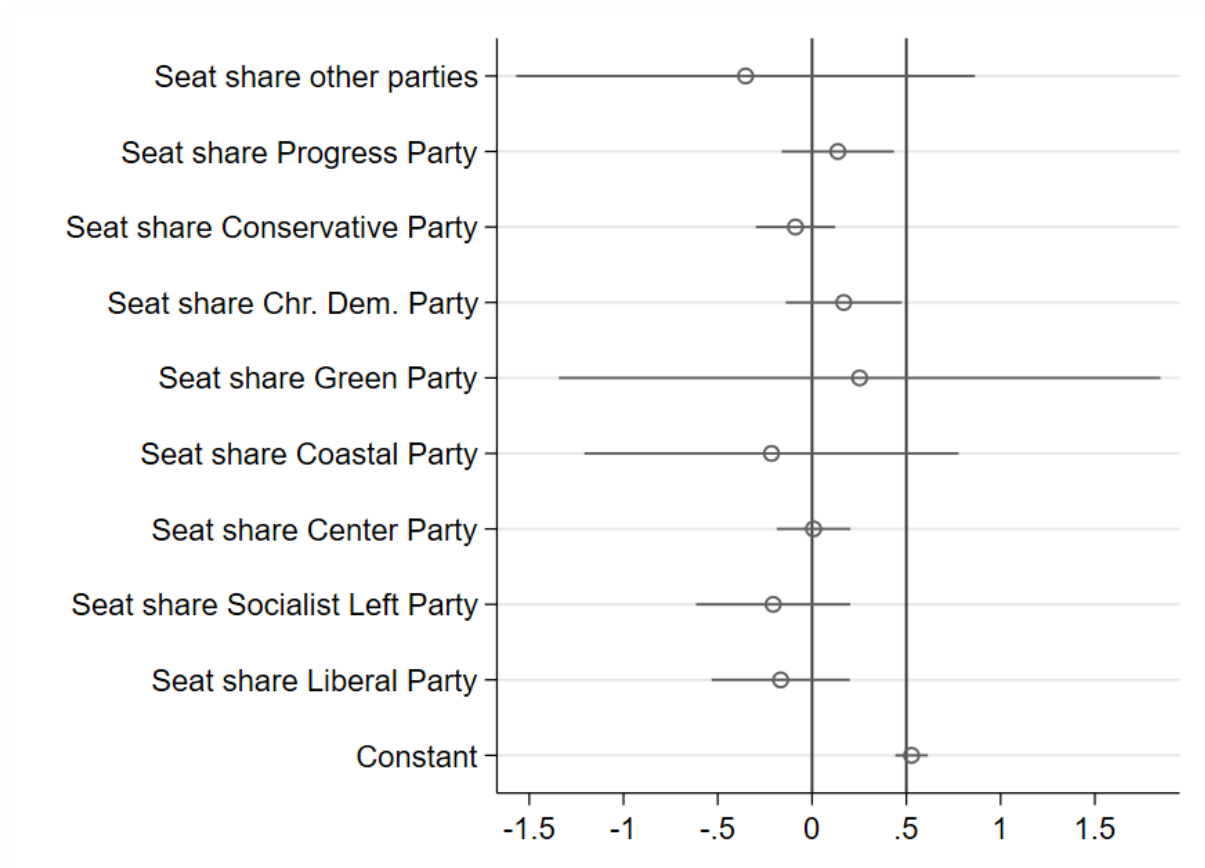
Notes. The figure displays results from a regression using the instrument (for local government employees) as response variable using data from the local elections in the period 2003-2015. The regression includes all party seat shares except Labour Party seat shares. The diagram shows point estimates and 90% confidence intervals estimates. The standard errors are clustered on municipalities.

Figure B.3 Preferential voting and candidates' sectoral affiliation
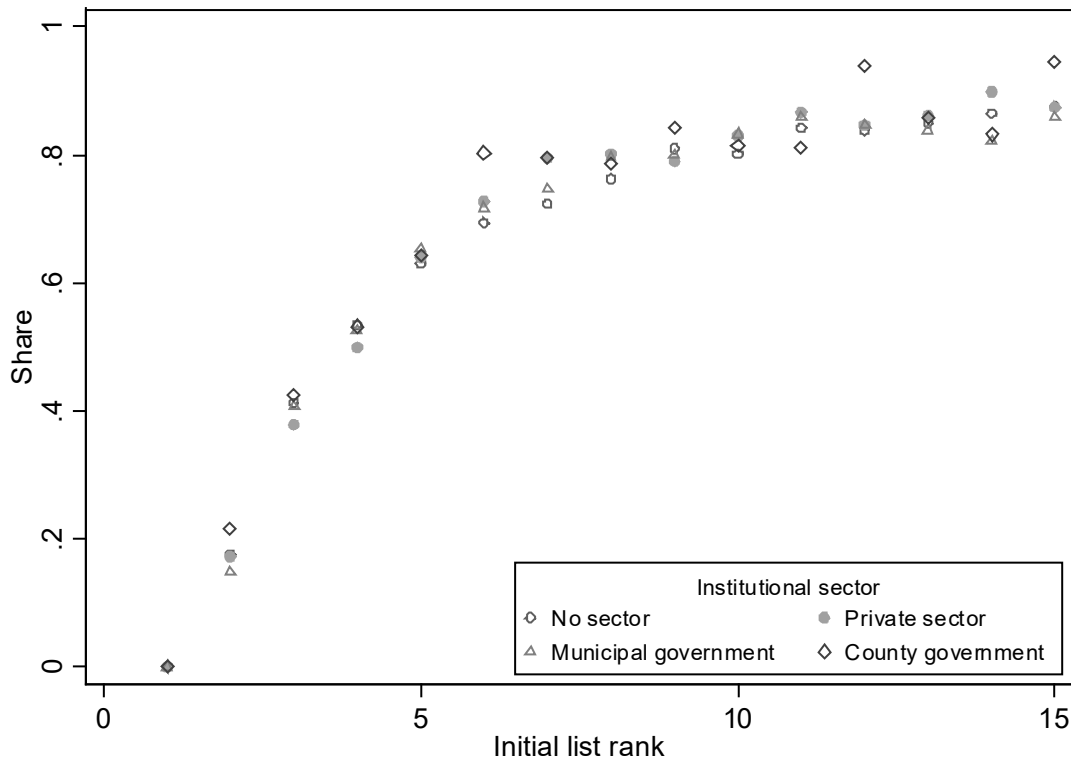
Notes. The diagram shows the extent of preferential voting conditional on initial list rank and sectoral work affiliation, using individual-level data on candidates for the municipal council elections over the period 2003-2015. The vertical axis indicates the share of elected municipal council members getting a lower (=better) list rank on the party ballot as consequence of preference votes. The plot indicates how preference voting varies with candidates' sectoral affiliation.

Figure B.4 The impact of public sector representation on public spending
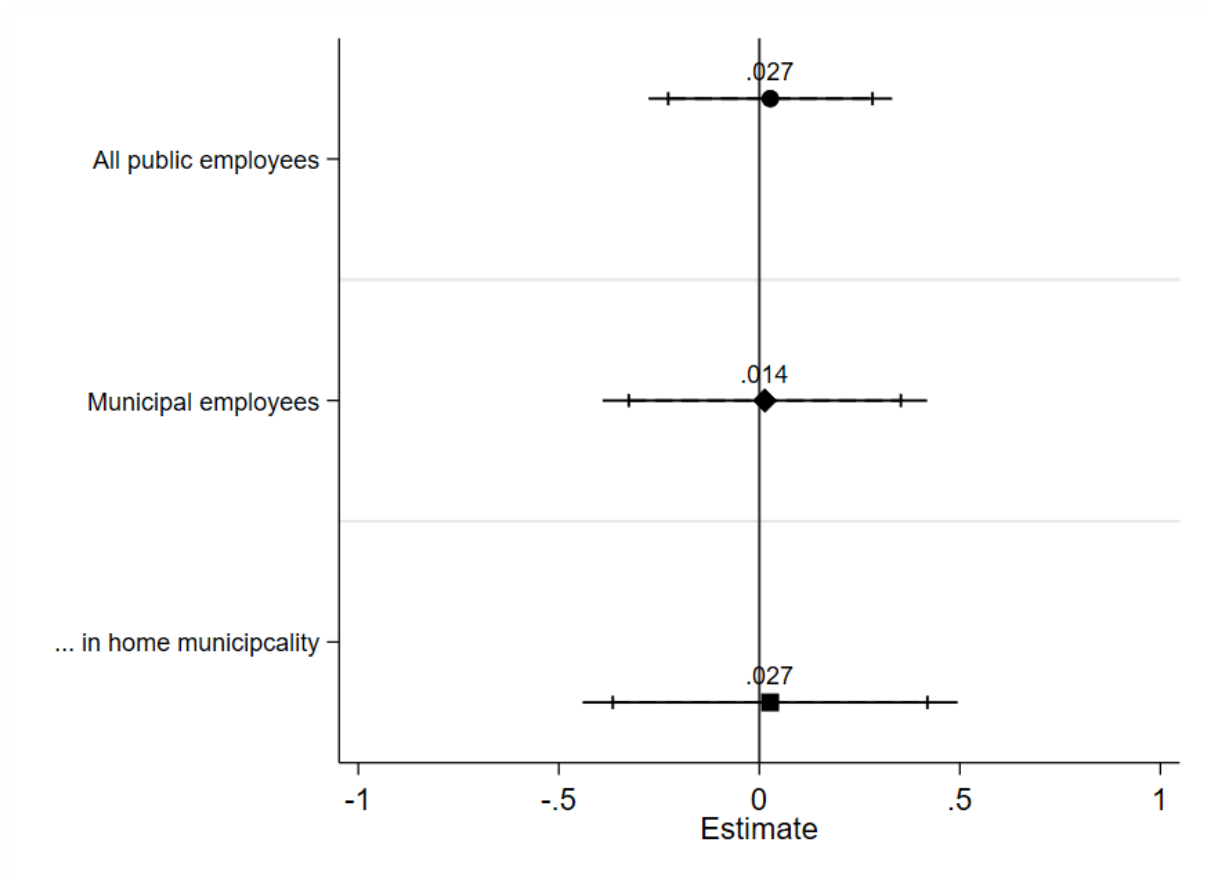
Notes. The diagram corresponding to Figure 2, with estimates generated with 20% win margins. The dependent variable equals total municipal expenditures per capita, measured on a log-scale. The main explanatory variable is the (instrumented) share of public employees in each municipality. This covers all public employees regardless of the level of government in the top panel, only municipal public employees in the middle panel, and only municipal public employees working and living in the residential municipality in the bottom panel. The model includes fixed effects for years and labor marked regions and has controls of the (average) win margin of marginal seats and share of marginal seats in the local council. We also display 90% and 95% confidence intervals around the point estimates.

Figure B.5. The impact of public sector representation on public sector wages and work-years
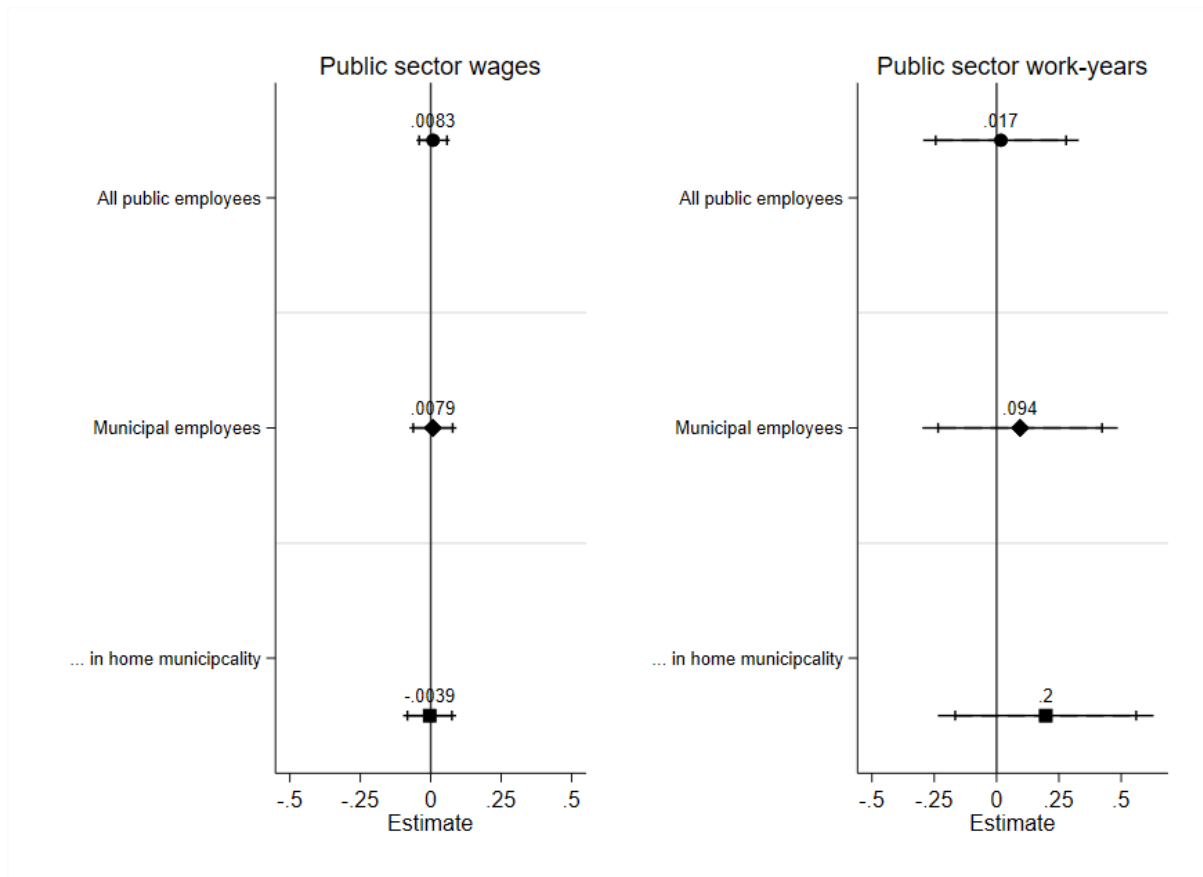
Notes. The diagram corresponding to Figure 3, with estimates generated with 20% win margins. The dependent variable equals the average wage level of local public employees (left-hand panel) and local public sector work-years (right-hand panel), both measured on log-scales. The main explanatory variable is the (instrumented) share of public employees in each municipality-party. This covers all public employees regardless of the level of government in the top panel, only municipal public employees in the middle panel, and only municipal public employees working and living in the residential municipality in the bottom panel. The model includes fixed effects for years and labor marked regions and has controls of the (average) win margin of marginal seats and share of marginal seats in the local council. We also display 90% and 95% confidence intervals around the point estimates.

Table B.0. Summary statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Municipality id (new)	6858	1230.829	726.77	101	5061
Municipality id (old, from LCD)	6858	1185.411	577.156	101	2030
Work municipality id (new)	6858	1230.829	726.77	101	5061
Labor market id	6858	46.043	25.703	1	90
County id	6858	12.024	7.235	1	50
Year	6858	2011.466	4.607	2004	2019
Election period id	6858	10.492	1.118	9	12
Years since last election	6858	2.497	1.118	1	4
Institutional sector	6847	3	0	3	3
Share of marg. elected candidates	6838	.096	.064	0	.353
Average win margin	6281	.024	.015	.001	.095
Municipal council size	6838	25.268	9.873	11	85
Share for female council members	6838	.371	.087	0	.684
Average age of council members	6838	47.203	2.802	36.5	58
Municipal population size	6858	11549.746	35122.151	196	681071
Seat share Labour Party	6838	.306	.131	0	1
Seat share Progress Party	6838	.103	.088	0	.5
Seat share Conservative Party	6838	.158	.114	0	.538
Seat share Chr. Dem. Party	6838	.065	.075	0	.5
Seat share other parties	6838	.002	.015	0	.231
Seat share Green Party	6838	.005	.015	0	.158
Seat share Red Party	6838	0	0	0	0
Seat share Coastal Party	6838	.004	.031	0	.5
Seat share Center Party	6838	.168	.143	0	1
Seat share Socialist Left Party	6838	.05	.059	0	.5
Seat share Liberal Party	6838	.048	.061	0	.5
Instr.: all employees	5144	.53	.414	0	1
Instr.: loc. gov. employees	4624	.523	.431	0	1
Instr.: loc. gov. emp. (mixed gender)	3453	.522	.46	0	1
Instr.: loc. gov. emp. (same gender)	2481	.526	.474	0	1
Instr.: loc. tov. emp. (work in res. mun.)	4221	.524	.438	0	1
Elected, all gov. emp.	6838	.417	.119	0	1
Elected, cen. gov. emp.	6838	.087	.075	0	.588
County gov. emp. in pop.	6834	.01	.006	0	.045
Elected loc. gov. emp.	6838	.294	.11	0	1
Elected loc.gov. emp. (work in res. mun.)	6838	.255	.112	0	1
All public sector emp. in pop.	6834	.182	.035	.106	.416
Central gov. emp. in pop.	6834	.04	.027	.003	.249
Municipal gov. emp. in pop.	6834	.132	.032	.069	.312
County gov. emp. in pop.	6834	.01	.006	0	.045
Mun. gov. emp. (work in res. mun.)	6834	.107	.034	.034	.287
Per capita loc.gov. spending	6427	80.301	26.107	38.907	316.117
Local gov. wage, mean	6847	331354.49	63460.429	202793.05	546856.22
Per capita loc. gov. work years	6854	.082	.024	.036	.221

Notes. The table shows descriptive statistics for the variables used in the municipality-level analyses.

Table B.1. Estimates corresponding to Figure 2. First stage and IV-regression results

	(1)	(2)	(3)
First-stage estimates:			
Instrumental variable	0.064***	0.052***	0.048***
	(0.007)	(0.007)	(0.007)
Share of marginal candidates	-0.097	-0.014	-0.061
	(0.060)	(0.056)	(0.060)
Average win margin	-0.258	0.362	0.277
	(0.209)	(0.226)	(0.247)
Second-stage estimates:			
Share of government employees	-0.120	-0.129	-0.093
	(0.187)	(0.242)	(0.263)
Share of marginal candidates	0.245*	0.278**	0.322**
	(0.101)	(0.105)	(0.115)
Average win margin	2.339***	2.716***	2.836***
	(0.361)	(0.416)	(0.428)
F-test for excluded instrument (DF)	77.6 (1, 462)	62.1 (1, 451)	50.0 (1, 440)
Prob > F	0.000	0.000	0.000
Year FE	Yes	Yes	Yes
Labor market region FE	Yes	Yes	Yes

Notes. The table displays first- and second-stage regression results corresponding to Figure 2. Column (1) shows estimates for total share of public sector employees, (2) shows the estimates for local government employees, and (3) for local government employees working in the residential municipality. The table includes fixed effects for years and labor marked regions and control variables. The standard errors are clustered on municipalities.

Table B.2. Estimates corresponding to Figure 3. IV regression results

	(1)	(2)	(3)
Wage levels:			
Share of government employees	-0.015	-0.015	-0.038
	(0.036)	(0.049)	(0.053)
Work years:			
Share of government employees	-0.086	0.065	0.176
	(0.183)	(0.225)	(0.242)
Year FE	Yes	Yes	Yes
Labor market region FE	Yes	Yes	Yes

Notes. The table IV estimates corresponding to Figure 3. Column (1) shows estimates for total share of public sector employees, (2) shows the estimates for local government employees, and (3) for local government employees working in the residential municipality. The table includes fixed effects for years and labor marked regions and control variables (share of marginal candidates, average win margin). The first-stage estimates are very similar to those presented in Table B.1. The standard errors are clustered on municipalities.

Table B.3. Balancing tests.

	(1)	(2)	(3)	(4)	(5)
			Instrumental variable:		
	All gov. employees	Local gov. employees	Mixed sex	Same sex	Residence adjusted
Female council members	0.576***	0.499***	0.758***	0.107	0.519***
	(0.154)	(0.167)	(0.192)	(0.260)	(0.178)
Age of council members	-0.002	-0.005	-0.007	0.002	-0.002
	(0.005)	(0.005)	(0.006)	(0.008)	(0.005)
Number of council members	-0.001	-0.001	-0.001	-0.003	-0.002
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Population size	-0.000	-0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Party seat shares:					
F-test statistic	0.740	0.839	0.693	0.805	0.467
Prob > F	0.673	0.580	0.716	0.612	0.896
Observations	1,294	1,163	869	624	1,061

Notes. The table shows regressions with the instrumental variable as response variable (column headings indicate types of instrumental variables). The analyses comprise data on all election years 2003–2015, conditional on municipalities having at least one marginal candidate elected. The analyses include share of female council members, the average age of council members, number of council members, municipal population size (in 10,000), and the seat shares of political parties. The Labor Party is reference category, and the models include the seat shares of the Progress Party, Conservative Party, Christian Peoples' Party, Green Party, Coastal Party, Center party, Socialist Left Party, Liberal Party, and other parties. We display an F-test statistic derived from a simultaneous F-test of zero effects of the party seat shares. The standard errors are robust standard errors clustered on municipalities in parentheses. Significance: *** p<0.01, ** p<0.05, * p<0.1

Table B.4. Comparison of same-sex and different-sex instruments to main results

	Different-sex instrument (1)		Same-sex instrument (2)		Instrument from main text (2)	
	First-stage	IV-estimates	First-stage	IV-estimates	First-stage	IV-estimates
Instrumental variable	0.048***		0.043***		0.052***	
	(0.007)		(0.008)		(0.007)	
Local government employees	-	-0.027	-	-0.294	-	-0.129
		(0.292)		(0.355)		(0.242)
F test of excluded instruments:	44.92		26.88		62.07	
DF	(1, 417)		(1, 368)		(1, 451)	
Number of obs.	3240		2336		4328	

Notes. The table displays first-stage and IV-estimates on per capita local government spending using three different version of our instrumental variable: one using close elections where women are competing against men (column (1)), one based on same-sex close elections (column (2)), and one that combines both types of close elections (as in the main text; column (3)). In each case, the model includes controls for shares of marginal candidates and year fixed effects. The standard errors are clustered on municipalities.

Table B.5. Comparison of full sample and sample restricted to smaller municipalities

	Restricted sample (<=23 council members)		Complete sample	
	First-stage estimate	IV-estimates	First-stage estimate	IV-estimates
Instrumental variable	0.061*** (0.010)		0.052*** (0.007)	
Local government employees	-	-0.262 (0.311)	-	-0.129 (0.242)
F test of excluded instruments:	35.1		62.07	
DF	(1, 248)		(1, 451)	
Number of obs.	2076		4328	

Notes. The table displays first-stage and IV-estimates on per capita local government spending. The model includes controls for shares of marginal candidates and year fixed effects. The standard errors are clustered on municipalities.