Political Alignment and Bureaucratic Pay*

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Abstract

Building on agency-theoretical perspectives of public bureaucracies, we argue that politician-bureaucrat preference alignment can have important implications for bureaucrats' pay. We study such private gains to bureaucrats from their political alignment with elected politicians using detailed data on *all* 1632 top administrators active in all Norwegian municipalities over a period of 25 years (1991-2015). Whereas existing studies generally rely on proxies for politician-bureaucrat political alignment, a rare feature of our data allows measuring it directly since 27% of top bureaucrats ran for political office. We focus explicitly on individuals at the very top of the administrative hierarchy, and are able to separate the intensive margin (i.e. wage increases) from any additional effects at the extensive margin (i.e. new appointments). Using close elections for inference in a regression discontinuity analysis, we find that politician-bureaucrat alignment significantly increases top bureaucrats' wage even in the Norwegian civil service system. This has important implications also from a theoretical perspective. Our results indeed go against predictions from models with policy-motivated bureaucrats, but are consistent with politically aligned principal-agent matches being more productive.

Keywords: Bureaucracy; civil service; remuneration; principal-agent; ally principle.

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1 Introduction

A well-functioning bureaucracy is important for efficient policy making. The complexity and range of policy issues facing political decision-makers requires the delegation of tasks and responsibilities to the civil service. In a Weberian perspective, civil servants are viewed as neutral agents performing tasks set by their political leadership independent of personal interests (Finer 1941; Weber 1978). This normative ideal is rarely achieved in reality, where substantial principal-agent problems may arise (Besley and Ghatak 2005; Ujhelyi 2014). As a result, politicians have incentives for selecting/retaining top civil servants better matching their own policy preferences to improve on inefficiencies related to task delegation. The resulting notion that "a boss prefers subordinates who resemble herself ideologically" is often referred to as the *ally principle* (Bendor, Glazer and Hammond 2001, p. 259; see also Huber and Shipan 2008; Dahlström and Holmgren 2019).

Such ideological influences on bureaucratic selection are central to the politicization of bureaucracy, and its potential implications have attracted substantial research in recent years (e.g. Gallo and Lewis 2012; Iyer and Mani 2012; Akhtari, Moreira and Trucco 2017; Bach and Veit 2018; Toral 2019; Colonnelli, Teso and Prem 2020).[1] This developing literature focuses predominantly on bureaucratic turnover and appointments as outcome variables. In contrast, we shift attention to the private financial implications for bureaucrats by analyzing whether and how politician-bureaucrat political (mis)alignment influences bureaucratic pay.[2] From theory, the effect of political alignment on bureaucratic pay is ambiguous. On the one hand, theories of *motivated agents* suggest that bureaucrats should obtain less generous pay when preferences are aligned. In the canonical Besley and Ghatak (2005) model, bureaucrats caring about policy outcomes accept

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[1]Closely related, Xu (2018) studies the promotion and incentives of socially connected senior bureaucrats within the Colonial Office of the British Empire (1854-1966). As proxies for connectedness he relies on genealogical and biographical data. Bertrand, Burgess and Xu (2018) argue that bureaucratic selection might also be influenced by individuals originating from particular localities. The social proximity arising from bureaucrats' work placement in their home district is shown to have important performance implications. The (mis-)alignment of political preferences at the heart of our analysis are conceptually different from such social connectedness.

[2]As such, our analysis adds to the literature on wage determination and differentials in public bureaucracies (Borjas 1980; 1984; Moore and Raisian 1987; Alkadry and Tower 2011).

a lower wage in equilibrium because they receive additional utility from policy outcomes that other agents do not obtain. On the other hand, politician-bureaucrat preference alignment may streamline communication and facilitate cooperation since people generally prefer to work with others similar to themselves (McPherson, Smith-Lovin and Cook 2001; Akerlof and Kranton 2005; Huber and Malhotra 2005). As a result, political appointments may be "an instrument for politicians to gain control over policy and implementation" (Toral 2019, p.40, see also Peters and Pierre 2004; Kopecky et al. 2016). This suggests that preference alignment can increase the *productivity* of the politician-bureaucrat match, which would lead such bureaucrats to receive more generous pay.

Reliable empirical tests of these opposing theoretical predictions are hard to achieve because agency preferences are difficult to measure. Several recent papers exploit shifts in government as a source of variation in politician-bureaucrat preference (mis)alignment (Boyne et al. 2010; Iyer and Mani 2012; Christensen, Klemmensen and Opstrup 2014; Akhtari, Moreira and Trucco 2017; Xu 2018; Dahlström and Holmgren 2019).Yet, most of this literature lacks direct measurement of bureaucrats' preferences, and rests on the dubious assumption that politician-bureaucrat preference alignment falls with a shift in government (as acknowledged by Christensen, Klemmensen and Opstrup 2014; Dahlström and Holmgren 2019). As such, it may lead to biased inferences.

In this paper, we rely on rich administrative data to develop a direct measure for the political leaning of top bureaucrats in Norwegian local politics. The key political decision-making body in Norwegian local governments is a directly elected municipal council, which has the mayor formally at its head. The implementation of public policies adopted by the council and conformity to legal requirements imposed by higher levels of government is the responsibility of the 'Chief Municipal Officer' (the top administrative position in Norwegian local government; henceforth CMO). While the political leaning of the council and mayor is reflected in their partisan attachment, we match the names of all individuals serving as CMO between 1991 and 2015 to candidate lists presented in local elections since 2003, regional elections since 1975 and national elections since 1961.

Roughly 27% of CMOs ran for political office, often in low-ranked positions on local or regional election lists. This clearly signposts their political color and provides a direct measure for their partisan identity – as well as its (mis)alignment with the political leaning of the ruling government(s) during the CMO's time in office. Our direct measure offers a clear improvement over the imperfect proxies of earlier studies, and allows analyzing the private financial implications of politician-bureaucrat preference (mis)alignment.

Colonnelli, Teso and Prem (2020) use an approach closely related to ours by looking at election candidates and campaign donors, which they refer to as a party's "elite" supporters.[3] They find that individuals donating to, or featuring on the election list of, the winning party are more likely to become employed in the public sector, and thereby witness a significant jump in total as well as labor market earnings. Brassiolo, Estrada and Fajardo (2020) find similar results in the context of Ecuador. Our analysis differs from these papers in three main ways. First, we study administrators at the very top of the administrative hierarchy, which hold substantial executive powers. Second, we analyze the effects of political alignment in a working relationship between an incumbent top-bureaucrat and the political leadership, which allows separating the intensive margin (i.e. pay increases) from any additional effects at the extensive margin (i.e. new appointments). The latter are shown to be very significant in previous work, and thereby obscure our understanding of pure wage effects. Finally, the World Bank's "World Governance Indicators" place our Norwegian case near the top on quality of governance, compared to Brazil's position around the median, and Ecuador's position in the bottom half, in terms of 'rule of law', 'regularity quality' and 'government effectiveness'.

For causal inference, we implement a regression discontinuity (RD) design that isolates the consequences of *council-bureaucrat preference alignment.* This RD design exploits that – within Norway's two-bloc party system – the local council seat majority is as-good-as-randomly assigned for municipalities where each bloc receives around 50% of the seats (Fiva, Folke and Sørensen 2018). We document a positive effect of council-bureaucrat

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[3]Brollo, Forquesato and Gozzi (2017) and Barbosa and Ferreira (2019) use registered party members and look exclusively at the employment effects of partisan alignment rather than pay.

political alignment on wage growth, which appears to increase throughout the election period. Over the four-year election period when the majority of the municipal council and the CMO are politically aligned, CMO wages increase with approximately three percentage points relative to unaligned CMOs (who achieve a baseline wage growth of 12%). The result is robust across different specifications of the model as well as for distinct delineations of the estimation sample. This finding goes against the conventional wisdom from principal-agent models with policy-motivated agents, but is consistent with politically aligned matches being more productive.

Additional tests substantiate that productivity may be a key mechanism behind our results. First, although less precisely estimated, we find some evidence that more budgetary decision-making powers are delegated to CMO's who are politically aligned with the council majority. These effects are in line with a productivity channel since increased delegation allows politicians to extend control over public policies mainly if alignment benefits productivity. In the absence of productivity improvements in aligned council-bureaucrat matches, increased delegation would not achieve any policy benefits (relative to unaligned matches). Second, we show that election candidates of the winning party bloc, on average, do *not* experience a jump in income after elections. This suggest that political favoritism of the type documented for Brazil (Colonnelli, Teso and Prem 2020), is not widespread in Norway, and is unlikely to drive our findings.

In the next section, we set out the theoretical framework for our analysis and derive a number of hypotheses about the role and impact of preference-matching between politicians and bureaucrats. Then, we discuss the Norwegian institutional setting and our data, before turning to our empirical strategy and main findings. Next we analyze delegation of tasks for CMOs and income effects for election candidates. The final section provides a concluding discussion.

2 Theory

In modern agency-theoretical perspectives on public bureaucracies, central attention is awarded to the tension between politicians as principals and bureaucrats as agents in the development and implementation of public policies. Agency theory is concerned with the problems and inefficiencies related to task delegation (Holmström 1979; Holmström and Milgrom 1987), and suggests that preference alignment between politician-principals and bureaucrat-agents often improves on such inefficiencies (Lazear 2000; Bendor, Glazer and Hammond 2001). As a consequence, political shifts in elected assemblies resulting in changes to the politician-bureaucrat alignment status have been argued to induce important implications for bureaucratic turnover and/or discretion (e.g. Gallo and Lewis 2012; Iyer and Mani 2012; Akhtari, Moreira and Trucco 2017; Bach and Veit 2018; Toral 2019; Colonnelli, Teso and Prem 2020).

We argue that politician-bureaucrat preference alignment can also have implications for bureaucrats' pay. The direction and size of this effect depends on the relative role and importance of three underlying mechanisms. To preserve space, this section briefly describes each of these mechanisms in words, and highlights their predictions regarding the effect of alignment on bureaucratic pay. In Appendix A, we develop these arguments more formally by setting up a principal-agent model. Based on the results of this model, we also formulate more explicit hypotheses. We should note, however, that the model works through an incentive payment scheme, while our empirical setting is characterized by the absence of one-off bonus payments (see below). The model thus provides an imperfect analogy in our setting. Although the model can therefore only give us a sense of expected pay *levels* under different conditions (rather than accurately predict the precise form of individual-level compensation), it still helps to provide additional clarity on the role and impact of the diverse potential mechanisms.

First, bureaucrats in politically aligned matches may become so-called motivated agents (in the sense of Besley and Ghatak 2005). Such motivated agents sharing the

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ideology of the ruling politicians have a stake in the policy outcomes of the jurisdiction. This strengthens their intrinsic policy motivation compared to other, non-aligned bureaucrats. Consequently, this mechanism works to pull *down* aligned bureaucrats' pay as they in equilibrium exert greater work effort for a given incentive structure to realize political goals (Bénabou and Tirole 2003; 2006; Rattsø and Stokke 2019). In other words, aligned agents are in equilibrium willing to accept lower pay because they receive some additional utility from achieved policy outcomes that is not obtained by non-aligned agents.[4]

Second, politician-bureaucrat preference alignment may improve the productivity of a match. This could stem from the fact that people prefer to associate – both inside and outside the work environment – with others similar to themselves (McPherson, Smith-Lovin and Cook 2001; Akerlof and Kranton 2005; Huber and Malhotra 2005). Consequently, politician-bureaucrat preference alignment may improve on productivity by streamlining communication and facilitating cooperation between the principal and an agent. This line of argument is also consistent with scholarship maintaining that politicians view political appointments as a means to extend control over policy decisions (Peters and Pierre 2004; Kopecky et al. 2016; Toral 2019). Because the principal will want to more strongly incentivize aligned bureaucrats due to their productivity compared to other non-aligned bureaucrats, this mechanism works to push *up* bureaucrats' pay.

Finally, favoritism and cronyism may also boost bureaucrats' pay in politically aligned matches. That is, elected politicians might financially benefit fellow party members by virtue of their partisan connection. Such favors could also be extended for past services by fellow partisans, or in expectation of favors to be paid back another time. It should be noted, however, that such favoritism implies awarding pecuniary rents to aligned bureaucrats regardless of their skills and/or qualifications in implementing policy. When

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[4]This point relates to the rich literature on public service motivation (PSM). The key proposition is that people seeking employment in the government sector are attracted by the values inherent in public institutions; they want to serve the public good and the population in general. Job selection should therefore lead to a "fit" of organizational goals and employee values (Harari et al. 2017). Clearly, civil servants may be well matched with the overall values of the organization, while at the same time being mismatched with the specific goals of particular politicians. We therefore analyze preference correspondence of politicians and bureaucrats.

the underlying mechanism is favoritism, politicians thus obtain little incentive to delegate decision-making powers to aligned bureaucrats. Doing so would bring no benefits to politicians in terms of increased control over policy outcomes. This stands in sharp contrast to the situation where alignment improves the productivity of the politician-bureaucrat match. In that case, politicians obtain incentives to delegate decision-making powers to aligned bureaucrats in order to benefit from their higher productivity (Lazear 2000; Bendor, Glazer and Hammond 2001).

The discussion above highlights that, depending on the underlying mechanism(s), bureaucratic alignment may either increase or decrease bureaucratic pay. In the remainder of this article, we provide empirical tests of these opposing theoretical predictions.

3   Institutional setting and data

3.1   Norwegian local governments

Norway has three levels of government: the local level with 428 municipalities (at the time of our analysis), the regional level and the national level. Our analysis deals exclusively with the municipal level of government. Municipalities have extensive regulatory responsibilities, and are central to the implementation of a range of social welfare services (including primary and lower secondary education, primary health care, elderly care and several infrastructure services) (Geys and Sørensen 2018). Overall, Norwegian municipalities are an important part of the economy as they take spending decisions that account for roughly 15% of GDP, with employment in the local government sector comprising about 19% of total employment.

Local elections (for county and municipal governments) are held every fourth year in September using an open-list proportional representation (PR) system. The local council has full responsibility for all aspects of the municipality's activity, and consists of 11 to 85 members depending on the size of the municipal population (the median is 25). It elects both a mayor (who chairs council meetings) and an executive board of minimum five

members (which is responsible for the day-to-day running of the municipality). Unlike in a parliamentary system, the council – and not the executive board – is the key decision-making body, and councillors thus hold significant decision-making authority (Fiva, Folke and Sørensen 2018). As a result, holding a majority position in the municipal council is crucial for parties' ability to determine local public policies (which we exploit in our analysis below). The central political cleavage in Norwegian politics – at the national as well as the local level – thereby lies between a left-leaning socialist bloc and a right-leaning conservative camp.

3.2 The chief municipal officer

The CMO constitutes the top administrative position in Norwegian municipalities. The position is regulated by the Norwegian Local Government Act (*Kommuneloven*), which specifies that CMOs are responsible for *i)* the implementation of all policies adopted by the municipal council, *ii)* ensuring the municipality conforms to legal requirements imposed by higher levels of government, and *iii)* preparing the budget proposal together with the municipality's executive board. CMOs are thereby often delegated considerable decision-making powers, especially with respect to the budgetary process, the organization of the local administration and local wage negotiations. In the execution of her tasks, the CMO is entitled to be present and speak in all local elected bodies, with the sole exception of the municipal control committee. As such, the CMO is comparable to the 'Permanent Secretary' at the head of each ministry in the UK civil service, or the 'Deputy Secretary' in the US.

Importantly, the law specifies that CMOs are hired by the municipal council following a public hiring process. This means that the local council (not the mayor) is responsible for appointing and dismissing the CMO. Legislation allows local governments to offer fixed-term positions with a duration of at least six years, but in about 80% of the municipalities CMOs in practice work under labor contracts with permanent positions. It is common for local governments to set up leadership contracts with their CMO, which

in broad terms describe the key objectives of the local authority. A special committee appointed by the executive board assesses CMO performance on either an annual or biennial basis, and economic results act as a major evaluation criterion in these assessments (Geys, Heggedal and Sørensen 2017).[5] Although the results of these assessments are not made public, they are used to determine salary increases as well as the continuation of CMOs' employment relation. Local governments thereby enjoy substantial discretion to regulate CMO compensation. The collective wage agreement from the Norwegian Association of Local and Regional Authorities, for instance, explicitly states that the wages for CMOs and other municipal leaders are set locally (Kommunesektoren 2018). Formally, the municipal council decides the wage contract for the CMO at the time of hiring as well as any subsequent revisions. Although the council can delegate this task to the executive board or a specific committee, formal approval of the final wage agreement remains with the council. This local-level autonomy and wage flexibility leads to considerable variation in CMOs' compensation packages across municipalities (see below).

Although most CMOs have permanent contracts, in reality they enjoy less dismissal protection than standard legal entitlements in the Working Environment Act (*Arbeidsmiljøloven*). This limited protection has been justified by their position as a role model for other employees and the need for trust in these executives. In practice, it implies that the municipal council is free to initiate measures to oust the CMO. Such conflicts are not uncommon. For example, municipal councils have been found to adopt no-confidence motions against the CMO, even though no such procedure is formally described in the Local Government Act. These clashes often culminate in the CMO leaving her position – either more or less voluntarily – with a compensation package. Furthermore, a provision from 2004 in the Working Environment Act states that senior executives with a severance pay agreement – such as CMOs – are exempt from the employment protection rules,

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[5]Maintaining desirable budgetary outcomes is particularly important in CMOs' evaluation, since municipalities are by law required to keep the books balanced (failing to do so can invoke central government control over the municipality's major fiscal decisions). Other assessment criteria typically include the exercise of leadership and implementation of government goals, the development of the municipal organization, as well as user and employee satisfaction – as measured via local surveys.

which made it even easier for the local political elite to oust CMOs. By signing a contract including provisions for severance pay, CMOs thus formally renounce the standard legal entitlements to dismissal protection.

3.3 Data

Our complete dataset covers all 1632 CMOs active in all Norwegian municipalities over a period of 25 years (1991-2015), and brings together information from four main data sources. We discuss the key information and variables extracted from each of these in turn (further details in Appendix C).

The *Norwegian Association of Local and Regional Authorities* registers the name and wages (among other things) of the CMO employed in each municipality on December 1st of every year. This annual information allows us to characterize the complete set and length of employment spells for all CMOs over time, as well as how their wage develops over time (see Appendix C.1). These data provide our central dependent variable – *Municipalities' CMO wage.*

To measure CMOs' political leaning, we match their full names, birth years and residential municipalities to candidate lists presented in local elections 2003-2019 (mayors 1971-2019), regional elections 1975-2019 and national elections 1961-2017 (see Appendix C.2). This exploits the idea that running for office on a specific party list signposts one's political color and partisan identity. Approximately 27% of CMOs in our sample (i.e. 446 out of 1632) have run for political office, most often in local or regional elections (see Appendix Figure B.1). This is consistent with data from the Norwegian Local Election Survey showing that 20-25% of individuals in the general population aged around 50 years have stood for local office (Appendix Figure B.2). For our central explanatory variable, we create a dummy variable for council-bureaucrat ideological alignment – *Aligned* – equal to 1 when the CMO and the council majority belong to the same political bloc, and 0 otherwise. This operationalization does not negate that there is likely to exist heterogeneity in policy preferences across members of the same party. Yet, our argument

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merely requires that politicians are more similar along relevant preference dimensions within parties than across parties, which has been well-established in a vast theoretical and empirical literature (Snyder and Ting 2002; Geys and Vermeir 2014).

In our sample of CMOs with a partisan identity, measurement of this political leaning is based on party affiliations observed before their CMO spell in 254 cases (out of 446). For the remaining cases, data restrictions unfortunately force us to rely on party affiliations observed only after their CMO spell.[6] Naturally, using information on CMOs' political affiliation after their spell in office may be circumspect *unless* individuals' attachment to a given political bloc is stable over time. When political attachments are stable, the exact timing of identifying a political leaning becomes less relevant since the identified leaning at time t-x or t+x will then also be valid at time t. Hence, to assuage concerns induced by the timing of our measurement – and support the validity of our operationalization of partisan alignment – we investigated the stability of political affiliations in Norway in two ways.

First, our sample includes 56 CMOs for whom we observe their party affiliation both before and after their CMO spell. Table 1 documents their party affiliation in the last election before becoming a CMO and the first election after being a CMO. We find six cases (out of 56) where a CMO switched party around the time of her CMO spell. Yet, five of these changes are to an ideologically close party and do not involve a change of party bloc, which is the critical switch in our setting. While not included in the table, we also found one additional case where the CMO initially stood for election for the same party after the spell in office, but then switched party bloc eight years (or two election rounds) later. We removed both these temporally unstable cases from our sample (leaving us with 444 CMOs for our analysis).

Second, we more generally studied changes over time in *all* election candidates' party and party bloc affiliations from one election to any subsequent elections. Appendix Figure B.3 looks at the roughly 56,000 local election candidates running in 2003 (the first year

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[6]This in part reflects our lack of data on local election lists prior to 2003, which prevents us from observing CMOs' potential local political activity during the 1970s, 1980s or 1990s.

Table 1: Party affiliation before and after serving as CMO

		PARTY AFTER							
		SV	AP	SP	V	KRF	H	FRP	Other
	SV	5	1	0	0	0	0	0	0
	AP	0	18	0	1	0	0	0	0
	SP	0	0	5	0	0	0	0	0
	V	0	0	1	4	0	0	0	1
PARTY BEFORE	KRF	0	0	0	0	2	0	0	0
	H	0	0	0	0	0	9	0	0
	FRP	0	0	0	0	0	0	1	0
	Other	0	1	0	0	0	0	1	6

Note: This table shows, for the sample of CMOs we observe running for office before and after their CMO spell (N=56), the party affiliation in the last election before and first election after their CMO spell. The main parties – the Socialist Left Party (SV), the Labor Party (AP), the Center Party (SP), the Christian Peoples' Party (KRF), the Liberal Party (V), the Conservative Party (H), and the Progress Party (FRP) – are sorted along the left-right political dimension in the table. The 'other' category includes various minor parties and party-independent local lists. The diagonal represents cases where the party affiliation is stable. Note that SV and AP belong to the left bloc, while the other parties belong to the right bloc. Hence, only the switch from AP to V in the table reflects a change of party bloc.

where our data include the universe of local election candidates). It shows that only 2.8% of the candidates running for one of the seven main parties in 2003 switched to another main party during any of the local and national elections up to and including 2019 (i.e. eight elections). The majority of these changes are again between ideologically close parties, and do not involve a shift in party bloc. The cumulative frequency of party bloc changes lies well below 0.5% in the first two elections after 2003, and only barely surpasses 1% after 16 years. This result is consistent with recent evidence indicating that party switching is extremely rare among politicians at both national and local levels in Norway (O'Brien and Shomer 2013; Cirone, Fiva and Cox 2020). Such stability of political attachments over time implies that our proxy for partisan affiliation at the time of CMOs' spell in office is not severely biased by using information from the period after they left office for some CMOs. This allows us to include in our sample all CMOs with an identified political leaning.

Data on the delegation of budgetary powers and responsibilities to CMOs is extracted from the Norwegian government's "Local government organizational database". The data

were originally collected using surveys sent to local authorities, which included a question addressing the three-fold typology of budgetary delegation by Hagen and Vabo (2005): i.e. budget process controlled by the executive board, budget process controlled by the CMO, and the 'bottom up' procedure (which involves a strong role for the CMO as well as municipal agencies and political committees) (see Appendix C.3). Delegation to the CMO in our analysis is set to 1 when the municipality employs either the 'bottom up' process or a budget process controlled by the CMO, and 0 otherwise.

Finally, we have access to administrative register data of Statistics Norway covering individual-level income records. This data is available over the period 2007-2014 for all candidates standing for Norwegian local council elections in 2007 and 2011. As such, we can measure these individuals' change in income relative to the election year over the subsequent election period(s) (see Appendix C.4).

3.4 Descriptives

Table 2 presents descriptive statistics about CMOs' background characteristics.[7] We separate between the 444 CMOs for whom we could establish their partisan identity (column (1)) and the 1186 CMOs for whom we lack partisan information (column (2)). Column (3) assesses the representativeness of the former subset. The table indicates that during their first spell CMOs are on average in office for just under five years (and most complete just one spell in office). They are predominantly male (82%), highly educated (16 years of education), tend to obtain their first CMO position aged 47-48 years, and earn an annual gross base salary of roughly 560,000 NOK during their first year in office (in real terms with base year 2011; circa $100,000 at December 2011 exchange rates). As can be seen in Appendix Figure B.4, there is substantial variation across CMOs in this annual gross base salary. This reflects the extensive flexibility of the municipalities in

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[7]Municipalities that have implemented parliamentarism are excluded after they implemented this system (Oslo in all years, Bergen from 2000, and Tromsø from 2011).

setting these wages.[8]

Interestingly, CMOs with an observable political leaning are equally likely to be aligned with the council majority at the onset and end of their first spell in office (62%). Overall, 43% of CMOs are aligned with the left-wing bloc (most often with the Labor Party). Finally, Column (3) indicates that CMOs with an observable political leaning tend to be slightly older and less educated when receiving their first CMO appointment, earn slightly less atthe onset of their first CMO spell, and are marginally less likely to complete multiple CMO spells. They are also more likely to work in smaller municipalities located further north within Norway with a (marginally) higher share of elderly. All other background characteristics of CMOs and the municipalities employing them – including the partisan affiliation of the mayor and council majority bloc in the CMOs' municipality – are balanced. This provides support for the representative nature of the subset of CMOs (and CMO spells) with observable partisan identities.

4   Close elections for inference

Our identification strategy builds on the idea that, conditional on agents' actions and characteristics as of election day, the winner of a closely contested election would be determined as if by the flip of a coin if there exists a random chance element in elections (Lee 2008). In PR systems, where seats are allocated to parties based on their individual vote shares, it is not obvious how one should measure electoral closeness, nor how electoral RD designs should be implemented. One possibility would be to construct forcing variables based on *party bloc seat shares.* However, this introduces a number of pitfalls, which are discussed in detail by Fiva, Folke and Sørensen (2018). Most importantly,

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[8]Such flexibility is *not* unique to our setting. In fact, most OECD countries and European Union member states allow for some degree of wage setting flexibility in the public sector. This holds particularly, but not exclusively, for senior civil servants working under widely implemented systems of performance-related pay OECD (2005). In practice, public sector pay systems at all levels of the bureaucracy usually specify a wage *range* for each job position, which allows accommodating individual-level characteristics such as competences, seniority and performance (Mikkelsen, Stevove and Dleskova 2017). The wage flexibility observed in our empirical setting thus is fairly common, which benefits the generalizability of our findings to other bureaucratic positions and settings.

Table 2: Summary statistics on CMO background (first spell)

	(1) With party affiliation Mean	SD	(2) No party affiliation Mean	SD	(3) Difference Est.	SE
CMO-specific variables						
First year as CMO	2000.827	(8.380)	2000.391	(8.433)	-0.435	(0.468)
Age first year	48.133	(8.240)	46.559	(7.665)	-1.574	(0.435)
Female CMO share	0.178	(0.383)	0.193	(0.395)	0.015	(0.022)
Years of education	16.171	(2.009)	16.418	(1.806)	0.247	(0.108)
Wage (in 1000 NOK)	549.827	(158.621)	566.172	(175.428)	16.345	(9.515)
Delegation	0.810	(0.393)	0.814	(0.390)	0.004	(0.029)
Delegation (interpolated)	0.771	(0.421)	0.793	(0.405)	0.022	(0.025)
Spell duration	4.673	(4.960)	4.938	(5.361)	0.264	(0.292)
Total nr of spells	1.169	(0.476)	1.247	(0.579)	0.078	(0.031)
Aligned at start of spell	0.628	(0.484)				
Aligned at end of spell	0.623	(0.485)				
Left-wing CMO	0.430	(0.496)				
Municipal-specific variables						
Left-wing mayor	0.385	(0.487)	0.416	(0.493)	0.032	(0.027)
Left-wing seat share	0.385	(0.158)	0.383	(0.149)	-0.002	(0.008)
Election year	1998.036	(8.802)	1997.506	(8.805)	-0.530	(0.490)
Population (log)	8.157	(1.062)	8.434	(1.096)	0.277	(0.060)
Share of children	0.078	(0.017)	0.079	(0.016)	0.001	(0.001)
Share of young	0.122	(0.019)	0.123	(0.019)	0.002	(0.001)
Share of elderly	0.174	(0.036)	0.168	(0.039)	-0.006	(0.002)
Share of women	0.495	(0.012)	0.495	(0.011)	0.001	(0.001)
Unemployment rate	0.028	(0.014)	0.027	(0.013)	-0.001	(0.001)
Latitude	63.270	(3.825)	62.549	(3.582)	-0.721	(0.204)
Longitude	11.411	(5.394)	10.933	(4.984)	-0.478	(0.284)
CMO party affiliation						
Left-wing affiliation						
Red Electoral Alliance (RV)	0.016	(0.125)				
Socialist Left Party (SV)	0.079	(0.270)				
Labor Party (AP)	0.329	(0.470)				
Other left-wing parties	0.007	(0.082)				
Right-wing affiliation						
Liberal Party (V)	0.095	(0.293)				
Center Party (SP)	0.122	(0.327)				
Christian Dem. Party (KRF)	0.045	(0.208)				
Conservative Party (H)	0.187	(0.390)				
Progress Party (FRP)	0.043	(0.203)				
Other right-wing parties	0.079	(0.270)				
N	444		1186		1630	

Notes: The table includes only one observation per CMO, with all variables evaluated at the first year of their first spell in office (except alignment status at the end of the CMO's first spell). *Spell duration* is measured in years, while *Wage* is the real annual gross salary (in 2011 NOK). *Aligned* at start/end of a CMO spell is an indicator variable equal to 1 if the CMO's political loyalty matches that of the council majority at start/end of his/her spell (0 otherwise). *Left-wing CMO* equals 1 if the CMO's party affiliation corresponds to the left-wing bloc. *Left-wing mayor* is an indicator variable equal to 1 when the mayor is from a party in the left-wing bloc (0 otherwise), while *Left-wing seat share* is the combined seat share of left-wing parties in the municipal council. Finally, *Election year* is the year of the last municipal election. The bottom panel specifies the party affiliation of the CMO.

the density of observations mechanically falls as we approach the threshold for a council majority change. In the top-left panel of Figure 1, we illustrate this point by plotting the frequency of observations as a function of the left-wing seat share. Naturally, with a median council size of about 25, few observations are less than one percentage point away from crossing the 50% threshold in seat shares.

To accommodate this concern, our RD analyses follow the simulation-based procedure proposed by Fiva, Folke and Sørensen (2018). This method has been adapted to other countries using proportional representation electoral systems, such as Germany (Baskaran and Hessami 2017), Sweden (Folke, Persson and Rickne 2017), and Spain (Curto-Grau, Solé-Ollé and Sorribas-Navarro 2018; Carozzi and Repetto 2019). For each municipality-year observation, we identify the minimum vote share change that would flip the seat majority from the left-wing bloc to the right-wing bloc in at least half of the simulations. In the following, we refer to this variable as the *left-wing win margin*.[9] The top-right panel of Figure 1 plots the frequency of observations as a function of this variable. The density of observations is smooth across the cut-off for a majority change.[10]

Before moving to a discussion of our analysis, the left panel of Figure 2 highlights that crossing the threshold for winning a majority of seats (i.e. left-wing win margin > 0) by construction always leads to a change in majority. This buttresses our sharp RD design below. The right panel of Figure 2 furthermore verifies that when the left-wing bloc wins a majority (i.e. left-wing win margin > 0), the mayor is more likely to be from the left-wing bloc (and vice versa). The probability of having a mayor from the left-wing bloc jumps with about 40 percentage points at the cut-off. Unreported results show a similar (and substantively stronger) effect for the deputy mayor, which further confirms

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[9]In the Norwegian electoral system, voters affect the election outcome by voting for a party list and by casting preferential votes for particular candidates. Preferential votes can be cast for candidates on *any* party list. If ballots include "side votes" for other parties, then party vote shares are transferred accordingly before seats are allocated (for more details, see Fiva and Røhr 2018). Ideally, for constructing the forcing variable, we would like to use party vote shares after such transfers have been taken into account. Unfortunately, we do not have such data available for all sample years. We therefore rely on party vote shares ignoring preferential votes (*'partistemmer'*).

[10]Formal tests provide no evidence of a discontinuity in the density of observations at the cut-off. Using the `rddensity` module of Stata, the p-values using the *incumbent win margin* and the *CMO bloc win margin* are 0.28 and 0.34, respectively (Cattaneo, Jansson and Ma 2018).

Figure 1: Frequency of observations by alternative forcing variables
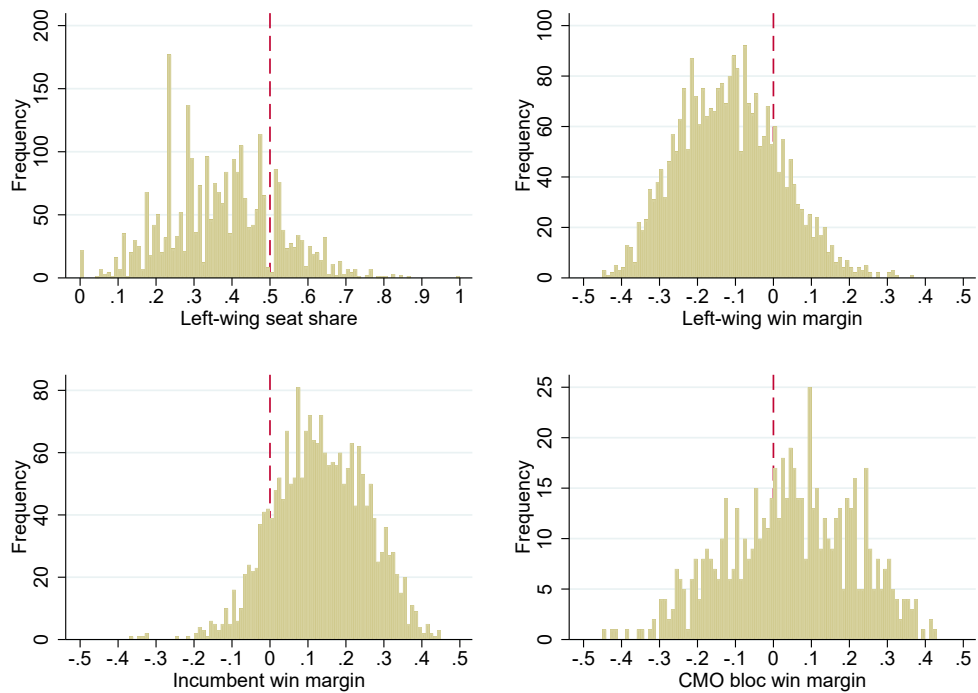
Note: The figure shows the number of observations by the left-wing seat share (top-left panel), the left-wing win margin (top-right panel), incumbent win margin (bottom-left panel), and CMO bloc win margin (bottom-right panel). Each bin is for an interval of one percentage point.

the substantial shift in political power at the threshold.[11]

Figure 2: Bloc majority affect the choice of mayor
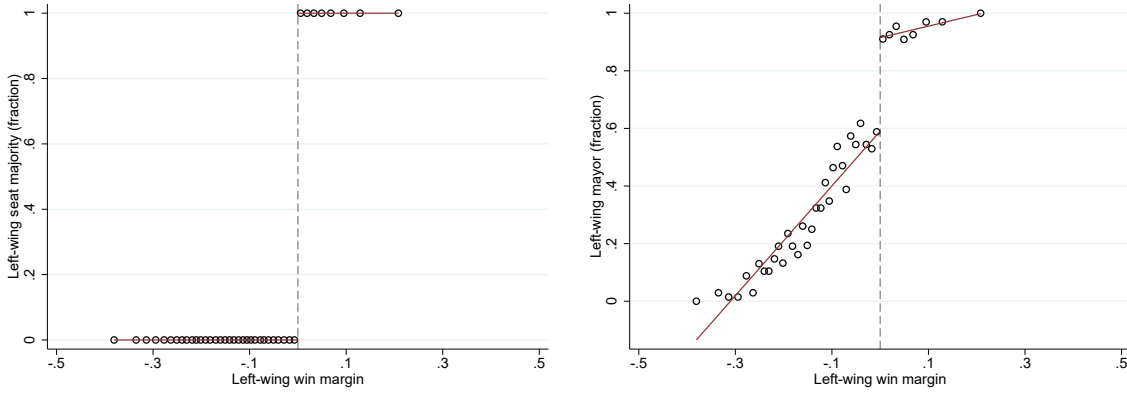
Note: The vertical axis in the left-hand panel measures the probability of having a left-wing seat majority by the left-wing win margin. By construction, there is a jump from zero to one at the cut-off. The vertical axis in the right-hand panel measures the probability of having a left-wing mayor by the left-wing win margin. Norway's multi-party system explains why we do not see "full compliance" in this panel, but rather a jump of about 0.4 at the cut-off.

We use the *left-wing win margin* to calculate the win margin of the political bloc that matches the political affiliation of the CMO in office *before* the relevant election. The CMO bloc win margin ($Margin_i$), which is only defined for the sample of bureaucrats that have a background in politics, is displayed in the bottom-right panel of Figure 1.[12] Based on this forcing variable, we implement a sharp RD design that isolates as-good-as-random variation in council-CMO alignment. This explicitly evaluates the causal effect of *political alignment between politicians and bureaucrats*, and thus assesses our main hypotheses derived in section 2. The forcing variable is the margin of victory for the bloc

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[11]The multi-party system explains why we do not see "full compliance" at the cut-offs in Figure 2. While the left-wing bloc is dominated by the *Labor Party*, the right-wing bloc is more fragmented. When the left-wing bloc holds the seat majority (i.e. to the right of the cut-off in Figure 2), the *Labor Party* holds the mayor in 91% of cases, other left-wing lists hold the mayor in 4% of cases, while right-wing lists hold the mayor in the remaining 5% of cases. When the right-wing bloc holds the seat majority (i.e. to the left of the cut-off in Figure 2), the *Center Party* holds the mayor in 29% of cases, the *Conservatives* hold the mayor in 22% of cases, other right-wing lists hold the mayor in 21% of cases, while left-wing lists (almost always the *Labor Party*) hold the mayor in the remaining 28% of cases.

[12]For comparison, the bottom-left panel of Figure 1 shows the win margin of the incumbent political majority *before* the relevant election, which has been used as a source of exogenous variation due to political turnover in, for instance, (Boyne et al. 2010; Iyer and Mani 2012; Christensen, Klemmensen and Opstrup 2014; Akhtari, Moreira and Trucco 2017; Dahlström and Holmgren 2019; Xu 2018). We use this alternative forcing variable to look at the impact changing the council majority on bureaucratic pay and turnover in Appendix D.

of the CMO in office before the election ($Margin_i$). More specifically, this is the margin of victory of the left-wing (right-wing) bloc for CMO's of left-wing (right-wing) partisan leaning. More formally, we estimate:

$$Y_i^t = \alpha + \beta Aligned_i + \gamma_1 Margin_i + \gamma_2 Margin_i \cdot Aligned_i + \epsilon_i \qquad (1)$$

where *Aligned* is an indicator variable equal to 1 when the CMO is politically aligned with the council majority, 0 otherwise. Y_i^t measures changes in bureaucratic pay (i.e. CMO gross salary of municipality i from the last year before the election to year t) and bureaucratic turnover (1 if the CMO of municipality i in place before the election is replaced by year t, 0 otherwise).[13] The coefficient of interest is β, which reflects the causal effect of having the political bloc that matches the political affiliation of the CMO narrowly win the election.

The electoral RD design set out in equation (1) is only effective when relevant actors do not have precise control over election results. To empirically assess this identifying assumption, we check whether municipality characteristics – such as population size and socio-economic composition, as well as municipalities' geographical location – are balanced across the cut-off of the left-wing win margin. Figure 3 shows that this is indeed the case. Appendix Figure B.5 illustrates that the same conclusion holds when we consider CMO-level covariates.[14]

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[13]An advantage of using wage *changes* is that we are effectively netting out all municipality characteristics that do not vary over time, such as cost of living differences between urban and rural areas. Time differences are not necessary for internal validity of the RD design, but will improve statistical precision.

[14]More formally, when using municipality-level or CMO-level covariates as the outcome variables in Equation (1), we also reach the same conclusion (see Appendix Tables B.1 - B.4). In all RD analyses we drop municipalities with CMOs that sometime during the next election period reach retirement age (65 years).

Figure 3: Balance on covariates by left-wing win margin
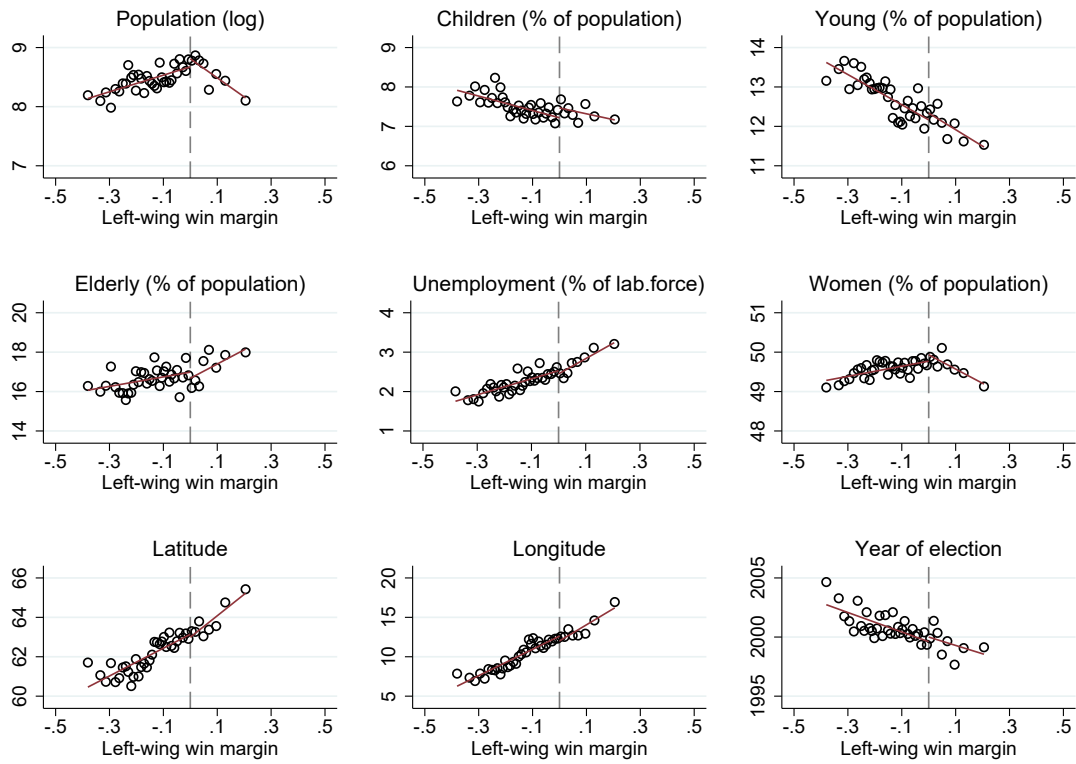
Note: RD plots showing covariate balance for nine different variables (given in the title of each panel) by the left-wing margin. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations.

5 Main results

Our main results are graphically presented in Figure 4. The top panel shows four RD plots relating contemporaneous shifts in council majorities (year $t = 0$) to changes in bureaucratic pay over the election period (year $t = 1, 2, 3$ or 4). The bottom panel of each figure plots the RD estimates with corresponding 95% confidence intervals. A longer time period under investigation allows sufficient time for any adjustments in the CMOs' position, responsibilities and pay to become implemented. This may be necessary in our setting since CMOs tend to work under permanent contracts (which are difficult to cancel in the short run) and face performance evaluations either annually or bi-annually. Before discussing the results, we should note that we restrict the analysis to bureaucrats that have a background in politics. These might, as a group, differ from CMOs without an observable political affiliation. For instance, some CMOs may not want to flag their political affiliation to be able to work effectively with changing local governments. We cannot rule this out. Yet, it only affects the interpretation of our findings, not the internal validity of our empirical approach. Our sharp RD design can nonetheless identify the local average treatment effect of alignment, conditional on CMOs having a background in politics.

Figure 4 shows that CMO's wage growth over the election period increases with approximately three to four percentage points when the CMO is politically aligned with the council majority. This effect is statistically significant at conventional levels, seems to increase gradually over time, and is substantively meaningful given a baseline wage growth rate of approximately 12% over the four-year election term. Table 3 shows that these results are robust to different specifications of the control function (columns (1) and (2)), as well as to the exclusion of observations far away from the cut-off (columns (3) to (5)). Point estimates are highly consistent across specifications, even when we zoom in on observations in the immediate vicinity of the cutoff (columns (4) and (5)). Importantly, in placebo checks based on pre-election years (gray bars in the bottom panel of Figure

4), we do not see similar effects. This further strengthens the causal interpretation of our findings.

As explained in section 4, the outcome variables in Figure 4 and Table 3 are measured at the municipality level (and not at the CMO level). This implies that even for municipalities that experience bureaucratic turnover, we still observe CMO wages. Data censoring is therefore not a concern in the strict sense. Nonetheless, and closely related to this censoring issue, a potential concern may arise when departing CMOs and their replacements are dissimilar on characteristics that have a causal effect on pay. If so, our results might simply reflect such differences in individual-level characteristics. From this perspective, one might particularly worry that bureaucratic turnover may in itself be related to political alignment. The *ally principle* would indeed suggest that elected politicians have an incentive to select and/or retain civil servants aligned with their own policy preferences. Under sufficiently permissive institutional arrangements (Hollibaugh 2015; Dahlström and Lapuente 2017), politician-bureaucrat misalignment – for instance, due to elections – might therefore increase the chances of bureaucratic turnover (see also Boyne et al. 2010; Iyer and Mani 2012; Christensen, Klemmensen and Opstrup 2014; Akhtari, Moreira and Trucco 2017; Dahlström and Holmgren 2019). If such turnover effects arise in reality, this would naturally affect how the wage results in Figure 4 should be interpreted.

We empirically address this issue in three ways. First, we estimate equation (1) using bureaucrat turnover as the dependent variable. The results are summarized in Appendix Figure B.6 and Appendix Table B.5. These analyses provide no clear evidence that CMO turnover is affected by political alignment (although the relatively low statistical precision implies we cannot rule out substantial effects). Second, we exclude from our baseline analysis all observations where the CMO changed after the election. Appendix Figure B.7 shows that the baseline findings carry through with this restricted sample. Bureaucratic turnover triggered by political misalignment thus does not seem to be driving our main results, which mitigates concerns that differences in departing and incoming CMOs'

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characteristics drive our findings. Finally, as mentioned above, we tested for covariate balance on CMO-level covariates (see Appendix Figure B.5 and Appendix Tables B.3 - B.4). The absence of any sign of imbalance throughout these checks further mitigates concerns that changes in CMO-level characteristics drive our estimated effects.

Overall, our results indicate that CMOs with a background in politics appear to benefit significantly in terms of their wage development from being politically aligned with the council: better-matched bureaucrats are compensated more generously. This result is at odds with theoretical predictions arising in a principal-agent model assuming policy-motivated agents (Besley and Ghatak 2005). However, it is consistent with preference alignment facilitating cooperation and agents' productivity (or reducing their cost of effort), which would work to push up remuneration. It might also reflect principals' increased willingness to pay more to prolong a beneficial match (in terms of a successful working relationship between politicians and bureaucrats), or result from favoritism (as in Xu's (2018) study of the British Empire). The next section aims to gain more insights into these potential underlying mechanisms.

6 Mechanisms

Figure 4 and Table 3 provide evidence that council-bureaucrat alignment matters for bureaucratic pay. In this section, we assess to what extent these results might be linked to delegation of tasks or derive from widespread political favoritism and cronyism.

6.1 Delegation

Delegation of tasks and decision-making powers to aligned CMOs is of particular interest to politicians when alignment improves productivity, since it allows politicians to increase control over public policies. Politicians' incentives to delegate decision-making powers to aligned CMOs would be weaker when the mechanism is favoritism, as their key interest then is simply to award pecuniary favors to fellow party members.

Figure 4: Council-bureaucrat alignment and bureaucrat remuneration
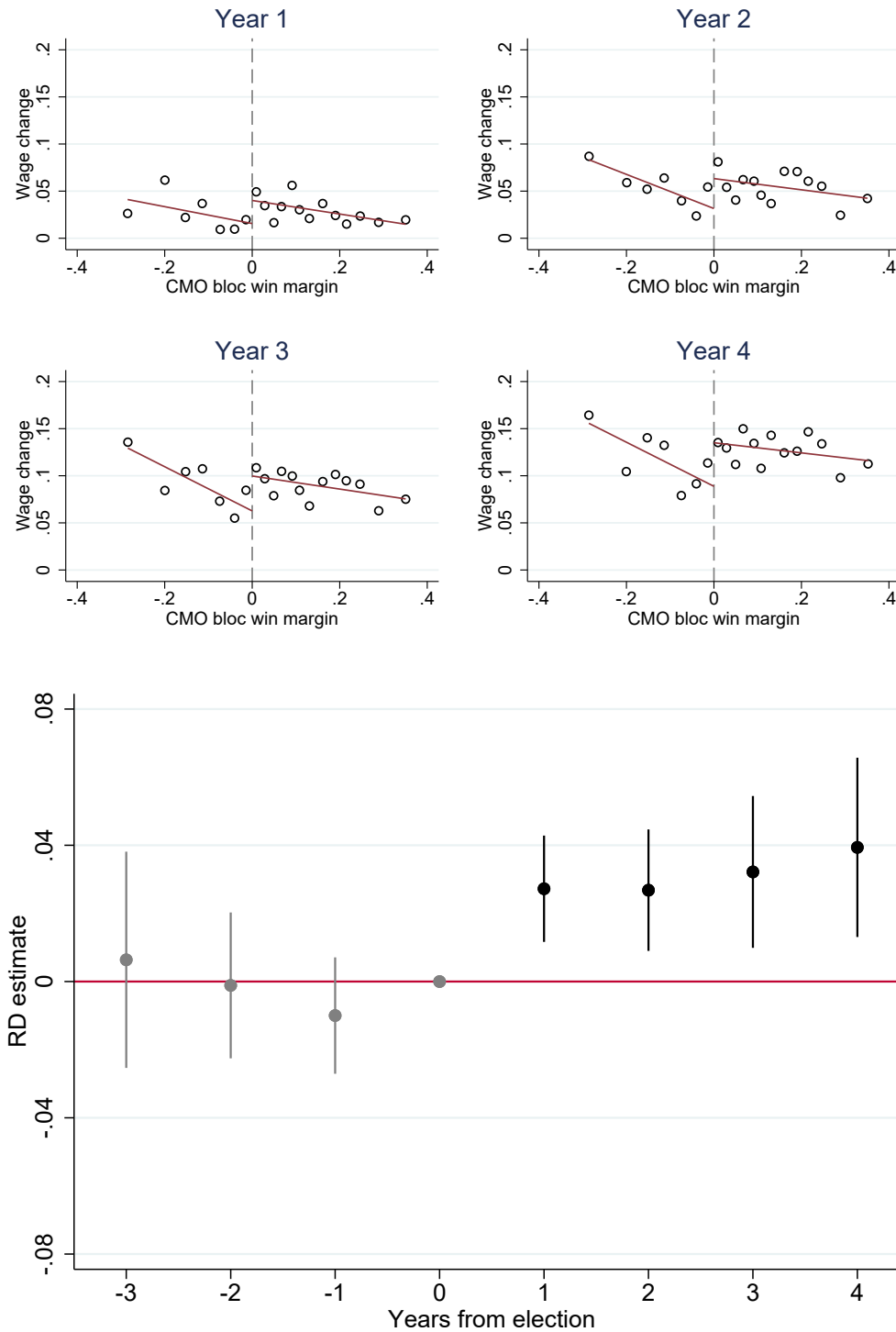
Note: The top panel displays RD plots showing how changes in bureaucratic remuneration, from year 0 to year 1, 2, 3, and 4, depends on council-bureaucratic alignment. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Gray bars are based on pre-election years, black bars are based on post-election years.
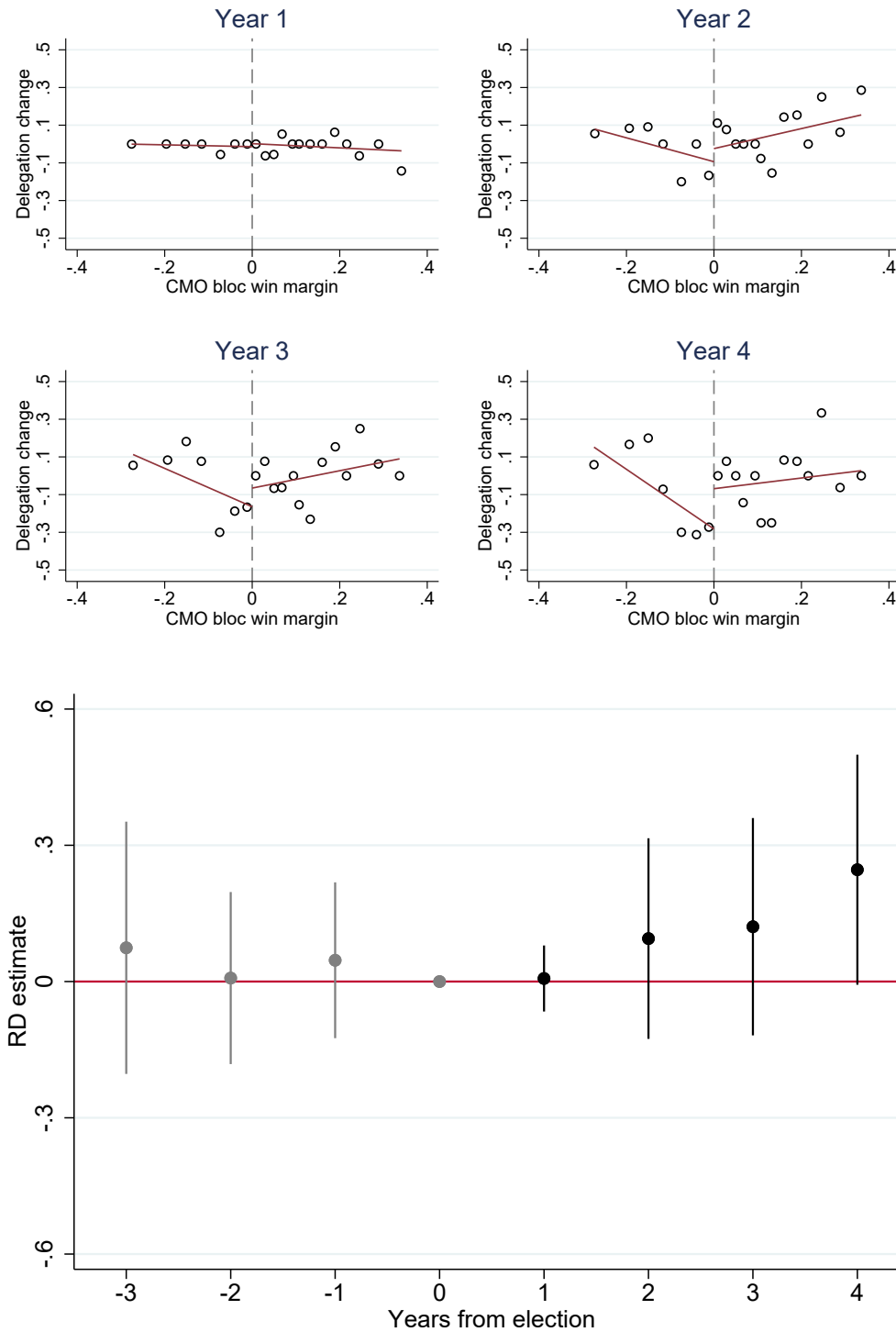
Table 3: RD estimates of council-bureaucrat alignment on bureaucratic remuneration

Panel A: One year after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.027	0.033	0.022	0.022	0.019
	(0.008)	(0.011)	(0.015)	(0.009)	(0.014)
Bandwidth	0.500	0.500	0.099	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	196	196	91	56	24
N right of cut-off	325	325	132	67	34

Panel B: Two years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.027	0.017	0.019	0.020	0.021
	(0.009)	(0.013)	(0.018)	(0.010)	(0.016)
Bandwidth	0.500	0.500	0.078	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	203	203	75	56	24
N right of cut-off	336	336	103	66	33

Panel C: Three years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.032	0.024	0.018	0.026	0.028
	(0.011)	(0.016)	(0.022)	(0.013)	(0.018)
Bandwidth	0.500	0.500	0.075	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	198	198	72	57	24
N right of cut-off	334	334	97	68	34

Panel D: Four years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.039	0.023	0.012	0.021	0.025
	(0.013)	(0.019)	(0.027)	(0.015)	(0.022)
Bandwidth	0.500	0.500	0.078	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	203	203	75	57	24
N right of cut-off	335	335	106	68	34

Note: The reported RD estimates in column (1) correspond to β from Equation (1), which are shown in the bottom panel of Figure 4. In column (2), a second-order polynomial in the forcing variable is included on each side of the discontinuity. In column (3) we use a linear control function and apply the bandwidth suggested by the Calonico et al. (2017) method. In column (4) and (5), we drop the control function and compare differences in means close to the cut-off. Standard errors clustered at the CMO level in parentheses.

Figure 5 and Table 4 show that politician-bureaucrat alignment appears to play some role for the level of budgetary task delegation to the CMO. The point estimates are consistently in the same direction, and suggest that alignment leads to more extensive task delegation. The estimated effects also mimic our wage results in gradually increasing over time. However, the analysis suffers from low precision, partly because information on budgetary delegation derives from surveys with a substantial level of missing observations. The reason is that the survey was not fielded every year and not all municipalities always provided answers to the relevant question. As a robustness check, we replicated the analysis while interpolating the data to get a more complete time-series. The details of the interpolation process are presented in Appendix C. The results using the interpolated data are provided in Appendix Figure B.8, and are qualitatively similar to those provided in the main text. As expected, interpolation substantially narrows the confidence intervals, while also leading to slightly smaller point estimates.

Figure 5: Council-bureaucrat alignment and delegation

Note: The top panel displays RD plots showing how changes in delegation, from year 0 to year 1, 2, 3, and 4, depends on council-bureaucratic alignment. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Gray bars are based on pre-election years, black bars are based on post-election years.

Table 4: RD estimates of council-bureaucrat alignment on bureaucratic delegation

Panel A: One year after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.007	-0.038	-0.052	-0.047	0.000
	(0.037)	(0.060)	(0.083)	(0.047)	(0.076)
Bandwidth	0.500	0.500	0.114	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	128	128	61	36	15
N right of cut-off	208	208	99	43	19

Panel B: Two years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.095	0.203	0.210	0.105	0.167
	(0.113)	(0.162)	(0.180)	(0.131)	(0.176)
Bandwidth	0.500	0.500	0.125	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	91	91	47	27	12
N right of cut-off	157	157	78	32	11

Panel C: Three years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.121	0.230	0.137	0.147	0.076
	(0.122)	(0.176)	(0.217)	(0.145)	(0.198)
Bandwidth	0.500	0.500	0.105	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	92	92	41	28	12
N right of cut-off	157	157	67	32	11

Panel D: Four years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.246	0.395	0.332	0.296	0.148
	(0.129)	(0.196)	(0.246)	(0.157)	(0.267)
Bandwidth	0.500	0.500	0.125	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	90	90	48	27	11
N right of cut-off	145	145	71	29	8

Note: The reported RD estimates in column (1) correspond to β from Equation (1), which are shown in the bottom panel of Figure 5. In column (2), a second-order polynomial in the forcing variable is included on each side of the discontinuity. In column (3) we use a linear control function and apply the bandwidth suggested by the Calonico et al. (2017) method. In column (4) and (5), we drop the control function and compare differences in means close to the cut-off. Standard errors clustered at the CMO level in parentheses.

6.2 Favoritism

Several recent studies show that supporters of the political party winning an election – including registered party members, election candidates and campaign donors – are significantly more likely to obtain a position as public employee and witness substantial income increases after the election. This appears to be the result of political favoritism whereby incumbent party leaders reward their supporters via well-paid positions in the public sector (Brollo, Forquesato and Gozzi 2017; Barbosa and Ferreira 2019; Colonnelli, Teso and Prem 2020). In this section, we perform a comparable empirical analysis to assess whether similar political favoritism is widespread in Norway. The presence of such effects would question our interpretation that the wage increases observed for aligned CMOs are due to higher productivity. Yet, one should keep in mind that the *absence* of evidence on favoritism towards aligned candidates cannot conclusively rule out its presence for the determination of CMO wages.

The analysis relies on administrative register data covering complete individual-level income records over the period 2007-2014 for roughly 63,000 candidates standing for Norwegian local council elections in 2007 and 2011 (see Appendix C.4 for detailed description of these data). In Figure 6, we display post-election income changes for candidates belonging to the party bloc barely winning/losing the election. The horizontal axis shows the "supporter bloc win margin", defined as the left-wing (right-wing) win margin if the candidate runs for a left-wing (right-wing) party. The vertical axis indicates the change in real income levels in the first to fourth year after the election (relative to the election year, which is year 0). We find no evidence of political favoritism.[15] All point estimates are small and none of them reaches statistical significance at the 5 percent level.

These null findings stand in sharp contrast to those presented in Colonnelli, Teso and Prem (2020). They use administrative data from Brazil and show that supporters of the winning party receive substantial income increases after the election. However, the

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[15]Separate analyses of elected and non-elected candidates does not change this conclusion (see Appendix Figures B.9 and B.10)

Norwegian context differs markedly from their Brazilian setting, and several features of the Norwegian institutional framework are likely to dissuade incumbents from engaging in widespread political favoritism. First, the Norwegian Freedom of Information Act allows public access to the qualifications of applicants to government positions as well as the compensation they receive (which in practice led to several newspaper articles on the basis of such information). Second, the Tax Administration Act requires public authorities to make their annual tax returns availably to the public, which are posted online on the Tax Administration's website. While all Nordic countries have "some sort of public disclosure at the personal level, (...) Norway is exceptional in that individual income tax return information can be accessed through electronic search" (Bø, Slemrod and Thoresen 2015, p.36). Both Acts create high visibility and transparency regarding all public expenditures. Third, government purchases are subject to strictly enforced regulations, and even small procurements must be awarded via competitive tendering. Finally, international rankings show that Norway ranks on top in local newspaper coverage (alongside Japan), such that top administrators and elected politicians face intense media scrutiny. Overall, this highly institutionalized transparency and extensive media coverage benefits political accountability while working against widespread patronage and cronyism (Snyder and Strömberg 2010; Strömberg 2015). Although we are unable to rule it out conclusively, the results in this section cast doubt on political favoritism being a key channel behind our results in section 5.

Figure 6: Council-supporter alignment and supporter income
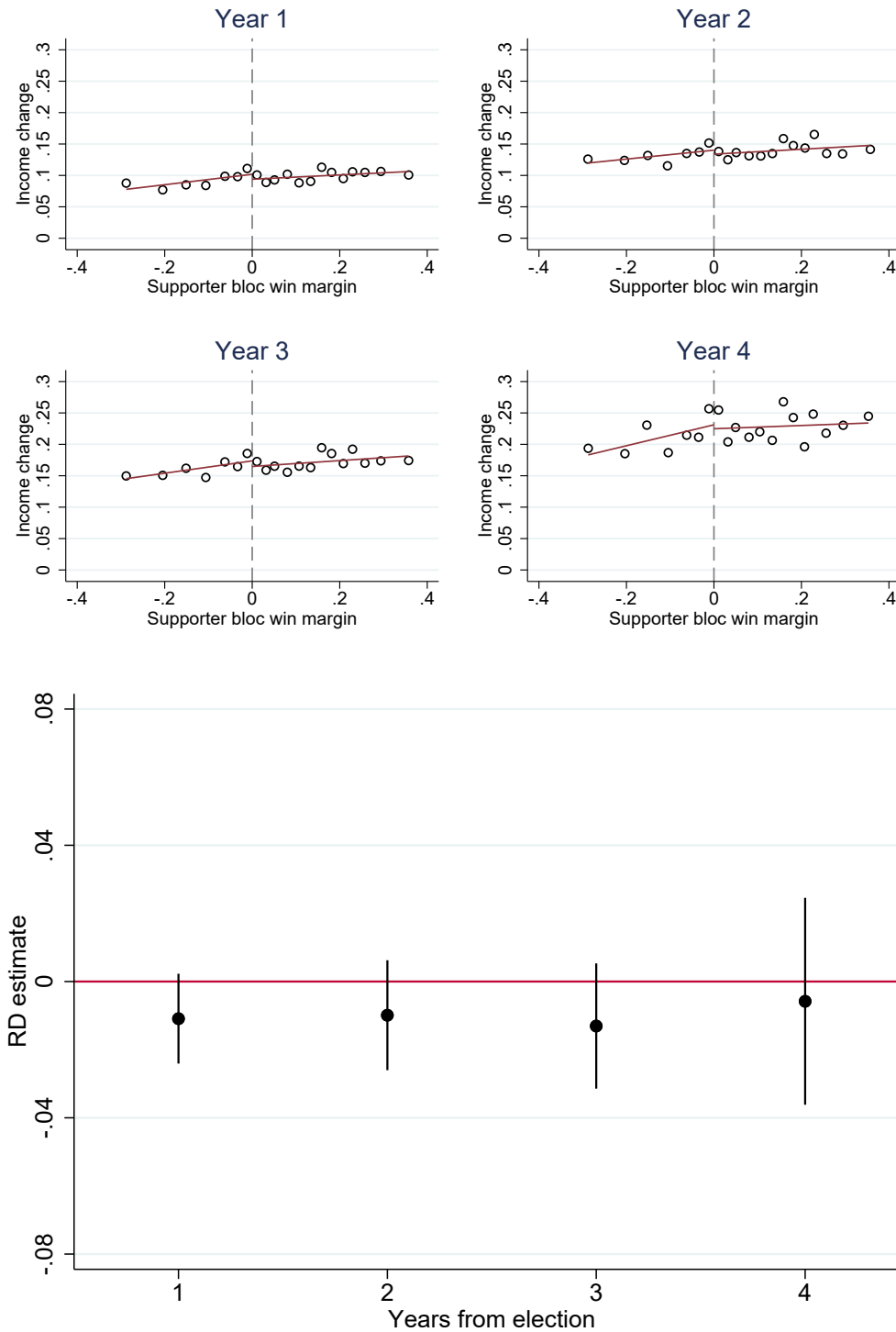
Note: The top panel displays RD plots showing how changes in supporter (real) income, from year 0 to year 1, 2, 3, and 4, depends on council-supporter alignment. Income changes are winsorized at the 1% level. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Standard errors are clustered at the municipality-year level.

7 Conclusion

In the classic Weberian view, bureaucrats are posited as neutral agents performing tasks and assignments set by their political leadership independent of any personal interests. In principal-agent theory, bureaucrats' policy preferences may play a more prominent role. Since closer preference alignment with politicians can improve on inefficiencies related to task delegation, principals may prefer agents who resemble them ideologically – the *ally principle* (Bendor, Glazer and Hammond 2001; Huber and Shipan 2008; Dahlström and Holmgren 2019). Addressing this theoretical disagreement on whether and how preference-alignment between politicians and bureaucrats matters has remained extremely challenging from an empirical perspective. A key reason is that bureaucrats' political leaning is generally unobserved. Our first main contribution is to exploit top civil servants' electoral history (which clearly signposts their partisan identity) to overcome this problem. This provides a critical opportunity to exploit the dyadic relationship between political and bureaucratic leaders. Our second contribution pushes the research frontier beyond politically aligned bureaucrats' turnover (e.g. Iyer and Mani 2012; Akhtari, Moreira and Trucco 2017; Bach and Veit 2018) and likelihood to be appointed to (specific) public sector jobs (Brollo, Forquesato and Gozzi 2017; Xu 2018; Barbosa and Ferreira 2019; Colonnelli, Teso and Prem 2020). We analyze the personal financial implications of politician-bureaucrat preference (mis)alignment at the very top of the administrative hierarchy, thereby separating wage effects from other earnings effects (e.g., due to individuals achieving public sector employment).

Using close elections for inference, we find evidence that council-bureaucrat alignment substantially increases top bureaucrats' wage growth, while leaving bureaucratic turnover unaffected. This finding goes against the conventional wisdom from principal-agent models with motivated agents, as such agents require *less* incentives (pay) to perform optimally. In contrast, our finding is consistent with a theoretical argument based on politically aligned matches being more productive (thus benefiting increased control

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over public policy), as this mechanism makes *higher* financial compensation optimal. Furthermore, we uncover some evidence for a positive relation between political alignment and the level of task delegation (consistent with a productivity mechanism), while we do not find any evidence of political connectedness giving higher income growth for election candidates (at odds with a favoritism/cronyism channel). Overall, therefore, the observed wage growth in politically aligned council-bureaucrat matches appears most in line with increased productivity as underlying mechanism in our setting.

Overall, existing work has provided evidence that political alignment *between politicians* strongly influences the allocation of intergovernmental grants (Larcinese, Rizzo and Testa 2006; Solé-Ollé and Sorribas-Navarro 2008; Brollo and Nannicini 2012; Fouirnaies and Mutlu-Eren 2015) and funding for local investments (Fiva and Halse 2016). Recent contributions to this literature have furthermore shown relevant impacts on other outcomes including economic performance (Asher and Novosad 2017) and the performance of bureaucrats (Velasco Rivera 2019). We instead examine political alignment *between bureaucrats and politicians*. Such alignment can directly result from political control over (key appointments in) the bureaucracy. The assessment of its implications is important because senior officials at the top of the administrative hierarchy generally maintain a pivotal position in the policy-making process (Gallo and Lewis 2012; Christensen, Klemmensen and Opstrup 2014; Bach and Veit 2018).

Although our analysis establishes important financial returns to politician-bureaucrat alignment for the bureaucrat, a natural next step would be to consider additional downstream consequences. For instance, what is the impact on CMOs' future income/wealth? Our data unfortunately do not allow us to assess such effects (which requires following CMOs beyond their current position), and we view this as an important avenue for further research. Future research should also assess any returns to council-bureaucrat alignment for the political leadership (e.g., mayor) – not just in terms of their political career, but also their pay (which is set by the local council in Norway) and future income/wealth. Naturally, it would also be interesting to extend our analysis to public good provision

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outcomes at the local level. Our results would lead one to expect improved public good provision due to increased productivity under political alignment. Finally, extensions of our work exploring potential asymmetries and sources of heterogeneity would be of interest (e.g. by parties in power, closeness of social ties).

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Data Availability

As we use confidential tax and other administrative records from Norway, we are not authorized to provide the original datasets. Researchers interested in replicating our analysis may contact the original depositories of the data at `https://www.ssb.no/data-til-forskning`.

The data we use about the political composition of the Norwegian municipal council, the party of the mayor, as well as election candidates is available at `www.jon.fiva.no/data.htm` (referred to as "Local Government Dataset" and "Local Candidate Dataset", respectively).

Information about the internal organization of Norwegian local authorities, including the extent of budgetary delegation, is included in the Local Government Organizational Database and is available at `https://nsd.no/nsddata/serier/kommunalorganisering.html`.

For Online Publication

Appendix A Principal-agent model

Appendix B Supplementary figures and tables

Appendix C Data sources and measurement

Appendix D RD analysis of changes in council majority

A Principal-agent model

In this section, we formally analyze how political preference alignment between a principal (politician) and an agent (CMO) affects the agent's expected pay. Preference alignment is thereby understood as a similarity along relevant preference dimensions between principal and agent (see also below). We focus on two potential underlying mechanisms. First, preference alignment gives policy-motivated agents a direct stake in achieving the public output desired by the political principal (the political mission). This is equivalent to the assumptions on policy motivation by Besley and Ghatak (2005). Second, preference alignment works to streamline communication and facilitates cooperation between contracting partners, and thereby improves the productivity of a match. This notion of productivity in a match is central to the literature on the *ally principle* (Bendor, Glazer and Hammond 2001; Huber and Shipan 2008; Dahlström and Holmgren 2019), and its micro-foundations – including improved communication, cooperation and control – have been extensively debated in the foregoing literature (Peters and Pierre 2004; Kopecky et al. 2016; Toral 2019).

Although our empirical setting is characterized by the absence of one-off bonus payments, the model developed below nonetheless builds on an incentive payment scheme. This is done to maintain comparability with previous work on performance contracts (e.g., Besley and Ghatak 2005), but it naturally implies that the model represents an imperfect analogy in our setting. To tie the model closer to the empirical application, however, one could think of the wage contract as consisting of a permanent wage plus an incentive-based, performance-related increase of this wage lasting over the entire employment spell. The net present value of this permanent wage increase would correspond to the value of the bonus, leaving the per-period incentives in the model unchanged.[1] The model thus can give us a sense of expected pay *levels* under different conditions, as well as providing additional clarity on how our two mechanisms push bureaucratic pay in opposite directions. In the main model, we focus on the moral hazard problem in the agency relation and incentive pay. However, we also show that our main theoretical propositions persist in a framework without information problems.

A.1 Matching and political alignment

Assume that a principal P and an agent B are randomly matched and choose whether to produce together. We denote the principal's and agent's party-types by P_i and B_i, respectively, where i is either L (left) or R (right). One can think of the policy placement of both players as being measured on the unit interval with L-types placed at 0 and R-types placed at 1. Since preference alignment implies that principal and agent are similar along relevant preference dimensions, we say that political preferences are aligned when $A = 1 - |P_i - B_i| = 1$, while political preferences are not aligned when $A = 1 - |P_i - B_i| = 0$.

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[1]Note also that a performance contract with an output-related bonus may equivalently be set up as a fixed wage contract with a dismissal probability related to output. By convention, we discuss mechanisms using the former, while appreciating that the latter may better fit with our empirical setting.

A.2 Technology and preferences

If the principal and agent in a match decide not to produce together, they receive their outside options (represented by u). If they do produce together, let output be given by $f = (a + A\lambda)e + \varepsilon$ where $a > 0$ is a productivity parameter and $\lambda \geq 0$ is the match specific productivity parameter that interacts with preference alignment A. The agent's effort is e, and ε is a stochastic element (noise). Agents' cost of effort is given by $c = \frac{e^2}{2}$.[2]

An agent's utility U is increasing in the expected financial value of the contract w (pay), and decreasing in the risk associated with the contract as well as cost c.

$$U = E[w] - 0.5rVar[w] - c + A\theta E[f],$$

where $r > 0$ measures the degree of risk aversion. The agent's utility may also be directly and positively affected by output f, depending on her potential intrinsic motivation for achieving output f (reflected in parameter $\theta \in [0, 1)$).

The principal is risk neutral with utility

$$\pi = E[f] - E[w].$$

Lastly, we assume that the principal can observe the agent's party-type, as these are mapped by party affiliation in the empirical application.

A.3 Optimal performance contract

In this section, we assume that the principal cannot observe effort and, hence, effort is not contractible (note that the next subsection solves the model assuming that the principal can observe effort). Restricting the analysis to linear contracts, let a contract w be given by

$$w = \tau + kf,$$

where τ is a fixed transfer and k is a fraction of output (the incentive part – or 'power' – of the contract). We analyze the optimal contract in two cases: in the first case agents are not motivated by policies (i.e., $\theta = 0$), while in the second case agents have the same productivity in all matches (i.e., $\lambda = 0$).

Looking first at the case without policy motivation, agents' utility of a contract is given by

$$U = E[w] - 0.5rVar[w] - c.$$

Inserting for w and f we get

$$U = \tau + k(a + A\lambda)e - 0.5rk^2Var[\varepsilon] - c.$$

The agent maximizes U with respect to effort e. This gives rise to the incentive compatibility constraint facing the principal

$$k(a + A\lambda) = c'.$$

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[2]Note that our results go through if we let alignment affect productivity in a match through the cost of effort. For instance, assuming cost of effort is given by $c = \frac{e^2}{2t}$, where the parameter $t \in (0, \infty)$ represents agents' cost-type, provides similar inferences to those reported below.

This equality implies that for a given k, agents in an aligned match ($A = 1$) will put in more effort than in a non-aligned match ($A = 0$) that has lower productivity. However, it is not optimal for the principal to give the same incentives k to agents of different alignment-types. In fact, it is straightforward to show that the incentive part of the optimal contract following from the principal's maximization problem (taking the incentive compatibility and participation constraints as given) is[3]

$$k = \frac{(a + A\lambda)^2}{(a + A\lambda)^2 + rVar(\varepsilon)}.$$

The optimal output-related pay k thus increases in agents' productivity in a match (which is higher for agents in aligned matches). The intuition is that the principal wants to incentivize the high productivity agents more than other agents, and these agents need to be compensated for taking on more risk (and suffering from the induced larger effort). Thus, agents in aligned matches demand higher expected pay to participate. The following proposition summarizes this result.

Proposition 1. *Suppose $\theta = 0$ and $\lambda > 0$. Then politician-bureaucrat preference alignment increases bureaucrats' expected pay, i.e., $E[w|A = 1] > E[w|A = 0]$.*

Now, what happens when we allow for policy-motivated agents? In this case we let $\theta > 0$ while $\lambda = 0$. The agent's utility of a contract w is then be given by

$$U = \tau + (A\theta + k)ae - 0.5rk^2Var[\varepsilon] - c.$$

It follows that the agent's first order condition is

$$(A\theta + k)a = c'.$$

Thus, for a given k, the agent puts in more effort when the match is aligned ($A = 1$). Equivalently, the same level of effort can also be achieved with a lower k, although this does not constitute an optimal contract. In fact, it turns out that the optimal k is the same to agents of different alignment-types. This result stems from the fact that the change in effort induced by changing k is the same for all effort levels when c'' is constant (i.e., $de/dk = a$ is invariant to θ). The principal's trade-off when increasing k between the marginal gain in production (through effort) and the marginal cost of risk shifting, is then the same for all agents regardless of the match's (mis-)alignment.

Turning to expected pay, note first that – for given transfer τ – the surplus is larger for agents in aligned matches. Both aligned and misaligned agents face the same risk and get the same performance pay for a given output level. However, the aligned agents also have a direct stake in output. Moreover, these agents work harder creating additional surplus for themselves. That this indeed is a surplus, follows from that these agents could choose the same effort level as the misaligned ones, but optimally choose higher effort for given k. Next note that the participation constraint is given by

$$\tau + (A\theta + k)ae - 0.5rk^2Var[\varepsilon] - c = u.$$

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[3]The participation constraint simply states that the value of the contract to the agent must at least equal her outside option, i.e. it must satisfy $U = E[w] - 0.5rVar[w] - c = u$.

The principal extracts the aforementioned surplus by lowering the fixed transfer τ for the aligned agents until the participation constraint binds. Thus, τ is lower for these agents than for the misaligned ones. It is then straightforward to show that also total expected pay – i.e., $\tau + kae$ – is lower.[4] That is, the reduction in τ is larger than the additional pay to the aligned agents through the performance part of the contract (due to higher effort). The intuition is that the cost accrued from working harder is more than covered by the benefit obtained from their stake in the output. The effect of being policy-motivated thus is to lower agents' pay. The following proposition summarizes this result.

Proposition 2. *Suppose $\theta > 0$ and $\lambda = 0$. Then politician-bureaucrat preference alignment decreases bureaucrats' expected pay, i.e., $E[w|A = 1] < E[w|A = 0]$.*

A.4   No moral hazard

In this section, we show that our main results on the effects of preference alignment can be replicated without the moral hazard problem. In this situation, the principal can observe effort, and in the optimal contract the principal bears all risk associated with the stochasticity of output ε. The optimal contract consists of the fixed transfer τ and a given effort level $\bar{e}$, where the principal chooses $\bar{e}$ to maximize total surplus:

$$\pi + U = E[f] - c + A\theta E[f],$$

where $f = (a + A\lambda)e + \varepsilon$ as in the previous sections.

Looking first again at the case without policy motivation, we get the following first-order condition:

$$(a + A\lambda) = c'.$$

This condition implies that the optimal effort level in an aligned match ($A = 1$) is higher than in a non-aligned match ($A = 0$) that has lower productivity. Agents in aligned matches need to be compensated for this higher effort in order to participate. Thus, τ is larger when $A = 1$, replicating the result on productivity from the previous section.

Allowing for policy motivation (i.e., setting $\lambda = 0$ and $\theta = 1$), we get the following first-order condition:

$$(A\theta + 1)a = c'.$$

This condition again implies that the optimal effort level in an aligned match ($A = 1$) is higher than in a non-aligned match ($A = 0$). Turning to the wage, note that the participation constraint is given by:

$$\tau + (A\theta)ae - c = u.$$

As in the previous section, the surplus is larger for agents in aligned matches for a given τ. That is, the benefit of these agent's stake in the output is larger than the additional cost following from the larger optimal effort level. This surplus is extracted by the principal. Thus, τ is smaller when $A = 1$, replicating the result on policy motivation from the model with moral hazard in the previous section.

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[4]For given k, a sufficient condition for the result is that c'' is non-decreasing.
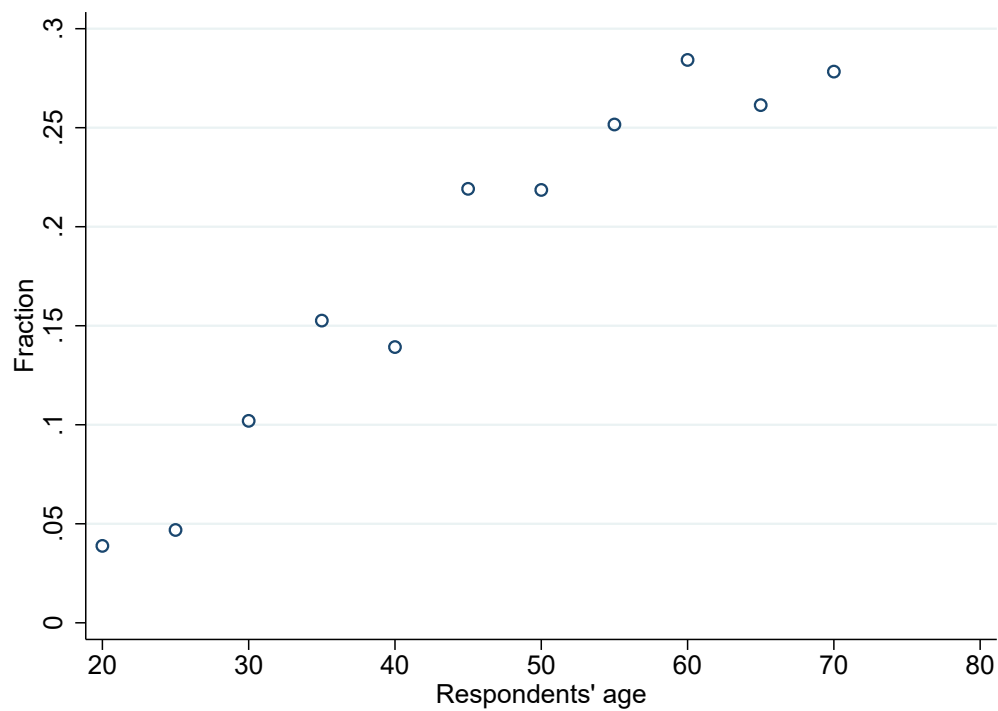
B   Supplementary figures

Figure B.1: Fraction of CMOs with background in politics, 1991-2015.
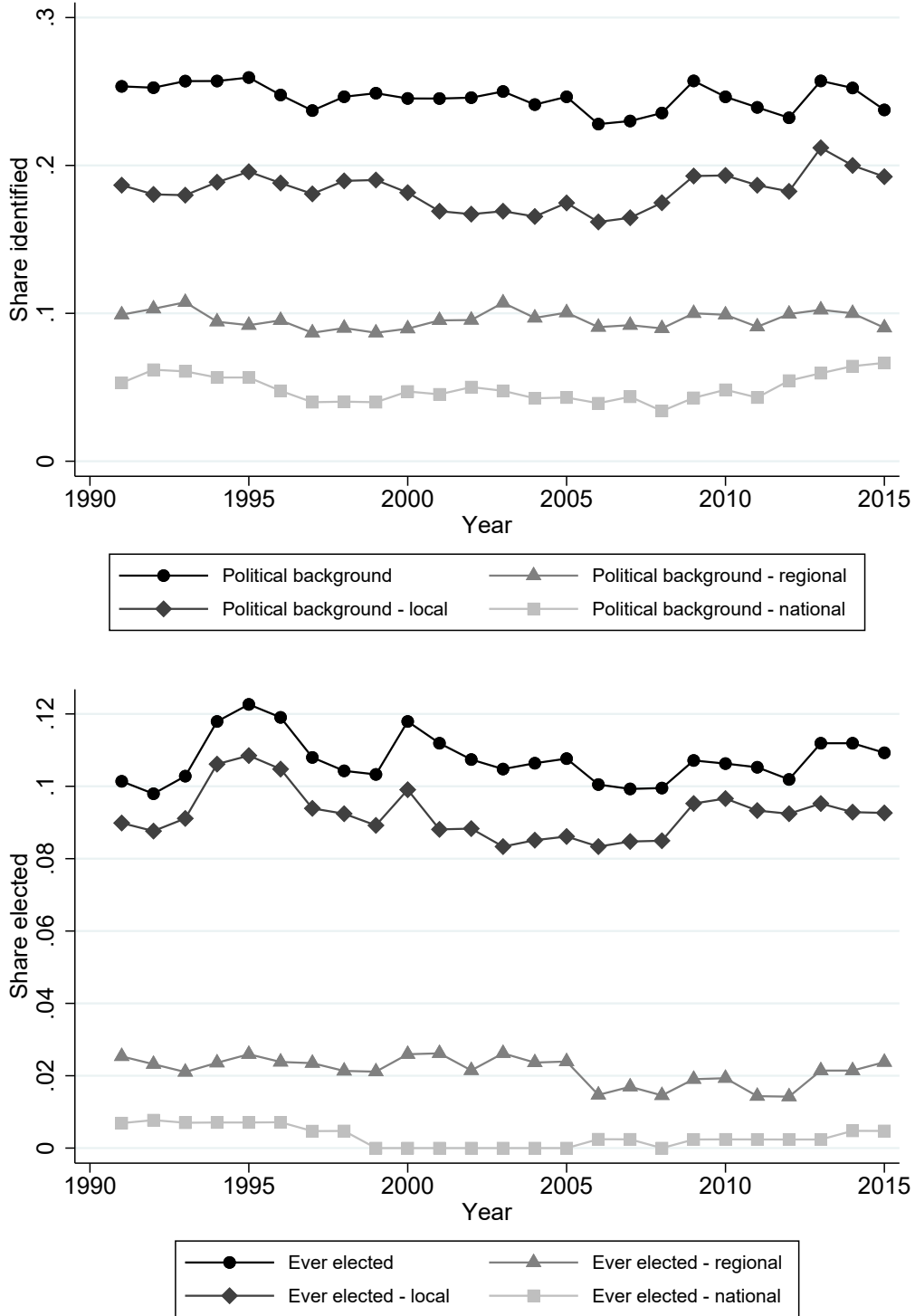

Note: The top panel displays, for each year in the sample, the fraction of CMOs where we can establish the partisan leaning from electoral lists. The bottom panel plots, for each year in the sample, the share of CMOs that have won political office in the election data we have available.

Figure B.2: Fraction of survey respondents previously running for local office by respondents' age

Figure B.3: Future party switching for local candidates running in 2003
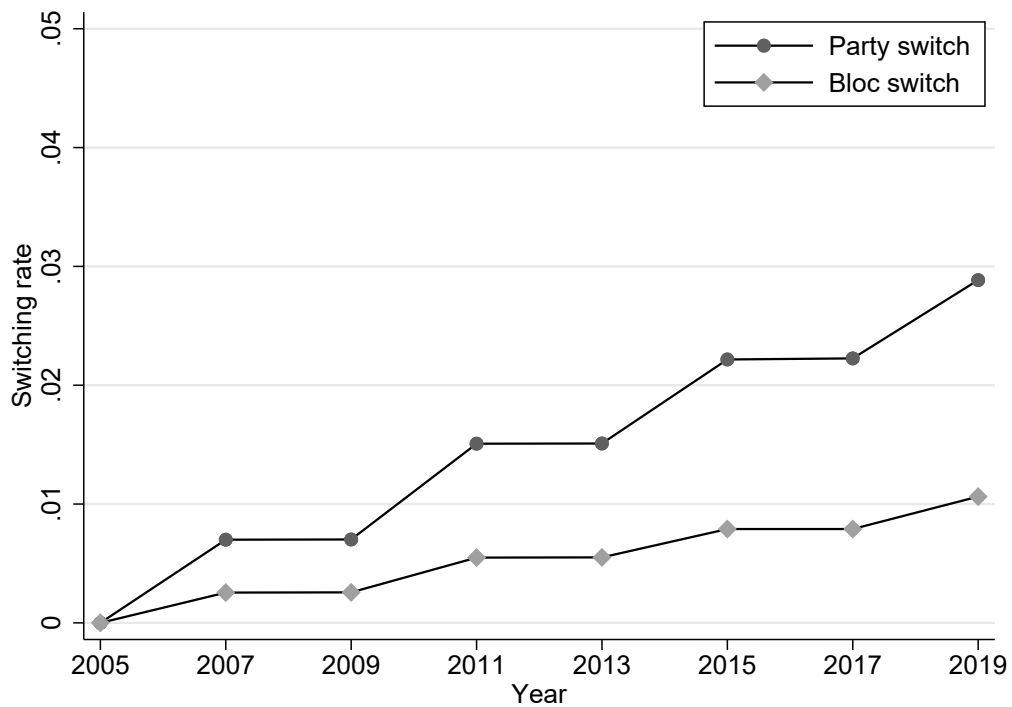
Note: The sample used to construct this figure is the 55,708 candidates running for local office in the 2003 election. We plot the accumulated fraction of candidates switching to another party (bloc) by each following election year. Local elections are held in 2007, 2011, 2015, and 2019. National elections are held in 2005, 2009, 2013, and 2017.

Figure B.4: CMO wage distributions
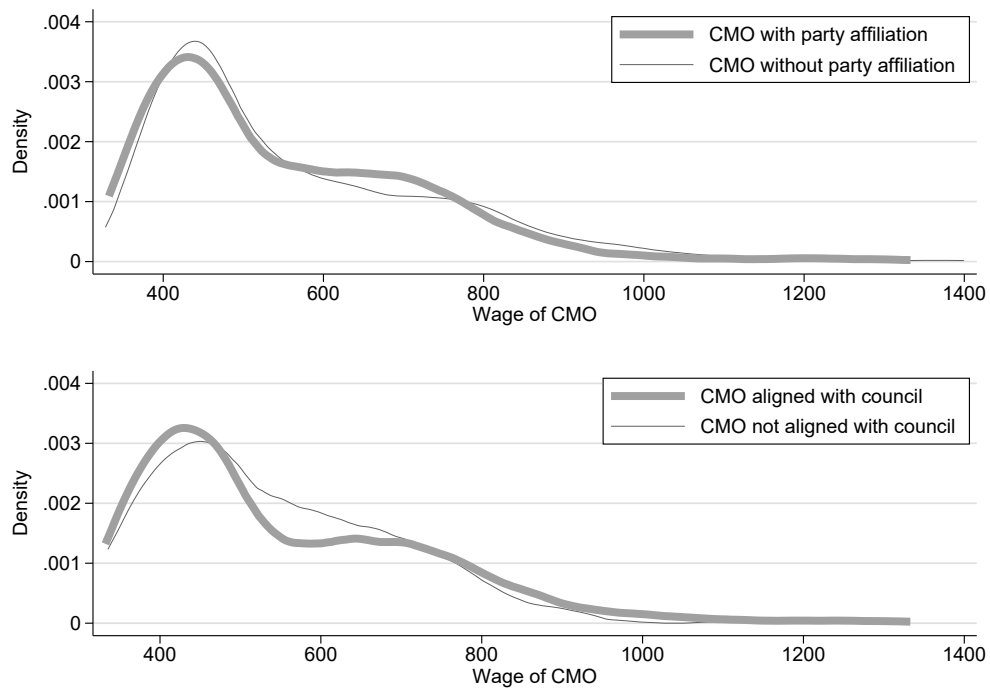
Note: This figure shows four different wage distributions based on real annual gross salary (in 2011 NOK) using an Epanechnikov kernel with optimal bandwidth. The top panel shows kernel density plots for wage levels of CMOs with party affiliation (thick line) and without party affiliation (thin line). The bottom panel shows kernel density plots for wage levels of CMOs aligned with council majority (thick line) and not aligned with council majority (thin line).

Figure B.5: Balance on CMO-level covariates by left-wing win margin
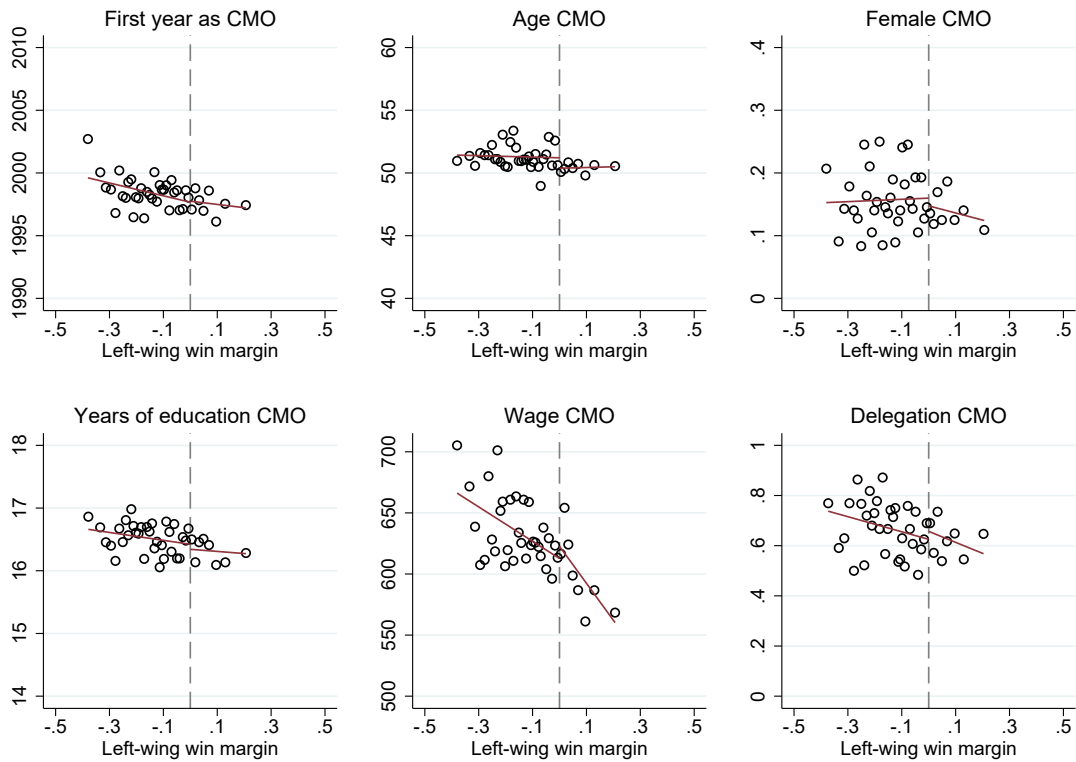
Note: RD plots showing covariate balance for six different CMO-level variables (given in the title of each panel) at the time of election by the left-wing win margin. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations.

Figure B.6: Council-bureaucrat alignment and bureaucrat turnover
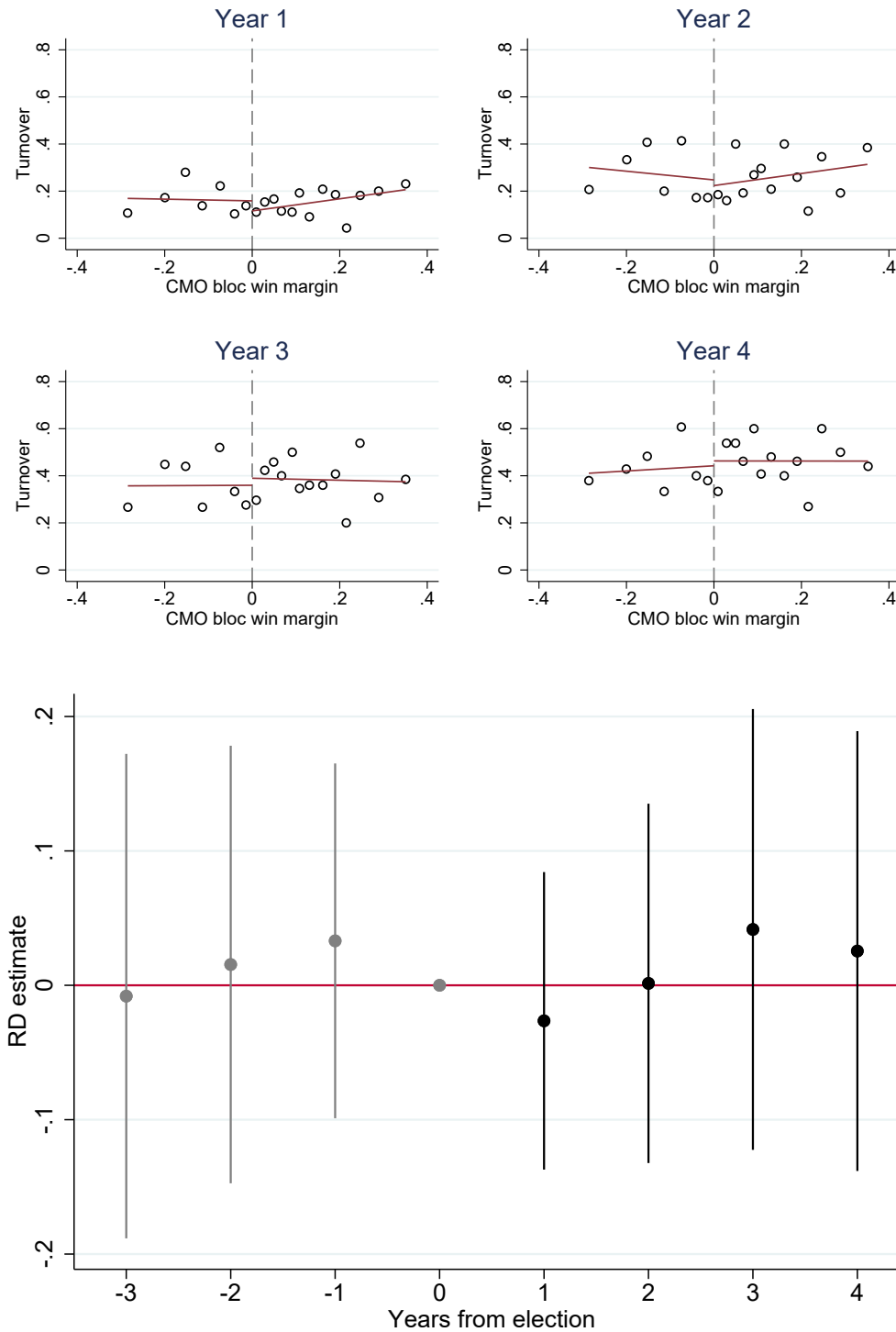
Note: The top panel displays RD plots showing how changes in bureaucratic turnover, from year 0 to year 1, 2, 3, and 4, depends on council-bureaucratic alignment. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Gray bars are based on pre-election years, black bars are based on post-election years.

Figure B.7: Council-bureaucrat alignment and bureaucrat remuneration; Sample limited to municipalities without CMO turnover
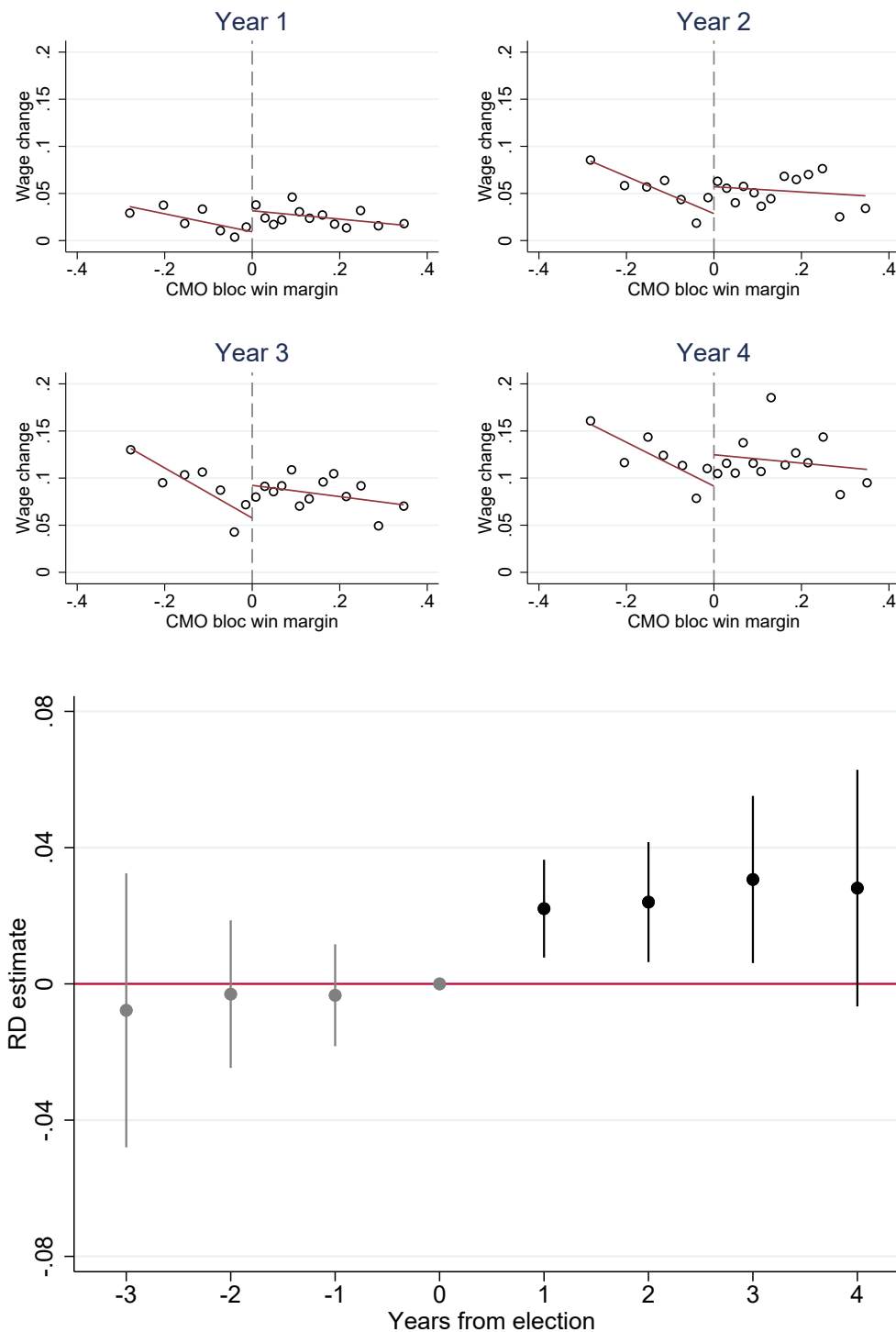
Note: The top panel displays RD plots showing how changes in bureaucratic remuneration, from year 0 to year 1, 2, 3, and 4, depends on council-bureaucratic alignment. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Gray bars are based on pre-election years, black bars are based on post-election years. The sample is limited to municipalities without CMO turnover.

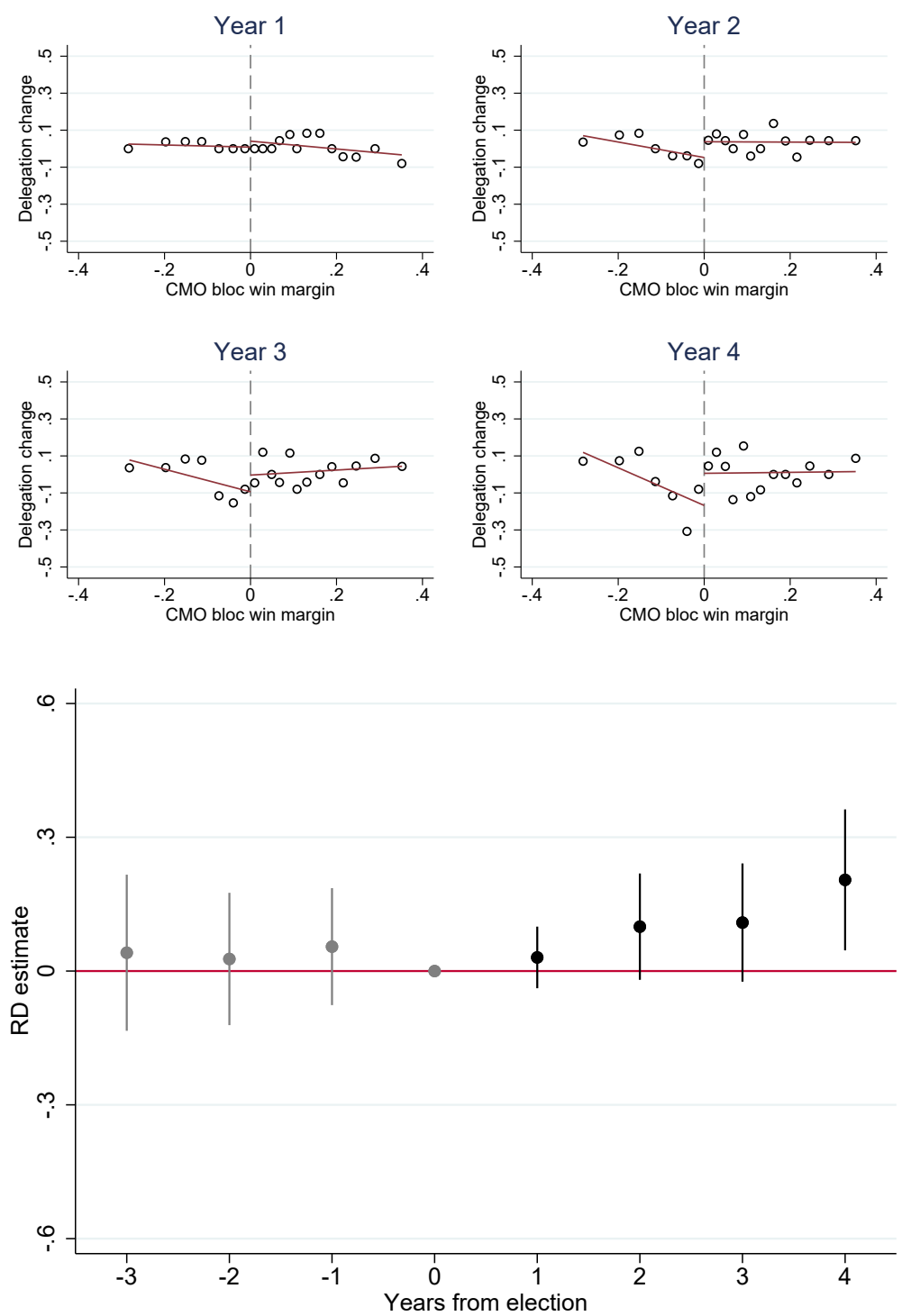Figure B.8: Council-bureaucrat alignment and delegation (including interpolated delegation data)

Note: The top panel displays RD plots showing how changes in delegation, from year 0 to year 1, 2, 3, and 4, depends on council-bureaucratic alignment. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Gray bars are based on pre-election years, black bars are based on post-election years. Data on delegation have been interpolated to get a more complete time-series (see Appendix C for details on the interpolation process.

Figure B.9: Council-supporter alignment and supporter income: Elected candidates

Note: The top panel displays RD plots showing how changes in supporter (real) income, from year 0 to year 1, 2, 3, and 4, depends on council-supporter alignment. Income changes are winsorized at the 1% level. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Standard errors are clustered at the municipality-year level.

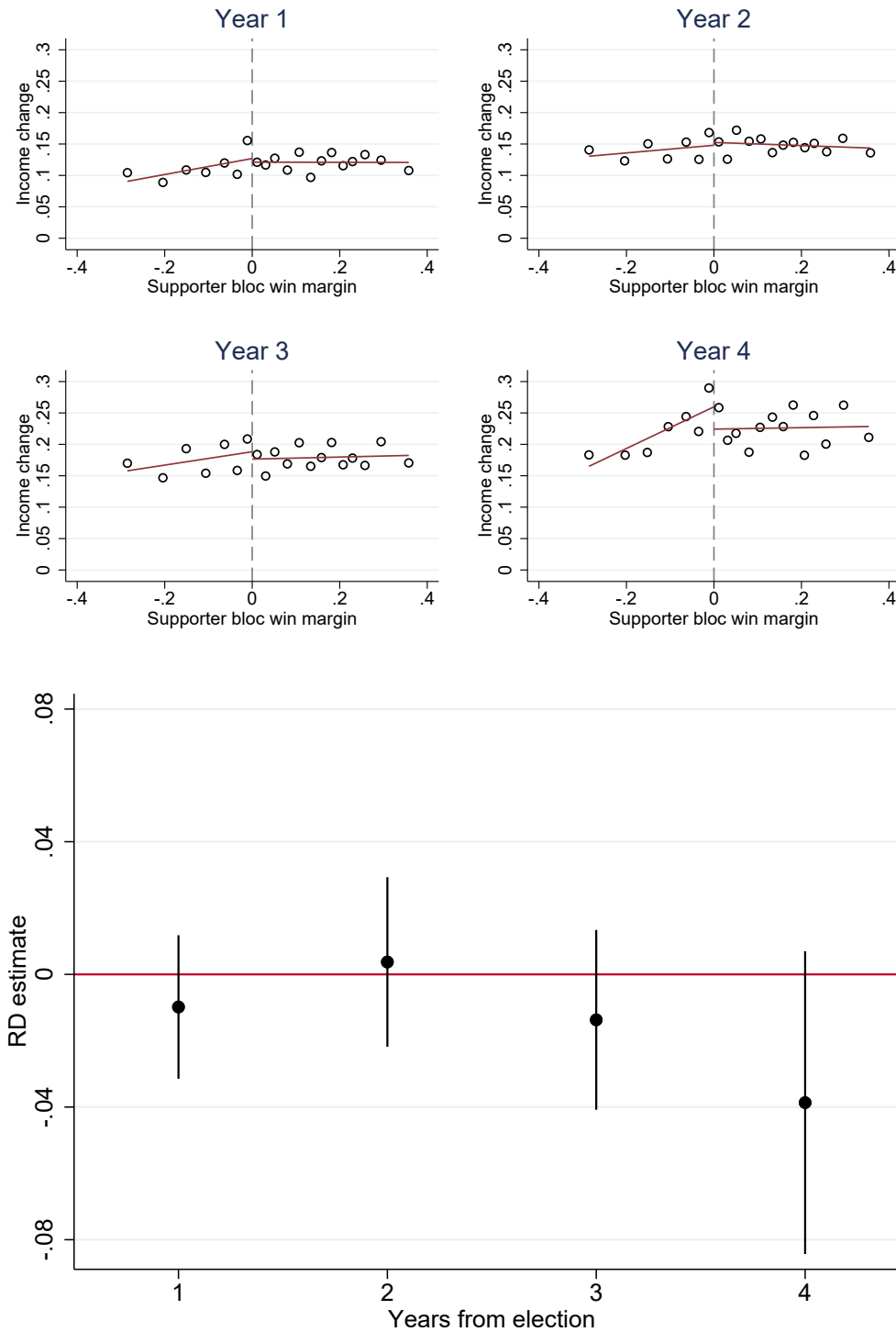Figure B.10: Council-supporter alignment and supporter income: Candidates not elected
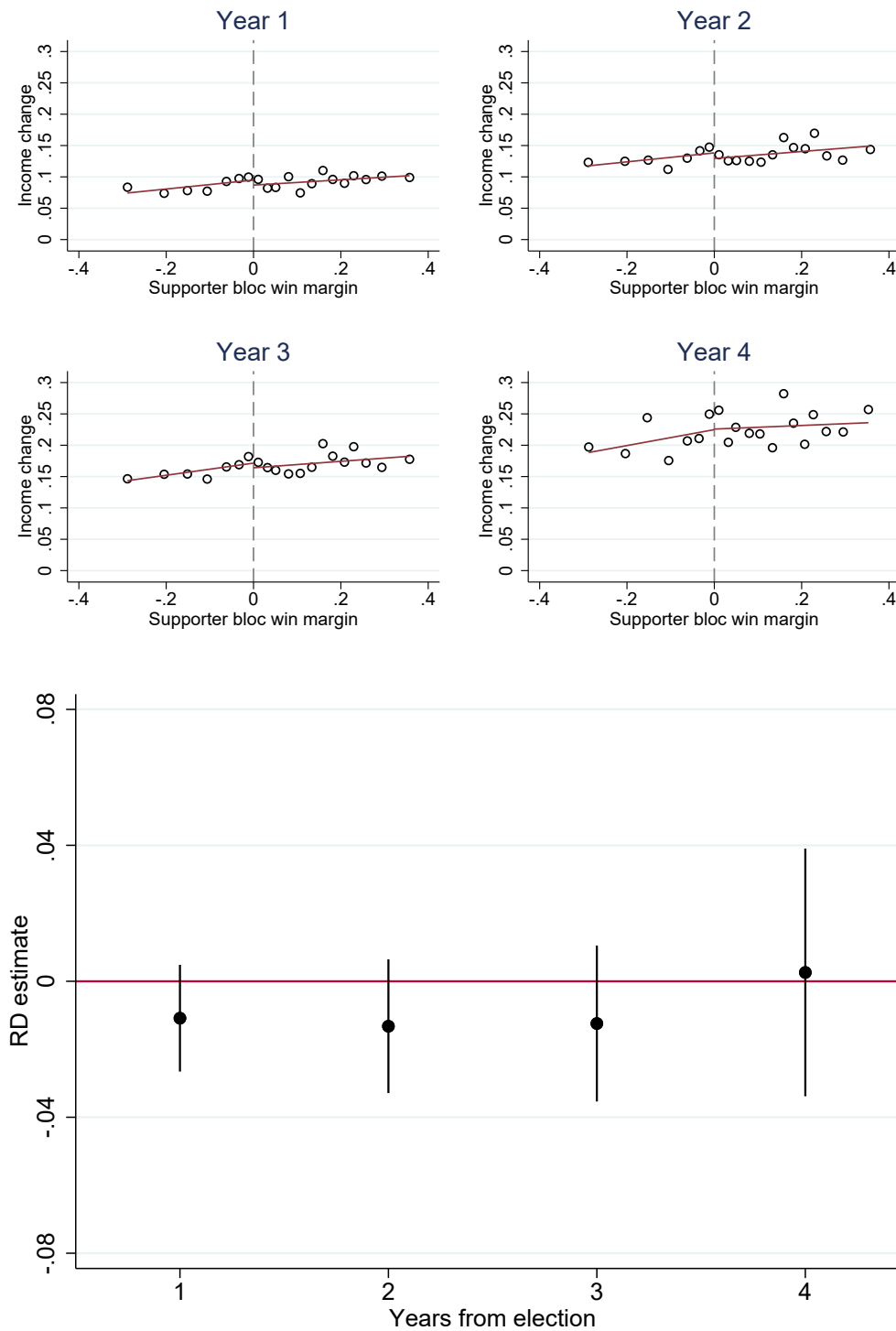
Note: The top panel displays RD plots showing how changes in supporter (real) income, from year 0 to year 1, 2, 3, and 4, depends on council-supporter alignment. Income changes are winsorized at the 1% level. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Standard errors are clustered at the municipality-year level.

Table B.1: RD analyses of covariate balance on municipality characteristics: Part I

Outcome variable: Population (log)

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.059	-0.212	-0.491	-0.066	-0.580
	(0.228)	(0.293)	(0.339)	(0.251)	(0.335)
Bandwidth	0.500	0.500	0.106	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	100	57	24
N right of cut-off	341	341	144	68	34

Outcome variable: Children (% of population)

	(1)	(2)	(3)	(4)	(5)
RD estimate	-0.185	-0.351	-0.139	-0.339	-0.267
	(0.292)	(0.381)	(0.469)	(0.319)	(0.439)
Bandwidth	0.500	0.500	0.101	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	95	57	24
N right of cut-off	341	341	137	68	34

Outcome variable: Young (% of population)

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.190	0.513	0.071	0.281	-0.075
	(0.331)	(0.438)	(0.558)	(0.356)	(0.521)
Bandwidth	0.500	0.500	0.096	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	91	57	24
N right of cut-off	341	341	128	68	34

Outcome variable: Elderly (% of population)

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.175	0.871	1.128	0.523	1.160
	(0.761)	(0.966)	(1.081)	(0.881)	(0.954)
Bandwidth	0.500	0.500	0.107	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	100	57	24
N right of cut-off	341	341	145	68	34

Outcome variable: Unemployment (% of lab. force)

	(1)	(2)	(3)	(4)	(5)
RD estimate	-0.013	0.125	0.321	0.029	0.370
	(0.220)	(0.287)	(0.338)	(0.252)	(0.331)
Bandwidth	0.500	0.500	0.102	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	97	57	24
N right of cut-off	341	341	138	68	34

Note: See Table B.2.

Table B.2: RD analyses of covariate balance on municipality characteristics: Part II

Outcome variable: Women (% of population)

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.059	-0.212	-0.491	-0.066	-0.580
	(0.228)	(0.293)	(0.339)	(0.251)	(0.335)
Bandwidth	0.500	0.500	0.106	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	100	57	24
N right of cut-off	341	341	144	68	34

Outcome variable: Latitude

	(1)	(2)	(3)	(4)	(5)
RD estimate	-0.266	0.203	0.746	0.236	0.453
	(0.710)	(0.895)	(1.105)	(0.740)	(1.045)
Bandwidth	0.500	0.500	0.104	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	98	57	24
N right of cut-off	340	340	141	68	34

Outcome variable: Longitude

	(1)	(2)	(3)	(4)	(5)
RD estimate	-0.702	-0.543	0.065	-0.103	-0.435
	(0.872)	(1.151)	(1.429)	(0.892)	(1.402)
Bandwidth	0.500	0.500	0.114	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	102	57	24
N right of cut-off	340	340	154	68	34

Outcome variable: Year of election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.588	1.042	1.097	1.376	1.500
	(1.162)	(1.577)	(2.001)	(1.225)	(1.875)
Bandwidth	0.500	0.500	0.103	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	207	207	98	57	24
N right of cut-off	341	341	140	68	34

Note: The reported RD estimates in column (1) correspond to β from Equation (1) using the covariate reported in the panel heading as the outcome variable. In column (2), a second-order polynomial in the forcing variable is included on each side of the discontinuity. In column (3) we use a linear control function and apply the bandwidth suggested by the Calonico et al. (2017) method. In column (4) and (5), we drop the control function and compare differences in means close to the cut-off. Standard errors clustered at the CMO level in parentheses.

Table B.3: RD analyses of covariate balance on CMO characteristics: Part I

Outcome variable: First year as CMO

	(1)	(2)	(3)	(4)	(5)
RD estimate	1.194	2.420	1.803	3.074	1.000
	(1.280)	(1.702)	(2.203)	(1.359)	(1.997)
Bandwidth	0.500	0.500	0.096	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	202	202	89	57	24
N right of cut-off	335	335	126	68	34

Outcome variable: Age CMO (years)

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.855	0.922	0.298	0.579	0.123
	(1.212)	(1.560)	(1.748)	(1.299)	(1.781)
Bandwidth	0.500	0.500	0.118	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	202	202	102	57	24
N right of cut-off	335	335	157	68	34

Outcome variable: Female CMO (dummy)

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.002	-0.002	0.076	0.007	0.076
	(0.059)	(0.072)	(0.081)	(0.065)	(0.070)
Bandwidth	0.500	0.500	0.092	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	202	202	85	57	24
N right of cut-off	335	335	116	68	34

Outcome variable: Education CMO (years)

	(1)	(2)	(3)	(4)	(5)
RD estimate	-0.249	-0.234	-1.408	-0.096	-0.713
	(0.450)	(0.585)	(0.677)	(0.552)	(0.614)
Bandwidth	0.500	0.500	0.070	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	193	193	68	57	24
N right of cut-off	319	319	93	67	34

Note: The reported RD estimates in column (1) correspond to β from Equation (1) using the covariate reported in the panel heading as the outcome variable. In column (2), a second-order polynomial in the forcing variable is included on each side of the discontinuity. In column (3) we use a linear control function and apply the bandwidth suggested by the Calonico et al. (2017) method. In column (4) and (5), we drop the control function and compare differences in means close to the cut-off. Standard errors clustered at the CMO level in parentheses.

Table B.4: RD analyses of covariate balance on CMO characteristics: Part II

Outcome variable: Wage CMO (NOK 1000)

	(1)	(2)	(3)	(4)	(5)
RD estimate	27.117	5.924	-4.374	23.288	0.760
	(29.676)	(40.365)	(52.878)	(31.007)	(52.614)
Bandwidth	0.500	0.500	0.093	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	202	202	85	57	24
N right of cut-off	335	335	121	68	34

Outcome variable: Delegation CMO

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.147	0.127	0.052	0.167	-0.026
	(0.108)	(0.150)	(0.195)	(0.117)	(0.195)
Bandwidth	0.500	0.500	0.102	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	112	112	52	33	13
N right of cut-off	183	183	71	35	12

Note: The reported RD estimates in column (1) correspond to β from Equation (1) using the covariate reported in the panel heading as the outcome variable. In column (2), a second-order polynomial in the forcing variable is included on each side of the discontinuity. In column (3) we use a linear control function and apply the bandwidth suggested by the Calonico et al. (2017) method. In column (4) and (5), we drop the control function and compare differences in means close to the cut-off. Standard errors clustered at the CMO level in parentheses.

Table B.5: RD estimates of council-bureaucrat alignment on bureaucratic turnover

Panel A: One year after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	-0.026	0.034	0.020	0.012	0.022
	(0.056)	(0.075)	(0.087)	(0.058)	(0.092)
Bandwidth	0.500	0.500	0.097	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	196	196	90	56	24
N right of cut-off	325	325	127	67	34

Panel B: Two years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.001	0.071	0.045	0.069	0.045
	(0.068)	(0.089)	(0.094)	(0.071)	(0.106)
Bandwidth	0.500	0.500	0.113	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	203	203	100	56	24
N right of cut-off	336	336	149	66	33

Panel C: Three years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.042	0.074	0.033	0.102	0.061
	(0.084)	(0.111)	(0.126)	(0.089)	(0.127)
Bandwidth	0.500	0.500	0.122	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	198	198	103	57	24
N right of cut-off	334	334	157	68	34

Panel D: Four years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.025	0.039	-0.002	0.087	-0.034
	(0.084)	(0.114)	(0.136)	(0.094)	(0.135)
Bandwidth	0.500	0.500	0.112	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	203	203	100	57	24
N right of cut-off	335	335	149	68	34

Note: The reported RD estimates in column (1) correspond to β from Equation (1), which are shown in the bottom panel of Figure B.6. In column (2), a second-order polynomial in the forcing variable is included on each side of the discontinuity. In column (3) we use a linear control function and apply the bandwidth suggested by the Calonico et al. (2017) method. In column (4) and (5), we drop the control function and compare differences in means close to the cut-off. Standard errors clustered at the CMO level in parentheses.

C   Data sources and measurement

C.1   CMO compensation and turnover

The Norwegian Association of Local and Regional Authorities (KS) is the employers' organization of local government authorities and operates a register of all these authorities' employees (the PAI-register). We use data from this register covering the period 1991-2015. The register has information on the name, birthdate and wages of the CMO employed in each municipality on December 1st of every year. The register provides information about both gross regular monthly salary as well as various supplementary compensations. The latter derive from, for instance, allowances for evening and night shifts or work on Saturdays and Sundays (accounting for approximately 1% of total wage level).

Access to the PAI-register allows us to characterize the complete set and length of employment spells (measured in years) for all CMOs. We have performed extensive quality checking on the data on CMO turnover, and excluded observations where substitute CMOs held temporary positions.

C.2   CMOs' party affiliation and political alignment

Data on the political composition of the municipal council as well as the party of the mayor are obtained from the *Norwegian Centre for Research Data* (NSD), as organized by Fiva et al. (2017). We establish CMOs' party affiliation by searching for matches in data sets covering candidates running for local, regional and national office in Norway. For this purpose we rely on candidate names, birth years, and municipalities of residence. For candidate names we use a fuzzy-matching method to account for occasional spelling errors, typos or differences in the treatment of middle names. We subsequently do extensive quality checks of our resulting matches. This allows us to reduce any danger of misclassification. As we have access to administrative data on all CMOs, we can also account for (female) CMOs changing their name after marriage.

For the local and regional level of government, we rely on candidate data as organized by Fiva et al. (2020). At the local government level, we have data on all candidates running in the last five municipal elections in, respectively, 419, 354, 228, 428 and 356 municipalities (in total 299,926 candidate-year observations). We supplement these data with additional information on mayors (3,600 mayor-year observations) from 1971-2019, obtained from the Norwegian Center for Research Data (NSD). At the regional government level, we collected data on all elected candidates in the 1975-2019 elections, all non-elected candidates in the 2003-2019 period, and about half of non-elected candidates in the 1975-1999 period (in total 75,756 candidate-year observations). For the national level, we rely on the Fiva and Smith (2017) data set which covers the universe of candidates running in the 1906-2017 period. In our search for the party affiliation of CMOs active in the 1991-2015 period, we rely on candidates running for national office in the 1961-2017 period (47,559 candidate-year observations).

These data allow us to establish CMOs' party affiliation based on a comprehensive search at all levels of government in Norway. We find 109 matches for national elections, 182 matches for regional elections, and 340 matches for local elections. This includes

overlapping matches whereby the same individual stands for election at different levels of government. In total, we identify the partisan leaning of 446 unique CMOs (though we drop two of these from our final sample due to their unstable party bloc affiliation over time). As documented in the main text, the identified partisan leaning predates the CMO's spell in office in the majority of cases (254 out of 446). For the remaining CMOs, we are forced to rely on party affiliations observed after their CMO spell. Using this information to approximate the partisan affiliation for these CMOs during their spell in office is feasible due to the extreme stability of political attachments over time in Norway (O'Brien and Shomer 2013; Cirone, Fiva and Cox 2020). Indeed, we show that party bloc switching occurs for only two of the 56 CMOs in our sample for whom we observe partisan affiliations at multiple points in time. More generally, we can document that only 1% of all 56,000 candidates running in the 2003 local elections have switched party bloc even after 16 years (for details, see Section 3.3 in the main text). Such temporal stability of political attachments allows us to include in our sample all CMOs with an identified political leaning.

The CMO is classified as aligned if the CMO's party affiliation matches that of the council majority. This means that the CMO is defined as aligned if (s)he is affiliated with the majority party bloc. Party blocs are defined as follows: Right-wing bloc: Progress Party, Conservative Party, Liberal Party, Christian Democratic Party, Center Party and other right-wing lists. Left-wing bloc: Red Party (before 2007, Red Electoral Alliance), Socialist Left Party, Labor Party and other left-wing lists. Following Fiva et al. (2017), we classify independent local lists (23 matches) as belonging to the right-wing bloc.

C.3 Delegation of budgetary powers

The Local Government Organizational Database provides extensive information about the internal organization of Norwegian local authorities, including the extent of budgetary delegation. The data has originally been collected by means of repeated survey questionnaires to local authorities. The complete database is through the Norwegian Center for Research Data (NSD).[5]

The key variable of interest for our analysis relates to the delegation of budgetary powers to the CMO. In Norway, local governments have various ways to organize the preparatory stages of the budget process before the local executive board submits the final proposal to the local council for formal approval. Crucially, the budgetary preparations can thereby involve the CMO to different degrees. In effect, three main approahces are available:

- A: The bottom up process: The administrative agencies and standing political committees draft budget proposals, which are subsequently processed by the CMO. The CMO submits a revised budget proposal for the executive board.

- B: The centralized administrative process: The CMO presents a coherent budget proposal for treatment in the standing committees. The executive board prepares its proposal on basis of CMO and committee proposals.

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[5]The database is "Kommunal- og moderniseringsdepartementets Organisasjonsdatabase for kommuner og fylkeskommuner". For detailed documentation, see https://nsd.no/nsddata/serier/kommunalorganisering.html.

- C: The centralized political process: The executive board initiates and controls the budgetary process, collecting information from the standing committees and the CMO. Using this information, the executive board submits its proposal to the local council.

Delegation to the CMO in our analysis is set to 1 when the municipality employs either the bottom up process (A) or the centralized administrative process (B), and zero otherwise.

Annual data on the budgetary process is available for the period 1991-2008, and subsequently also for the years 2012 and 2016. The aggregate statistics of our dataset correspond exactly to those in the documentation reports. This typology has been used in previous research, notably in Hagen and Vabo (2005).

Interpolation

The dataset on budgetary delegation has missing observations deriving both from years when no surveys were fielded to collect the data, and from some municipalities not answering the survey in certain years. While our main analysis relies only on the available data, we also engaged in robustness checks where we interpolated the data to get more complete time-series. In cases where we miss an observation for a particular local authority in a particular year, we interpolate by inserting the subsequent observation. For example, if data on delegation is missing for 1997, but not for 1996 or 1998, we replace the missing observation with the one from 1998.

Data collection did not include two three-year periods, i.e. 2009-2011 and 2013-2015. We use the Stata module nnipolate, and apply nearest neighbour interpolation for the delegation indicator. When we have municipality-level delegation data for the start- and end-points, we apply the procedure to fill in missing values using the previous or next known value of delegation, depending on which is closer in time. When the previous and next values are equally distant (i.e. in the years 2010 and 2014), we use the next observation (i.e. delegation observations for 2012 and 2016). Figure C.1 presents the original and interpolated delegation indicators for the 1991-2016 period.

Figure C.1: Delegation data with and without interpolation
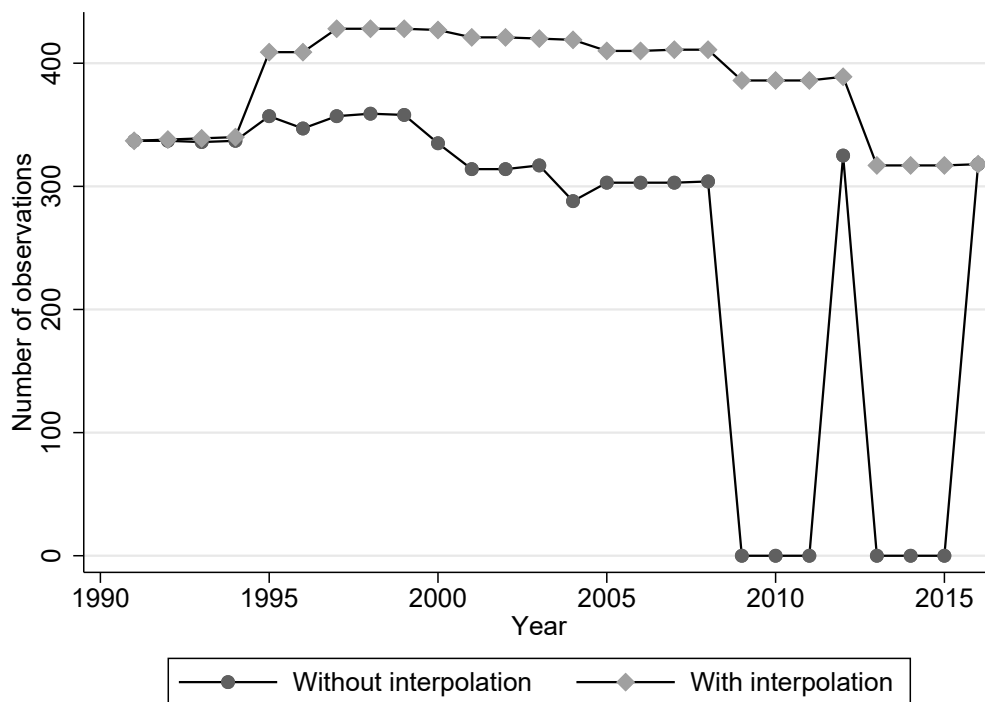
Note: The figure presents data on the share of Norwegian municipalities for which we have information about the level of delegation in the budget process. The dark grey dots cover only the raw data, while the light grey squares include interpolated data to correct for missing years.

C.4 Income data for local election candidates

From the administrative registers of Statistics Norway, we have access to income data for the 2007-2014 period. For candidates participating in the 2007 local elections (N=62,755), we can measure their change in income relative to the election year (2007) throughout the subsequent four-year election period (2008-2011). We proceed similarly for candidates participating in the 2011 local elections (N=59,486), but for this sample lack data for the fourth year of the election period (i.e. 2015). All income measures are expressed in 2015 Norwegian kroner.

As in the main analysis, we classify candidates as belonging to either the left-wing or right-wing bloc (see section C.2) based on their party affiliation. We focus on candidates aged 25–54 years in the election year, who for the most part have finished their formal schooling and are not on the verge of retirement during the election period (N=70,138). After excluding candidates we are unable to merge with administrative data and candidates with missing income data in any year, we are left with 62,795 candidate-election observations. 22% of these candidates were elected to the local council (N=13,953). We winsorize the income change data at the 1% level. Figure C.2 display the frequency of observations by income levels (top panel) and income changes (bottom panel).

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Figure C.2: Income data for local election candidates

Panel A: Income
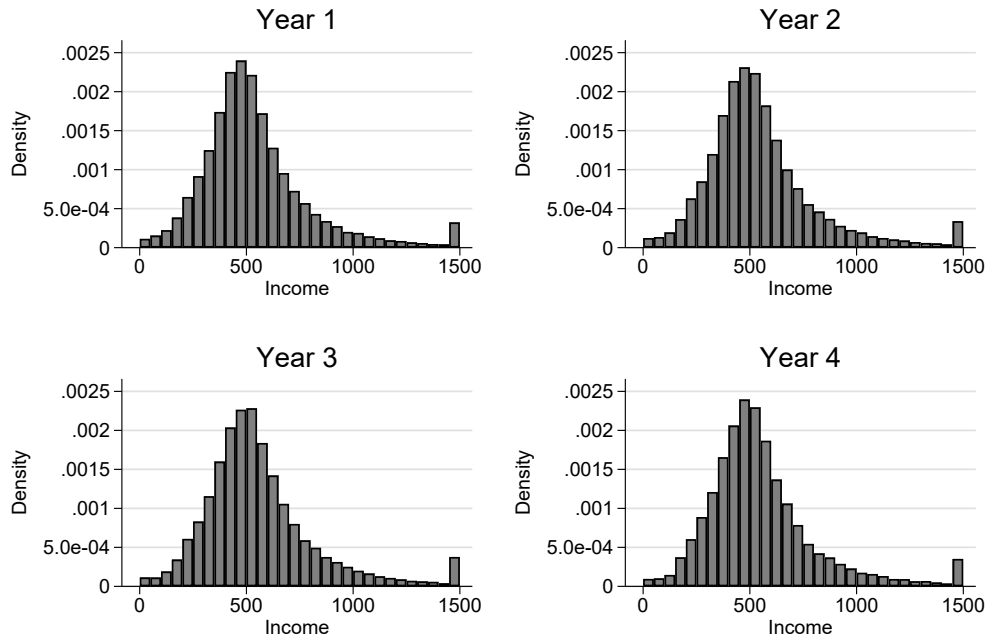
Panel B: Income changes
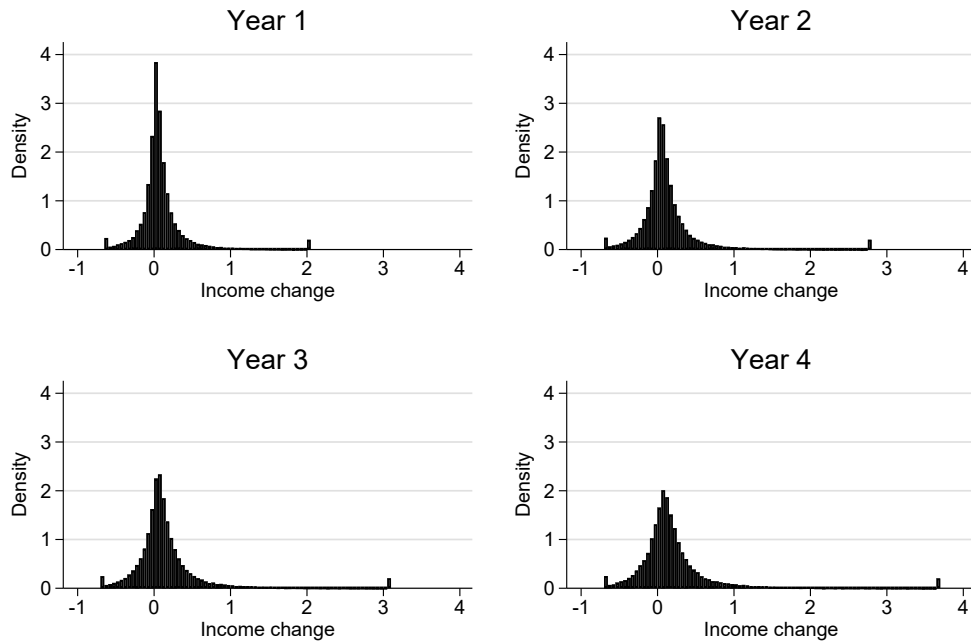
Note: The top panel of the figure presents year-by-year income data (censored at NOK 1 500 000). The bottom panel shows the winsorized income change data used for the analysis of Section 6.2.

D RD analysis of changes in council majority

In this section, we look at the impact on bureaucratic pay and turnover from changing the council majority. This has been the common empirical approach in the literature assessing how partisan (mis)alignment affects bureaucratic turnover, even though it rests on the dubious assumption that politician-bureaucrat preference alignment falls with a shift in government. The forcing variables in this RD analysis is the win margin of the incumbent bloc (defined as the political bloc with a seat majority *before* the relevant election). The incumbent bloc win margin ($\widetilde{Margin}$) equals the *left-wing win margin* if the left-wing bloc holds a seat-majority prior to the election. If the right-wing bloc holds a seat majority, $\widetilde{Margin} = (-1)\cdot$ *left-wing win margin*. Naturally, this variable has most of its density to the right of zero, as displayed in the bottom-left panel of Figure 1. The regression model takes the following form:

$$Y_i^t = \widetilde{\alpha} + \widetilde{\beta} IncumbentWin_i + \widetilde{\gamma_1} \widetilde{Margin}_i + \widetilde{\gamma_2} \widetilde{Margin}_i \cdot IncumbentWin_i + \widetilde{\epsilon}_i \quad (2)$$

where $IncumbentWin$ is an indicator variable equal to 1 when the incumbent political bloc retains a council seat majority, and 0 otherwise. The key dependent variables (Y_i^t) are changes in bureaucratic pay (i.e. CMO gross salary of municipality i from the last year before the election to year t) and bureaucratic turnover (1 if the CMO of municipality i in place before the election is replaced by year t, 0 otherwise). The coefficient of interest is $\widetilde{\beta}$, which reflects the causal effect of having the same bloc majority both before and after the election.

The results are graphically presented in Figure D.1. The top panel shows four RD plots relating contemporaneous shifts in council majorities (year $t = 0$) to changes in bureaucratic pay over the election period (year $t = 1$, 2, 3 or 4). The bottom panel of each figure plots the RD estimates with corresponding 95% confidence intervals. The central observation in Figure D.1 is that a change in the council majority in itself has no clear effect on bureaucrats' wage in subsequent years. This null finding is independent of the number of years we allow to elapse in the election period. Furthermore, as reported in Table D.1, it is equally persistent when changing the bandwidth and polynomial used for implementing the RD. The point estimates never approach statistical significance at conventional levels, and in effect are equally likely to be positive or negative. We also investigate whether a change in the council majority affects the probability that the CMO leaves her position in the years following an election. We find no evidence that this is the case, see Figure D.2. If anything, the results for years 1 and 2 suggest that a shift in council majority initially works to weakly *reduce* bureaucratic turnover. However, these effects are not statistically significant at conventional levels, and are quite imprecisely estimated.

Figure D.1: Incumbent re-election and bureaucrat remuneration
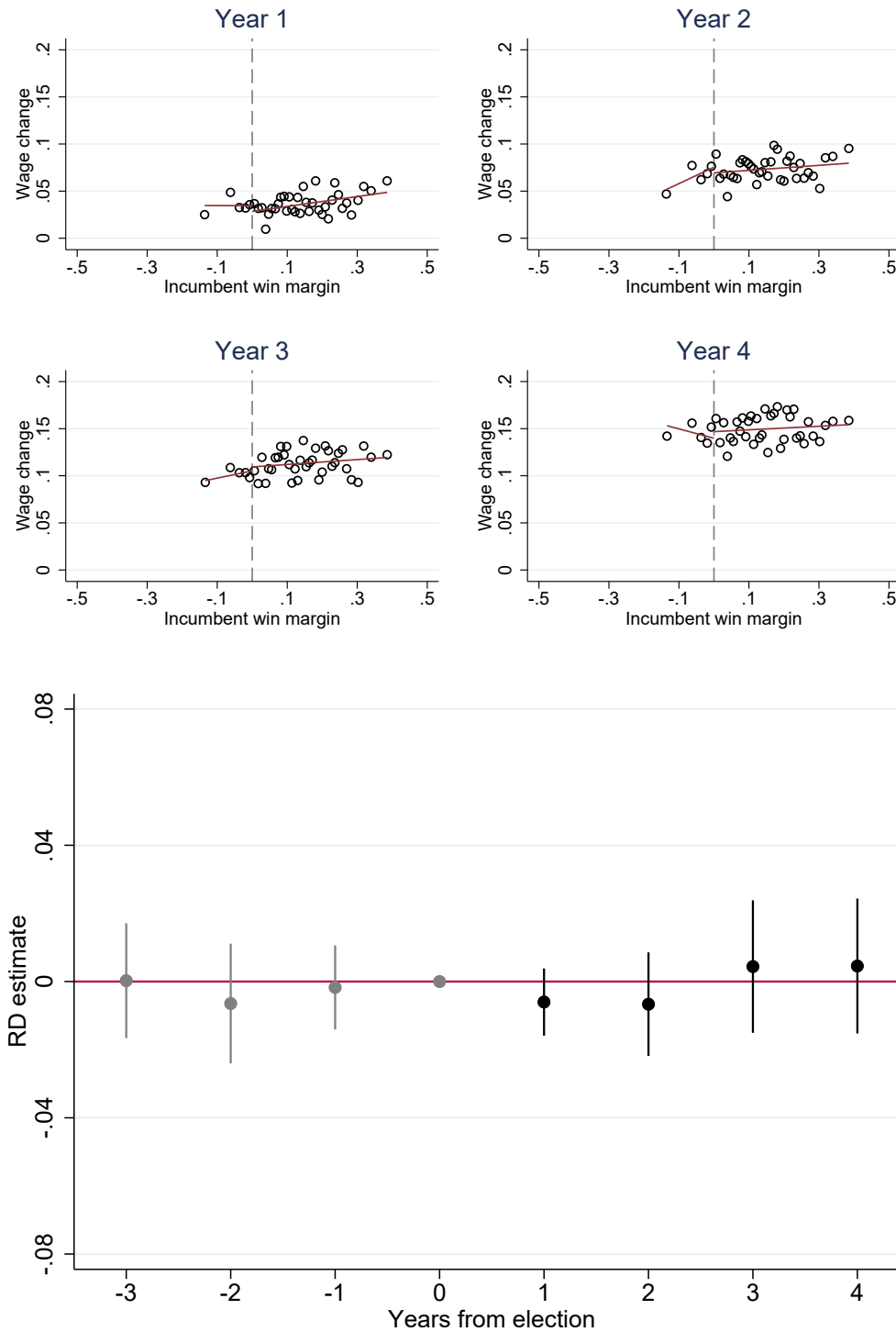
Note: The top panel displays RD plots showing how changes in bureaucratic remuneration, from year 0 to year 1, 2, 3, and 4, depends on incumbent re-election. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations. The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Gray bars are based on pre-election years, black bars are based on post-election years.

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Figure D.2: Incumbent re-election and bureaucratic turnover
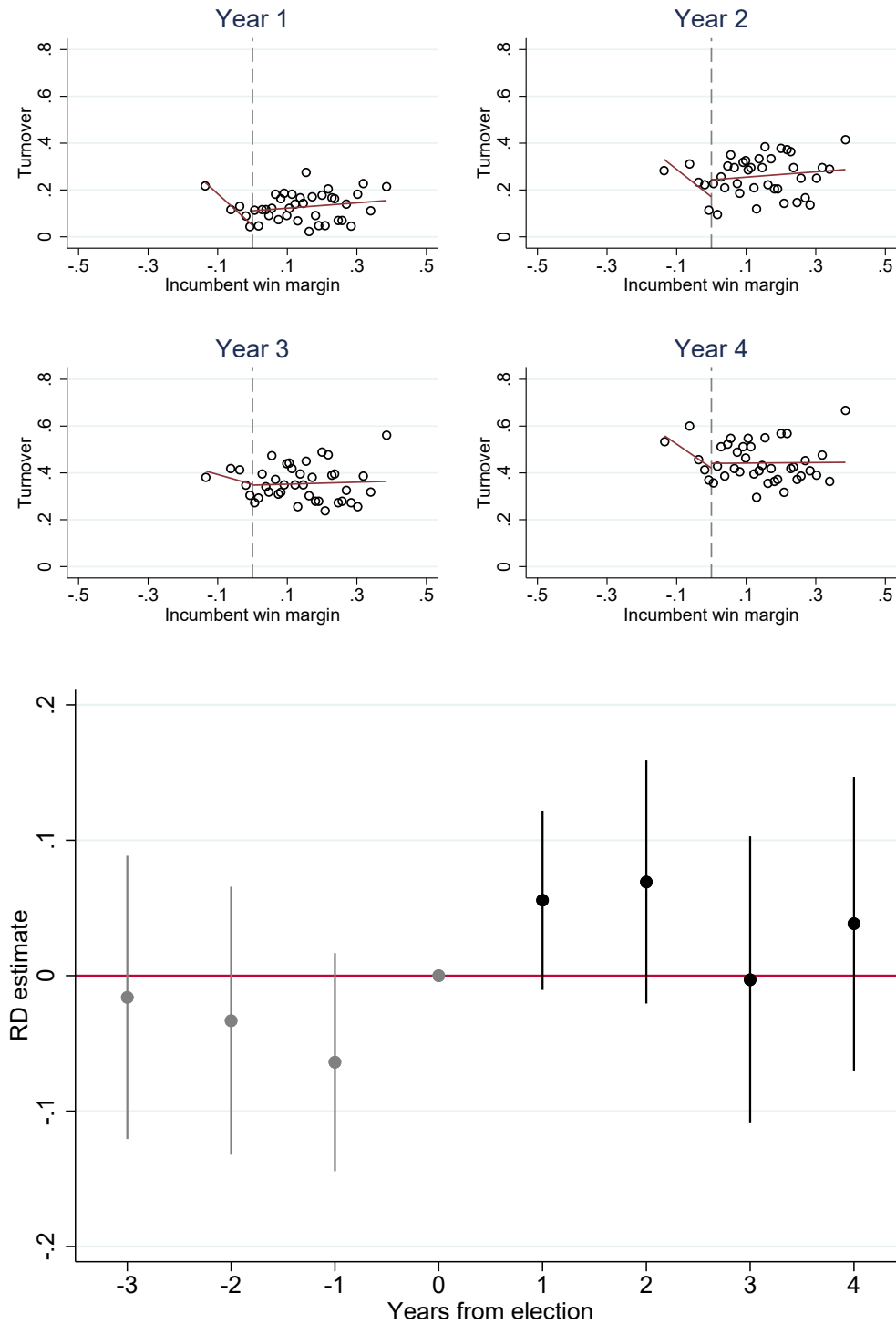
Note: The top panel displays RD plots showing how bureaucratic turnover, from year 0 to year 1, 2, 3, and 4, depends on incumbent re-election. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same number of observations). The bottom panel shows RD estimates along with 95 % confidence intervals using the full bandwidth and a triangular kernel. Gray bars are based on pre-election years, black bars are based on post-election years.

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Table D.1: RD estimates of incumbent re-election on bureaucratic remuneration

Panel A: One year after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	-0.006	-0.006	0.006	-0.007	-0.002
	(0.005)	(0.007)	(0.010)	(0.005)	(0.006)
Bandwidth	0.500	0.500	0.060	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	226	226	157	140	90
N right of cut-off	1504	1504	257	213	94

Panel B: Two years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	-0.007	-0.008	0.007	-0.006	0.001
	(0.008)	(0.010)	(0.016)	(0.008)	(0.011)
Bandwidth	0.500	0.500	0.056	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	223	223	146	135	88
N right of cut-off	1507	1507	235	211	93

Panel C: Three years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.004	0.005	0.003	0.002	-0.004
	(0.010)	(0.013)	(0.019)	(0.009)	(0.012)
Bandwidth	0.500	0.500	0.058	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	223	223	157	141	91
N right of cut-off	1494	1494	245	212	92

Panel D: Four years after the election

	(1)	(2)	(3)	(4)	(5)
RD estimate	0.005	-0.004	0.014	-0.001	0.002
	(0.010)	(0.013)	(0.020)	(0.009)	(0.013)
Bandwidth	0.500	0.500	0.061	0.050	0.025
Order of polynomial	1	2	1	0	0
N left of cut-off	228	228	159	141	91
N right of cut-off	1498	1498	257	211	91

Note: The reported RD estimates in column (1) correspond to $\widetilde{\beta}$ from Equation (2), which are shown in the bottom panel of Figure D.1. In column (2), a second-order polynomial in the forcing variable is included on each side of the discontinuity. In column (3) we use a linear control function and apply the bandwidth suggested by the Calonico et al. (2017) method. In column (4) and (5), we drop the control function and compare differences in means close to the cut-off. Standard errors clustered at the CMO level in parentheses.