CESifo WORKING PAPERS

7895
2019

October 2019

# Political Alignment and Bureaucratic Pay

*Jon H. Fiva, Benny Geys, Tom-Reiel Heggedal, Rune Sørensen*

CESifo

## **Impressum:**

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editor: Clemens Fuest
www.cesifo-group.org/wp

An electronic version of the paper may be downloaded
· from the SSRN website: www.SSRN.com
· from the RePEc website: www.RePEc.org
· from the CESifo website: www.CESifo-group.org/wp

CESifo *Working Paper No. 7895*
*Category 2: Public Choice*

# Political Alignment and Bureaucratic Pay

## Abstract

We study the private gains to bureaucrats from their political alignment with elected politicians. 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 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, we find that politician-bureaucrat alignment significantly increases top bureaucrats' wage even in the Norwegian civil service system. Our results go against predictions from models with policy-motivated bureaucrats, but are consistent with politically aligned principal-agent matches being more productive.

JEL-Codes: D730, H700, J410.

Keywords: bureaucracy, civil service, remuneration, principal-agent, ally principle.

*Jon H. Fiva*
*BI Norwegian Business School*
*Oslo / Norway*
*jon.h.fiva@bi.no*

*Benny Geys*
*BI Norwegian Business School*
*Oslo / Norway*
*benny.geys@bi.no*

*Tom-Reiel Heggedal*
*BI Norwegian Business School*
*Oslo / Norway*
*tom-reiel.heggedal@bi.no*

*Rune J. Sørensen*
*BI Norwegian Business School*
*Oslo / Norway*
*rune.sorensen@bi.no*

October 2, 1019
We are grateful to Reidar Vøllo for excellent research assistance. We also thank Jørgen Andersen, Monika Banaszewska, Love Christensen, Alexandra Cirone, Evan Crawford, Carl Dahlström, Julia Fleischer, Olle Folke, Simon Galle, Timothy Goodspeed, Saad Gulzar, Vaiva Kalesnikaite, Diana Moreira, Johanna Rickne, Carlos Velasco Rivera, Kaare Strøm, and Rocıo Titiunik and for thoughtful comments and suggestions. The authors gratefully acknowledge financial support from the Norwegian Research Council (grant nr. 281191). Benny Geys also gratefully acknowledges financial support from FWO Vlaanderen (grant nr. G000218N).

# 1 Introduction

A well-functioning bureaucracy is a key prerequisite for efficient policy making. The complexity and range of policy issues facing political decision-makers indeed 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 any 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; Alesina and Tabellini 2007; 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 commonly 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 academic research in recent years (e.g. Gallo and Lewis 2012; Iyer and Mani 2012; Akhtari, Moreira and Trucco 2017; Bach and Veit 2018; Colonnelli, Teso and Prem 2019; Toral 2019).[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 partisan patronage – and its resulting impact on politician-bureaucrat political (mis)alignment – influences bureaucratic pay. From theory, the effect of political alignment on bureaucratic pay is ambiguous. On the one hand, theories of *motivated agents* suggests that bureaucrats should obtain less generous pay when preferences are aligned. In the canonical Besley and Ghatak (2005) model,

[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' origin from particular localities. The social proximity arising from bureaucrats' work placement in their home district is thereby 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.

bureaucrats care about policy outcomes and are therefore willing to put in more effort to achieve these outcomes. 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 serve "as 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 – and the implications of ideological influences on bureaucratic selection more generally – are hard to achieve because agency preferences are extremely 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; Dahlström and Holmgren 2019; Xu 2018).[2] 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, however, the responsibility of the 'Chief Municipal Officer' (the top administrative position in Norwegian local government; henceforth CMO). While the

[2]Lowande (2018, p. 874) employs a similar strategy to study how "ideological disagreement with agencies drives the oversight behavior of legislators", while Bolton, De Figueiredo and Lewis (2018) and Doherty, Lewis and Limbocker (2017) use it to study the role of elections on career civil servants' turnover decisions.

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 possible (mis)alignment with the political leaning of the ruling government(s) during the CMO's time in office. Our direct measurement offers a clear improvement compared to the imperfect proxies of earlier studies, and allows analyzing the private financial implications of politician-bureaucrat preference (mis)alignment.

Colonnelli, Teso and Prem (2019) 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. Our analysis differs from theirs in a number of important ways. First, we focus explicitly on 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, our Norwegian case consistently ranks among the highest quality of governance in the world on the World Bank's "World Governance Indicators", compared to Brazil's position around the 40th percentile 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

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

– within Norway's two-bloc party system – the local council seat majority is as-good-as-randomly assigned for municipalities where the left-wing bloc receives around 50% of the seats (Fiva, Folke and Sørensen 2018). We document a positive effect of council-bureaucrat political alignment on wage growth, which appears to increase throughout the legislative 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, inrceased 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 2019), is not widespread in Norway, and is unlikely to drive our main findings.

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

concluding discussion.

# 2 Theory

In classic Weberian models of public administration, civil servants are viewed above all as professionals. They are career administrators with an ethos emphasizing political neutrality and technical expertise, who offer advice and implement policies without any presumption of influence on the political aspects of the decision-making process (Finer 1941; Weber 1978; Boyne et al. 2010). Should these administrators have specific political or ideological dispositions, then the (in)formal design of bureaucratic organizations will provide appropriate incentives – through the availability of permanent positions as well as promotions that depend on competence and performance at the lower levels – for employees nonetheless to serve their 'political master' (Weber 1978; Geys, Heggedal and Sørensen 2017; Rasul and Rogger 2018; Bertrand et al. 2019). It is clear that within such ideal-type bureaucracies, politician-bureaucrat preference alignment is irrelevant. As a direct consequence, political shifts in elected assemblies resulting in changes to the politician-bureaucrat alignment status would not be expected to affect bureaucratic turnover, pay or discretion. This prediction acts as our null hypothesis.

Weber himself was well aware of the real-world limitations of this ideal bureaucratic model. In fact, he famously noted:

> *"Under normal circumstances, the power position of a fully developed bureaucracy is always overthrowing. The 'political master' finds himself in the position of the 'dilettante' who stands opposite the 'expert', facing the trained official who stands within the management of administration."* (cited in Ostrom 2008, p. 28)

This argument typifies the central tension between politicians as principals and bureaucrats as agents in the development and implementation of public policies, which lies at the heart of a modern agency-theoretical perspective on public bureaucracies. Agency

theory is principally 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).

Importantly, politician-bureaucrat preference alignment can also be expected to have implications for bureaucrats' pay. How preference alignment affects the optimal wage in a principal-agent relationship depends on the relative role and importance of three potential underlying mechanisms.[4] 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 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 will work 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; Gailmard and Patty 2007; Ellingsen and Johannesson 2008; Rattsø and Stokke 2019).

Second, politician-bureaucrat preference alignment may improve the productivity of a match. This could stem from the fact that people generally 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. This line of argument is also consistent with scholarship maintaining that politicians view political appointments as a means to extend control over public 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 will work to push *up* bureaucrats' pay.

Finally, favoritism and cronyism may also be a reason to expect bureaucrats' pay to

[4]In Appendix A we develop a principal-agent model to analyze more formally how different mechanisms of political preference alignment affects the optimal wage contract.

increase in politically aligned matches. That is, elected politicians might financially benefit fellow party members by mere 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 the underlying mechanism is favoritism, politicians thus obtain little incentive to delegate more decision-making powers to aligned bureaucrats. Doing so would indeed bring no benefits to politicians in terms of increased control over public policy outcome. 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 more decision-making powers to aligned bureaucrats in order to benefit from their higher productivity (Lazear 2000; Bendor, Glazer and Hammond 2001).

Whatever the underlying mechanism, the discussion above highlights that elected politicians are likely to have a clear 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 – will therefore be expected to 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).

# 3 Institutional setting and data

## 3.1 Norwegian local governments

Norway has three levels of government: the local level with currently 428 municipalities, the regional level with 19 counties and the national level. Our analysis deals exclusively with the municipal level of government. Municipalities have extensive regulatory respon-

sibilities, and are also 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 is the main political body of the municipal government with 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 empirical analysis below). The central political cleavage in Norwegian politics – at the local as well as at the national level – thereby lies between a left-leaning socialist bloc and a right-leaning conservative camp. The partisan composition of these two blocs is detailed in the bottom section of Table 1 below, and has been stable for several decades.

## 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 public policies adopted by the municipal council, *ii)* ensuring that 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 also 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. These positions represent the most senior civil servant in a given ministry, which holds key responsibility for putting government policy into practice.

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 the 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 (again not the mayor) decides the wage contract for the

[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.

CMO at the time of hiring as well as any subsequent revisions. Alhough the council can legally 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 provided by 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 from office. Such conflicts involving the CMO 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, which made it even easier for the local political elite to oust CMOs from their position. By signing a contract including provisions for severance pay, CMOs thus formally renounce the standard legal entitlements to dismissal protection.

## 3.3 Data

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

First, 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 the building blocks for our central dependent variable – *CMO wage*.

Second, 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 clearly signposts one's political color and partisan identity. Approximately 27% of all 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). About half of the CMOs with electoral histories do not win political office (244 out of 446), and most of them run for office prior to becoming CMO (254 out of 446). The latter is a lower bound since we lack data on local election lists prior to 2003, and may thus characterize some CMOs running after their first spell in office even though they already stood in local elections during the 1970s, 1980s or 1990s. For our central explanatory variable, we create simple dichotomous operationalization of council-bureaucrat ideological alignment – *Aligned* – equal to 1 when the CMO and the council majority belong to the same political bloc, and 0 otherwise.[6]

Third, data on the delegation of budgetary powers and responsibilities to CMOs over time is extracted from the Norwegian government's "Local government organizational database". The data were originally collected using surveys sent to local authorities,

[6]We include in our sample all CMOs with an identified political leaning. Still, some of these only run for election after their CMO spell, and one might worry that exposure to particular types of politicians (i.e. working with a left-leaning council majority) may affect CMOs' future political leaning. In practice, this does not seem to be a major problem. Of the CMOs whose party affiliation we observe both before and after their CMO spell (N=56), 95% keep their partisan bloc affiliation over time (excluding transitions to local parties). This is consistent with cross-country evidence on party switching presented in O'Brien and Shomer (2013), which indicates that such behavior is extremely rare in Norway – in sharp contrast to countries such as Brazil, Israel and Italy.

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 legislative period(s) (see Appendix C.4).

## 3.4 Descriptives

Table 1 presents descriptive statistics for all CMOs active between 1991 and 2015.[7] We separate between the 446 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 (81%), 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.3, there is substantial variation across CMOs in this annual gross base salary. This reflects the extensive flexibility of the municipalities in setting these wages.

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

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, 44% 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, 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. Still, 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, 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.

Table 1: Summary statistics on CMO background (first spell)

| | (1) With party affiliation | | (2) No party affiliation | | (3) Difference | |
|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Est. | SE |
| **CMO-specific variables** | | | | | | |
| First year as CMO | 2000.854 | (8.371) | 2000.391 | (8.433) | -0.463 | (0.467) |
| Age first year | 48.137 | (8.224) | 46.559 | (7.665) | -1.578*** | (0.434) |
| Female CMO share | 0.177 | (0.382) | 0.193 | (0.395) | 0.016 | (0.022) |
| Years of education | 16.171 | (2.009) | 16.418 | (1.806) | 0.247** | (0.108) |
| Wage (in 1000 NOK) | 549.770 | (158.443) | 566.172 | (175.428) | 16.402* | (9.496) |
| Delegation | 0.807 | (0.395) | 0.814 | (0.390) | 0.007 | (0.029) |
| Delegation (interpolated) | 0.770 | (0.422) | 0.793 | (0.405) | 0.024 | (0.025) |
| Spell duration | 4.664 | (4.952) | 4.938 | (5.361) | 0.274 | (0.292) |
| Total number of spells | 1.168 | (0.475) | 1.247 | (0.579) | 0.079** | (0.031) |
| Aligned at start of spell | 0.626 | (0.485) | — | — | — | — |
| Aligned at end of spell | 0.620 | (0.486) | — | — | — | — |
| Left-wing CMO | 0.433 | (0.496) | — | — | — | — |
| **Municipal-specific variables** | | | | | | |
| Left-wing mayor | 0.385 | (0.487) | 0.416 | (0.493) | 0.031 | (0.027) |
| Left-wing seat share | 0.385 | (0.158) | 0.383 | (0.149) | -0.002 | (0.008) |
| Election year | 1998.058 | (8.789) | 1997.506 | (8.805) | -0.552 | (0.489) |
| Population (log) | 8.157 | (1.059) | 8.434 | (1.096) | 0.278*** | (0.060) |
| Share of children | 0.078 | (0.016) | 0.079 | (0.016) | 0.002* | (0.001) |
| Share of young | 0.122 | (0.019) | 0.123 | (0.019) | 0.001 | (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 | 63.283 | (3.824) | 62.549 | (3.582) | -0.733*** | (0.203) |
| Longitude | 11.418 | (5.390) | 10.933 | (4.984) | -0.484* | (0.284) |
| **CMO party affiliation** | | | | | | |
| **Left-wing affiliation** | | | | | | |
| Red Electoral Alliance (RV) | 0.016 | (0.124) | | | | |
| Socialist Left Party (SV) | 0.078 | (0.269) | | | | |
| Labor Party (DNA) | 0.332 | (0.471) | | | | |
| Other left-wing parties | 0.007 | (0.082) | | | | |
| **Right-wing affiliation** | | | | | | |
| Liberal Party (V) | 0.094 | (0.292) | | | | |
| Center Party (SP) | 0.121 | (0.327) | | | | |
| Christian Dem. Party (KrF) | 0.045 | (0.207) | | | | |
| Conservative Party (H) | 0.186 | (0.390) | | | | |
| Progress Party (FrP) | 0.043 | (0.202) | | | | |
| Other right-wing parties | 0.078 | (0.269) | | | | |
| N | 446 | | 1186 | | 1632 | |

*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.

To accommodate this concern, our RD analyses follow the simulation-based procedure proposed by Fiva, Folke and Sørensen (2018). This method has been subsequently 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, this method identifies the expected minimum vote share change that would flip the seat majority from the left-wing bloc to the right-wing bloc. In the following, we refer to this variable as the *left-wing win margin*.[8] 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.

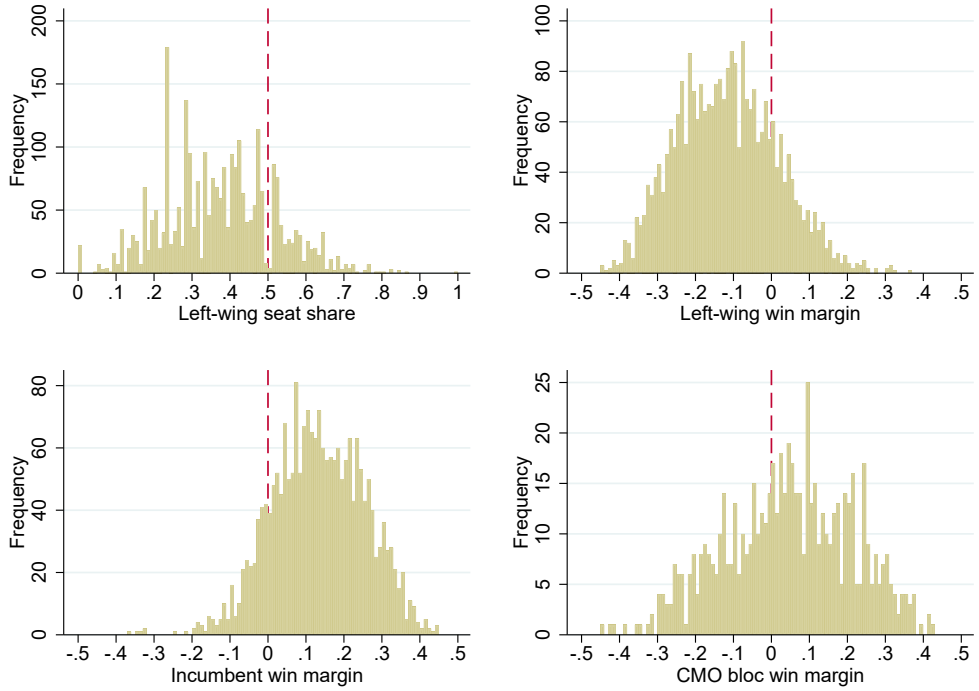
Before moving to a discussion of our analysis, the left panel of Figure 2 highlights that crossing the threshold for winning a majority of seats (i.e. left-wing win margin $> 0$) by construction always leads to a change in majority. This buttresses our sharp RD design below. The right panel of Figure 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). This is indeed the case since 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 the substantial shift in political power at the threshold.

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.[9]

[8] 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'*).

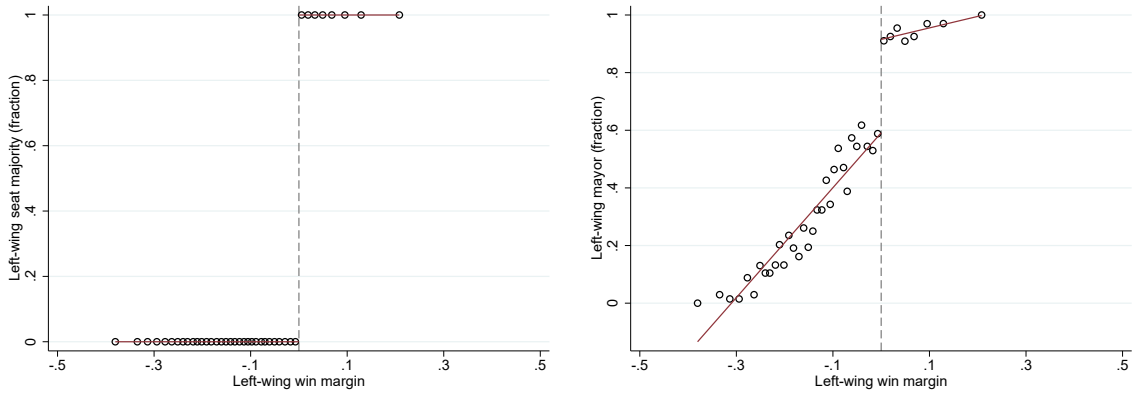
[9] For comparison, the bottom-left panel of Figure 1 shows the win margin of the incumbent political majority *before* the relevant election, which has been used as a source of exogenous variation due to political turnover in, for instance, (Boyne et al. 2010; Iyer and Mani 2012; Christensen, Klemmensen

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.

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.

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 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:

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

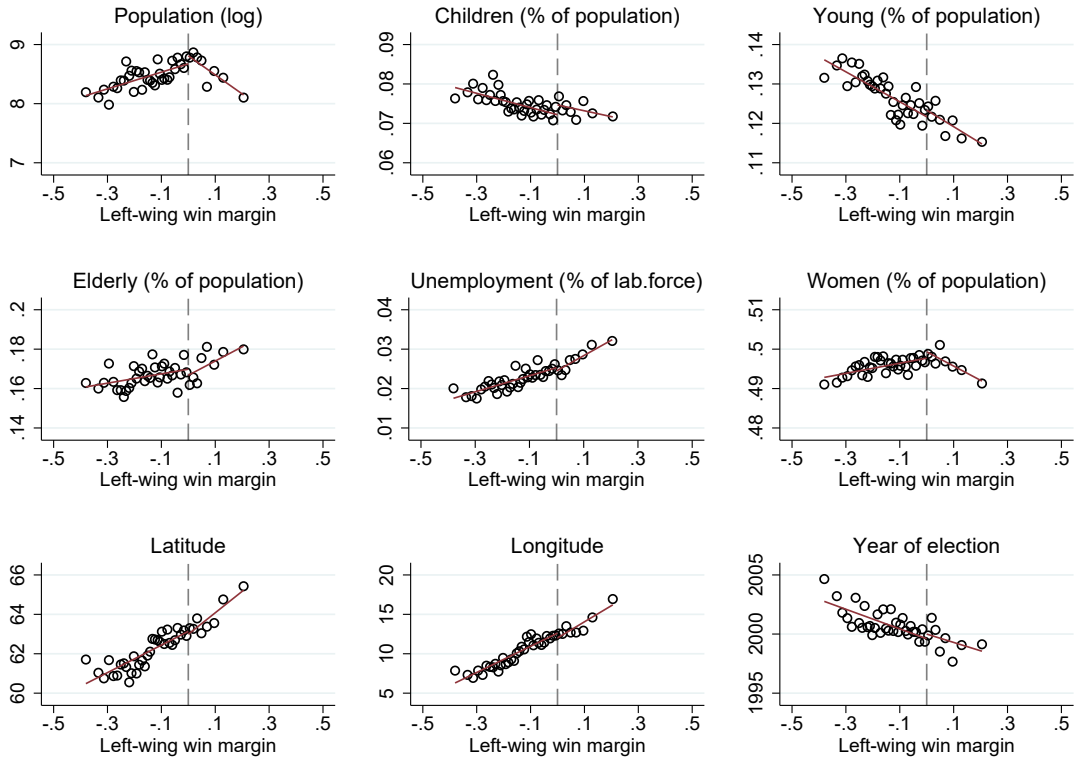
where *Aligned* is an indicator variable equal to 1 when the CMO is politically aligned with the council majority, and 0 otherwise. The dependent variable ($Y_i^t$) measures changes in bureaucratic pay (i.e. CMO gross salary of municipality $i$ from the last year before the election to year $t$) and bureaucratic turnover (1 if the CMO of municipality $i$ in place before the election is replaced by year $t$, 0 otherwise). The coefficient of interest is $\beta$, 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.4 illustrates that the same conclusion holds when we look at the forcing variable employed in our RD design.[10]

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.

[10]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. Although these, as a group, might differ from CMOs without an observable political affiliation, our sharp RD design nonetheless can 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 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 2 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)). Auxiliary analyses show that the treatment estimates are similar if we exclude observations where the CMO changed after the election (Appendix Figure B.6), as well as when we restrict the analysis to CMOs that appear on election lists prior to the relevant CMO spell (although statistical precision here is lower).[11] Importantly, in placebo checks based on pre-election years

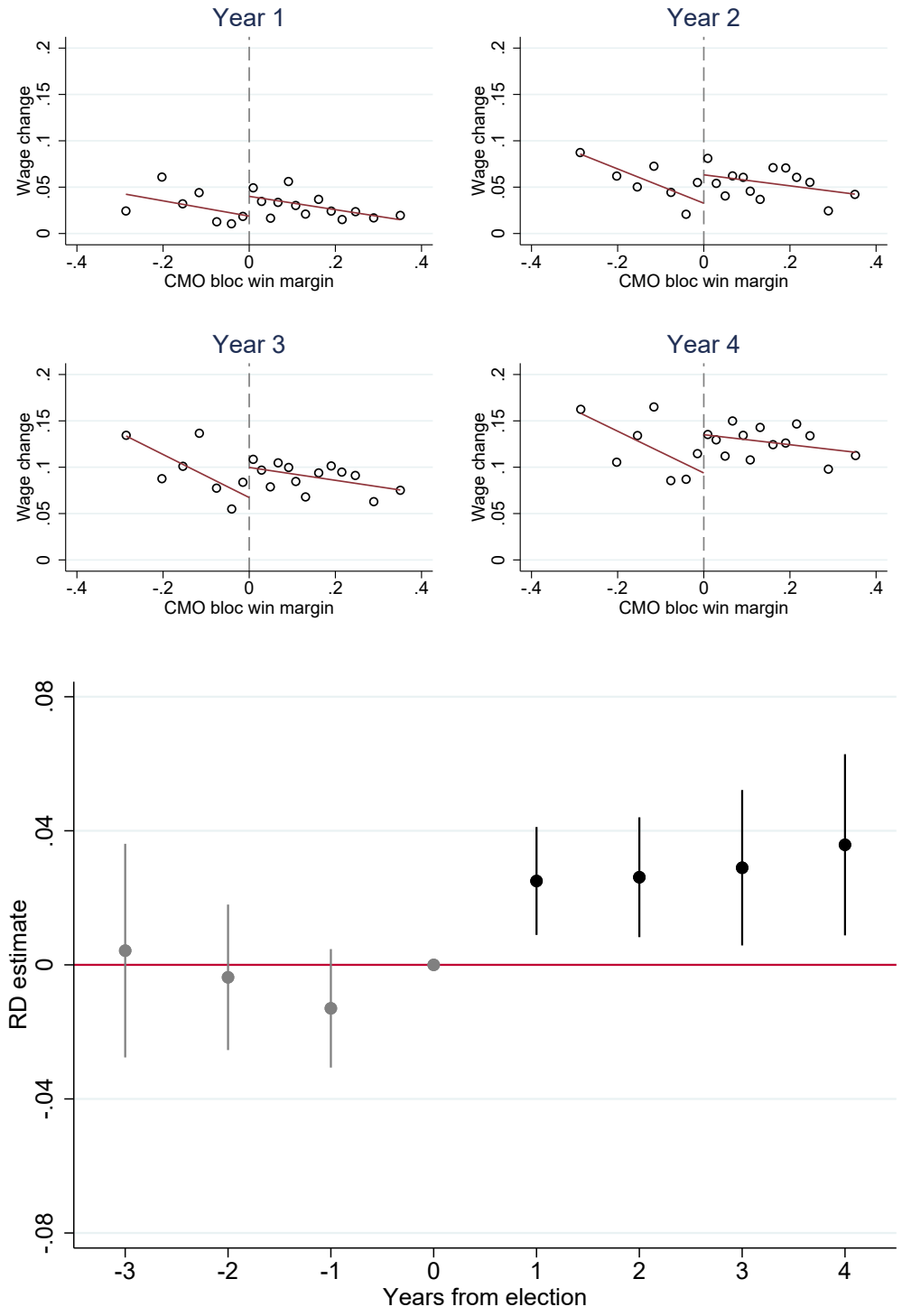
[11]The results from estimating equation (1) using bureaucrat turnover as the dependent variable are

(gray bars in the bottom panel of Figure 4), we do not see similar effects. This further strengthens the causal interpretation of our findings.

Overall, our results thus 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.

summarized in Appendix Figure B.5. This figure provides no clear evidence that CMO turnover is affected by alignment of the council majority and the CMO. Although legal and normative barriers in Norway might work to limit politicians' potential for hiring/firing bureaucrats (see above) and thereby could mitigate potential turnover effects (Hollibaugh 2015; Dahlström and Lapuente 2017), the confidence intervals throughout these estimations are large such that we cannot rule out substantial effects.

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 2: RD estimates of council-bureaucrat alignment on bureaucratic remuneration

**Panel A: One year after the election**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| RD estimate | 0.025 | 0.035 | 0.024 | 0.022 | 0.019 |
| | (0.008) | (0.011) | (0.016) | (0.009) | (0.014) |
| Bandwidth | 0.500 | 0.500 | 0.089 | 0.050 | 0.025 |
| Order of polynomial | 1 | 2 | 1 | 0 | 0 |
| N left of cut-off | 199 | 199 | 80 | 56 | 24 |
| N right of cut-off | 325 | 325 | 109 | 67 | 34 |

**Panel B: Two years after the election**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| RD estimate | 0.026 | 0.018 | 0.019 | 0.020 | 0.021 |
| | (0.009) | (0.013) | (0.018) | (0.010) | (0.016) |
| Bandwidth | 0.500 | 0.500 | 0.077 | 0.050 | 0.025 |
| Order of polynomial | 1 | 2 | 1 | 0 | 0 |
| N left of cut-off | 206 | 206 | 75 | 56 | 24 |
| N right of cut-off | 336 | 336 | 100 | 66 | 33 |

**Panel C: Three years after the election**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| RD estimate | 0.029 | 0.027 | 0.018 | 0.026 | 0.028 |
| | (0.012) | (0.016) | (0.023) | (0.013) | (0.018) |
| Bandwidth | 0.500 | 0.500 | 0.074 | 0.050 | 0.025 |
| Order of polynomial | 1 | 2 | 1 | 0 | 0 |
| N left of cut-off | 201 | 201 | 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 | 0.036 | 0.026 | 0.012 | 0.021 | 0.025 |
| | (0.014) | (0.019) | (0.027) | (0.015) | (0.022) |
| Bandwidth | 0.500 | 0.500 | 0.076 | 0.050 | 0.025 |
| Order of polynomial | 1 | 2 | 1 | 0 | 0 |
| N left of cut-off | 206 | 206 | 75 | 57 | 24 |
| N right of cut-off | 335 | 335 | 101 | 68 | 34 |

Note: The reported RD estimates in column (1) correspond to $\beta$ 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.

# 6 Mechanisms

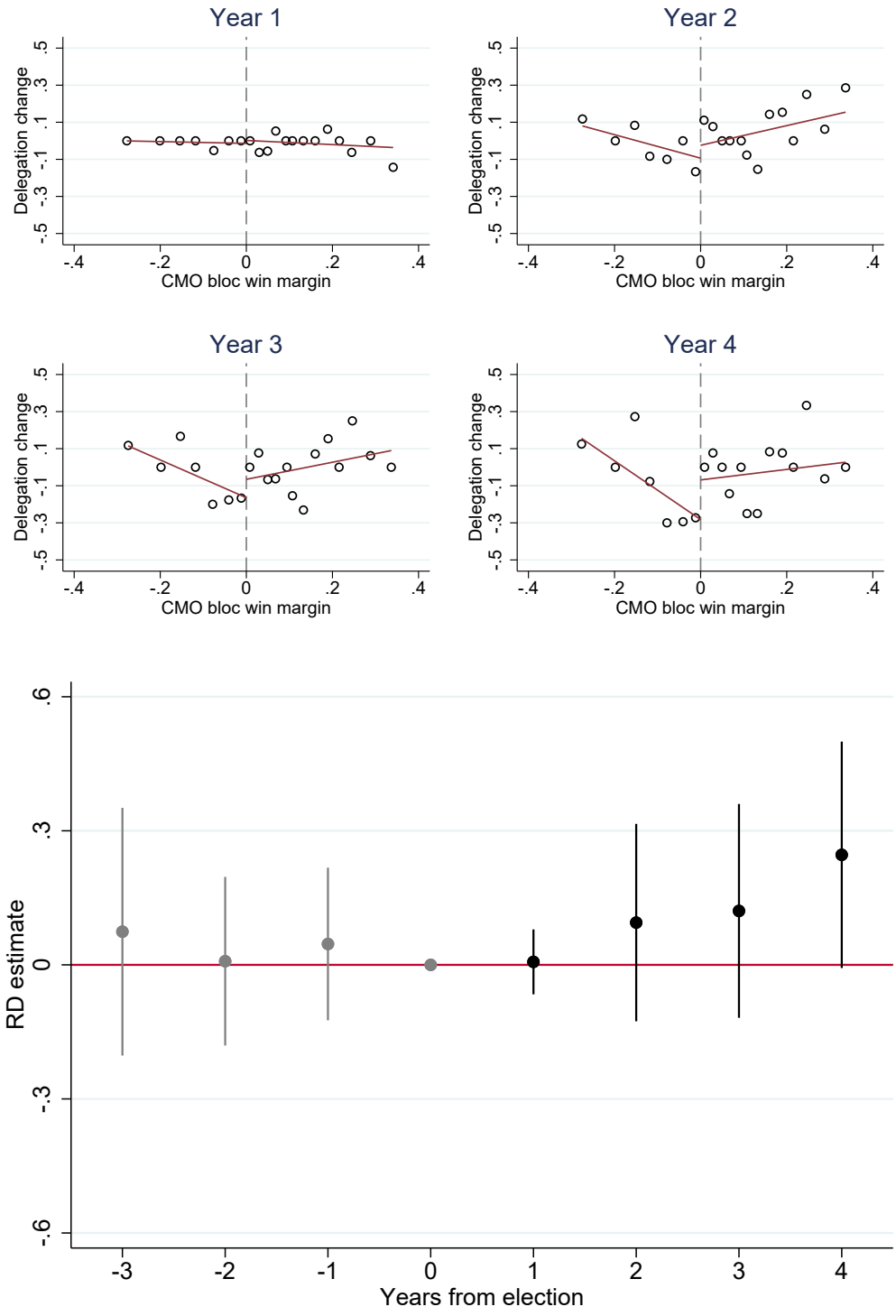
Figure 4 and Table 2 provide evidence that council-bureaucrat alignment matters for bureaucratic pay. In this section, we assess to what extent these results might be linked to delegation of tasks or derive from widespread political favoritism and cronyism.

## 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 5 and Table 3 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.7, 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 3: 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) | (0.084) | (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 | 130 | 130 | 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 $\beta$ 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 2019). In this section, we perform a comparable empirical analysis to asses whether similar political favoritism is widespread in Norway. The presence of such effects would bring into question our interpretation that the wage increases observed for aligned CMOs are due to higher productivity.

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.[12] Table 4 presents RD estimates with varying bandwidths and polynomials for each of the years in the election cycle. In line with the pattern in Figure 6, all point estimates are small and none of them reaches statistical significance at the 5 percent level.[13]

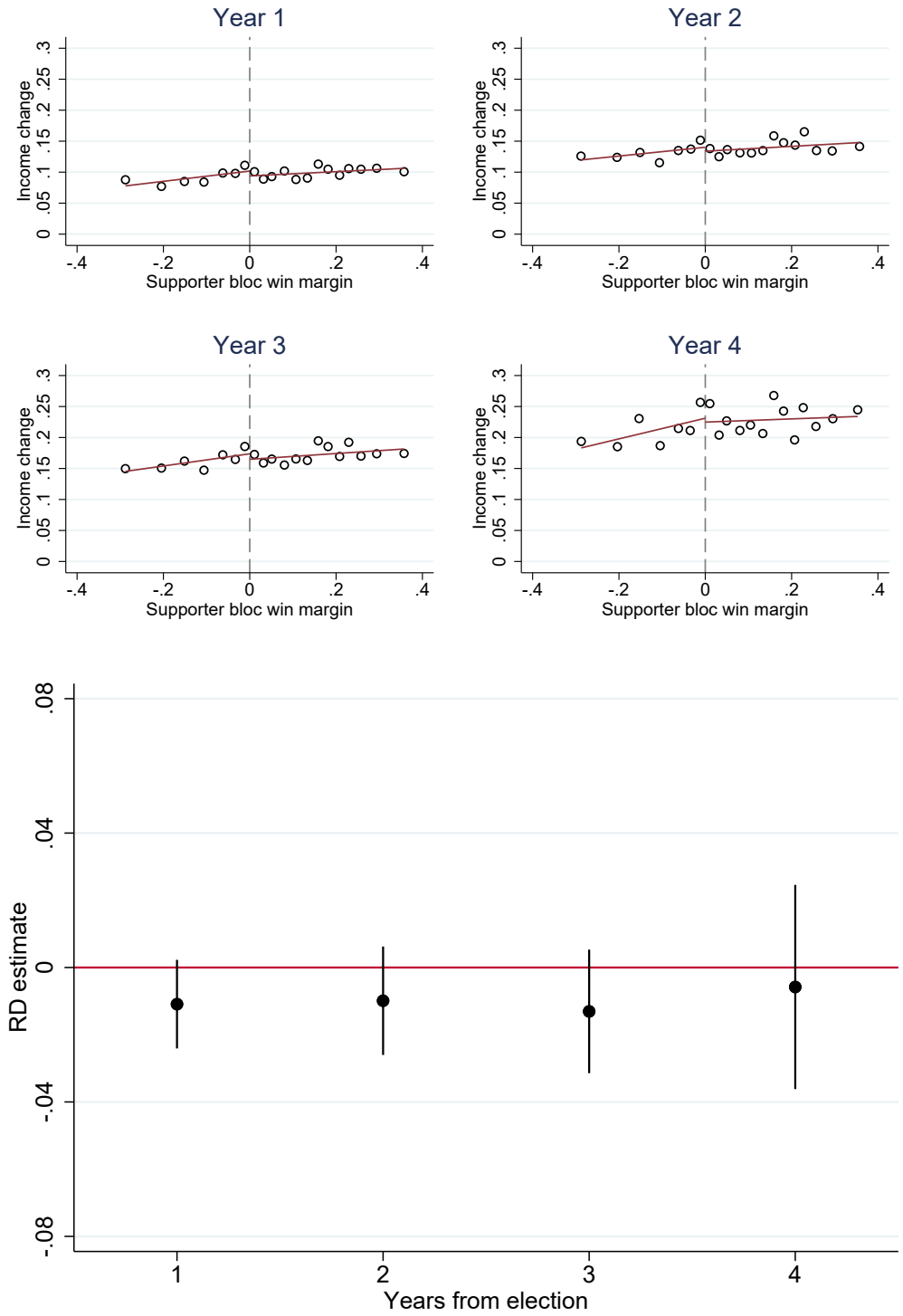
These null findings stand in sharp contrast to those presented in Colonnelli, Teso and Prem (2019). They use administrative data from Brazil and show that supporters of the

[12]Separate analyses of elected and non-elected candidates does not change this conclusion (see Appendix Figures B.8 and B.9)

[13]The confidence intervals are widest for "year 4" which is based on data from the 2007-2011 period, only.

winning political party receive substantial income increases after the election. However, the 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 already 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 are subjected to intensive media scrutiny. Overall, this highly institutionalized public transparency and extensive newspaper coverage benefits political accountability while working against widespread patronage and cronyism (Snyder and Strömberg 2010; Strömberg 2015). The results in this section thus cast strong 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.

Table 4: RD estimates of council-supporter alignment on supporter income

**Panel A: One year after the election**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| RD estimate | -0.011 | -0.020 | -0.016 | -0.013 | -0.016 |
| | (0.007) | (0.010) | (0.011) | (0.008) | (0.012) |
| Bandwidth | 0.500 | 0.500 | 0.142 | 0.050 | 0.025 |
| Order of polynomial | 1 | 2 | 1 | 0 | 0 |
| N left of cut-off | 21510 | 21510 | 13258 | 6596 | 3455 |
| N right of cut-off | 40658 | 40658 | 18401 | 7859 | 3577 |

**Panel B: Two years after the election**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| RD estimate | -0.010 | -0.022 | -0.021 | -0.011 | -0.018 |
| | (0.008) | (0.011) | (0.016) | (0.009) | (0.012) |
| Bandwidth | 0.500 | 0.500 | 0.093 | 0.050 | 0.025 |
| Order of polynomial | 1 | 2 | 1 | 0 | 0 |
| N left of cut-off | 21487 | 21487 | 9828 | 6592 | 3455 |
| N right of cut-off | 40581 | 40581 | 12273 | 7847 | 3573 |

**Panel C: Three years after the election**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| RD estimate | -0.013 | -0.023 | -0.013 | -0.007 | -0.020 |
| | (0.009) | (0.013) | (0.018) | (0.011) | (0.014) |
| Bandwidth | 0.500 | 0.500 | 0.089 | 0.050 | 0.025 |
| Order of polynomial | 1 | 2 | 1 | 0 | 0 |
| N left of cut-off | 21440 | 21440 | 9398 | 6574 | 3448 |
| N right of cut-off | 40511 | 40511 | 11585 | 7829 | 3565 |

**Panel D: Four years after the election**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| RD estimate | -0.006 | -0.008 | -0.001 | 0.003 | -0.004 |
| | (0.015) | (0.023) | (0.038) | (0.017) | (0.027) |
| Bandwidth | 0.500 | 0.500 | 0.078 | 0.050 | 0.025 |
| Order of polynomial | 1 | 2 | 1 | 0 | 0 |
| N left of cut-off | 12214 | 12214 | 5139 | 3941 | 2007 |
| N right of cut-off | 22225 | 22225 | 6758 | 5059 | 2328 |

Note: The reported RD estimates in column (1) the bottom panel of Figure 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 municipality level in parentheses.

# 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 so-called *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 bureaucratic turnover (e.g. Iyer and Mani 2012; Akhtari, Moreira and Trucco 2017; Bach and Veit 2018) and politically aligned individuals' likelihood to be appointed to (specific) public sector jobs (Brollo, Forquesato and Gozzi 2017; Xu 2018; Barbosa and Ferreira 2019; Colonnelli, Teso and Prem 2019). We analyze 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 largely 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

over public policy), as this mechanism induces optimal contracts with *higher* financial compensation. 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 do not examine political alignment between politicians, but rather *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, given the observed wage effect during individuals' spell as CMO, what is the impact on their 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 remuneration (which is set by the local council in Norway) and future income/wealth.

Finally, extensions of our work towards the impact of (mis)alignment on bureaucratic autonomy, entrenchment and accountability would allow a more encompassing evaluation of the overall welfare implications of partisan patronage on bureaucratic selection.

# References


Akerlof, George A. and Rachel E. Kranton. 2005. "Identity and the Economics of Organizations." *Journal of Economic Perspectives* 19(1):9–32.

Akhtari, Mitra, Diana Moreira and Laura Trucco. 2017. "Political Turnover, Bureaucratic Turnover, and the Quality of Public Services." Available at SSRN: https://ssrn.com/abstract=2538354.

Alesina, Alberto and Guido Tabellini. 2007. "Bureaucrats or Politicians? Part I: A Single Policy Task." *American Economic Review* 97(1):169–179.

Asher, Sam and Paul Novosad. 2017. "Politicians and Local Economic Growth." *American Economic Journal: Applied Economics* 9(1):229–273.

Bach, Tobias and Sylvia Veit. 2018. "The Determinants of Promotion to High Public Office in Germany: Partisan Loyalty, Political Craft, or Managerial Competencies?" *Journal of Public Administration Research and Theory* 28(2):254–269.

Barbosa, Klenio and Fernando V. Ferreira. 2019. "Occupy Government: Democracy and the Dynamics of Personnel Decisions and Public Finances." *NBER Working Paper* 25501.

Baskaran, Thushyanthan and Zohal Hessami. 2017. "Political alignment and intergovernmental transfers in parliamentary systems: Evidence from Germany." *Public Choice* 171(1-2):75–98.

Bénabou, Roland and Jean Tirole. 2003. "Intrinsic and Extrinsic Motivation." *Review of Economic Studies* 70(3):489–520.

Bénabou, Roland and Jean Tirole. 2006. "Incentives and Prosocial Behavior." *American Economic Review* 96(5):1652–1678.

Bendor, Jonathan, Amihai Glazer and Thomas Hammond. 2001. "Theories of Delegation." *Annual Review of Political Science* 4(1):235–269.

Bertrand, Marianne, Robin Burgess, Arunish Chawla and Guo Xu. 2019. "The Glittering Prizes: Career Incentives and Bureaucrat Performance." *Review of Economic Studies* forthcoming.

Bertrand, Marianne, Robin Burgess and Guo Xu. 2018. "Social Proximity and Bureaucrat Performance: Evidence from India." *NBER Working Paper* (No. 25389).

Besley, Timothy and Maitreesh Ghatak. 2005. "Competition and Incentives with Motivated Agents." *American Economic Review* 95(3):616–636.

Bø, Erlend E., Joel Slemrod and Thor O. Thoresen. 2015. "Taxes on the Internet: Deterrence Effects of Public Disclosure." *American Economic Journal: Economic Policy* 7(1):36–62.

Bolton, Alexander, John M. De Figueiredo and David Lewis. 2018. "Elections, Ideology, and Turnover in the U.S. Federal Government." *Academy of Management Proceedings* 2018(1):12717.

Boyne, George A., Oliver James, Peter John and Nicolai Petrovsky. 2010. "Does Political Change Affect Senior Management Turnover? An Empirical Analysis of Top–tier Local Authorities in England." *Public Administration* 88(1):136–153.

Brollo, Fernanda, Pedro Forquesato and Juan Carlos Gozzi. 2017. "To the Victor Belongs the Spoils? Party Membership and Public Sector Employment in Brazil." *Mimeo* .

Brollo, Fernanda and Tommaso Nannicini. 2012. "Tying Your Enemy's Hands in Close Elections: The Politics of Federal Transfers in Brazil." *American Political Science Review* 106(4):742–761.

Calonico, Sebastian, Matias D. Cattaneo, Max H. Farrell and Rocıo Titiunik. 2017. "rdrobust: Software for Regression Discontinuity Designs." *Stata Journal* 17(2):372–404.

Carozzi, Felipe and Luca Repetto. 2019. "Distributive politics inside the city? The political economy of Spain's Plan E." *Regional Science and Urban Economics* 75:85–106.

Christensen, Jørgen Gronnegaard, Robert Klemmensen and Niels Opstrup. 2014. "Politicization and the Replacement of Top Civil Servants in Denmark." *Governance* 27(2):215–241.

Colonnelli, Amanuele, Edoardo Teso and Mouno Prem. 2019. "Patronage and Selection in Public Sector Organizations." *University of Chicago Booth School of Business* (Mimeo).

Curto-Grau, Marta, Albert Solé-Ollé and Pilar Sorribas-Navarro. 2018. "Does electoral competition curb party favoritism?" *American Economic Journal: Applied Economics* 10(4):378–407.

Dahlström, Carl and Mikael Holmgren. 2019. "The Political Dynamics of Bureaucratic Turnover." *British Journal of Political Science* 49(3):823–836.

Dahlström, Carl and Victor Lapuente. 2017. *Organizing Leviathan: Politicians, Bureaucrats, and the Making of Good Government*. Cambridge University Press.

Doherty, Kathleen, David E. Lewis and Scott Limbocker. 2017. "Controlling Agency Choke Points: Presidents and Turnover in the Senior Executive Service." Vanderbilt Law Research Paper No. 17-64.

Ellingsen, Tore and Magnus Johannesson. 2008. "Pride and Prejudice: The Human Side of Incentive Theory." *American Economic Review* 98(3):990–1008.

Finer, Herman. 1941. "Administrative Responsibility in Democratic Government." *Public Administration Review* 1(4):335–350.

Fiva, Jon H. and Askill H. Halse. 2016. "Local Favoritism in At-large Proportional Representation Systems." *Journal of Public Economics* 143:15–26.

Fiva, Jon H. and Helene Lie Røhr. 2018. "Climbing the Ranks: Incumbency Effects in Party-list Systems." *European Economic Review* 101:142–156.

Fiva, Jon H., Olle Folke and Rune J. Sørensen. 2018. "The Power of Parties: Evidence from Close Municipal Elections in Norway." *Scandinavian Journal of Economics* 120(1):3–30.

Folke, Olle, Torsten Persson and Johanna Rickne. 2017. "Dynastic Political Rents? Economic Benefits to Relatives of Top Politicians." *Economic Journal* 127(605):F495–F517.

Fouirnaies, Alexander and Hande Mutlu-Eren. 2015. "English Bacon: Copartisan Bias in Intergovernmental Grant Allocation in England." *Journal of Politics* 77(3):805–813.

Gailmard, Sean and John W. Patty. 2007. "Slackers and Zealots: Civil Service, Policy Discretion, and Bureaucratic Expertise." *American Journal of Political Science* 51(4):873–889.

Gallo, Nick and David E. Lewis. 2012. "The Consequences of Presidential Patronage for Federal Agency Performance." *Journal of Public Administration Research and Theory* 22(2):219–243.

Geys, Benny and Rune J. Sørensen. 2018. "Never Change a Winning Policy? Public Sector Performance and Politicians' Preferences for Reforms." *Public Administration Review* 78(2):206–216.

Geys, Benny, Tom-Reiel Heggedal and Rune J. Sørensen. 2017. "Are Bureaucrats Paid like CEOs? Performance Compensation and Turnover of Top Civil Servants." *Journal of Public Economics* 152:47–54.

Hagen, Terje P. and Signy I. Vabo. 2005. "Political Characteristics, Institutional Procedures and Fiscal Performance: Panel Data Analyses of Norwegian Local Governments, 1991–1998." *European Journal of Political Research* 44:43–64.

Hollibaugh, Gary E., Jr. 2015. "Naïve Cronyism and Neutral Competence: Patronage, Performance, and Policy Agreement in Executive Appointments." *Journal of Public Administration Research and Theory* 25(2):341–372.

Holmström, Bengt. 1979. "Moral Hazard and Observability." *Bell Journal of Economics* 10(1):74–91.

Holmström, Bengt and Paul Milgrom. 1987. "Aggregation and Linearity in the Provision of Intertemporal Incentives." *Econometrica* 55:303–328.

Huber, Gregory A. and Neil Malhotra. 2005. "Political Homophily in Social Relationships: Evidence from Online Dating Behavior." *Journal of Politics* 79(1):269–283.

Huber, John D. and Charles R. Shipan. 2008. Politics, Delegation, and Bureaucracy. In *The Oxford Handbook of Political Economy*, ed. Donald A. Wittmann and Barry R. Weingast. Oxford University Press pp. 256–272.

Iyer, Lakshmi and Anandi Mani. 2012. "Travelling Agents: Political Change and Bureaucratic Turnover in India." *Review of Economics and Statistics* 94(3):723–739.

Kommunesektoren. 2018. *Hovedtariffavtalen (Collective wage agreement)*. Kommuneforlaget AS.

Kopecky, Peter, Jan-Hinrik Meyer Sahling, Francisco Panizza, Gerardo Scherlis, Christian Schuster and Maria Spirova. 2016. "Party patronage in contemporary democracies: Results from an expert survey in 22 countries from five regions." *European Journal of Political Research* 55(2):416–431.

Larcinese, Valentino, Leonzio Rizzo and Cecilia Testa. 2006. "Allocating the U.S. Federal Budget to the States: The Impact of the President." *Journal of Politics* 68(2):447–456.

Lazear, Edward P. 2000. "Performance Pay and Productivity." *American Economic Review* 90(5):1346–1361.

Lee, David S. 2008. "Randomized Experiments from Non-random Selection in US House Elections." *Journal of Econometrics* 142(2):675–697.

Lowande, Kenneth. 2018. "Who Polices the Administrative State?" *American Political Science Review* 112(4):874–890.

McPherson, Miller, Lynn Smith-Lovin and James M. Cook. 2001. "Birds of a Feather: Homophily in Social Networks." *Annual Review of Sociology* 27:415–444.

Ostrom, Vincent. 2008. *The Intellectual Crisis in American Public Administration*. University of Alabama Press.

O'Brien, Diana Z. and Yael Shomer. 2013. "A Cross–National Analysis of Party Switching." *Legislative Studies Quarterly* 38(1):111–141.

Peters, B. Guy and Jon Pierre. 2004. *The Politicization of the Civil Service in Comparative Perspective: A Quest for Control*. Abingdon: Routledge.

Rasul, Imran and Daniel Rogger. 2018. "Management of Bureaucrats and Public Service Delivery: Evidence from the Nigerian Civil Service." *The Economic Journal* 128(608):413–446.

Rattsø, Jørn and Hildegunn E. Stokke. 2019. "Identification of the private-public wage gap." *Labour Economics* 59:153–163.

Snyder, James M. and David Strömberg. 2010. "Press Coverage and Political Accountability." *Journal of Political Economy* 118(2):355–408.

Solé-Ollé, Albert and Pilar Sorribas-Navarro. 2008. "The Effects of Partisan Alignment on the Allocation of Intergovernmental Transfers. Differences-in-Differences Estimates for Spain." *Journal of Public Economics* 92:2302–2319.

Strömberg, David. 2015. "Media and Politics." *Annual Review of Economics* 7(1):173–205.

Toral, Guillermo. 2019. "The benefits of patronage: How the political appointment of bureaucrats can enhance their accountability and effectiveness?" *MIT, mimeo* .

Ujhelyi, Gergely. 2014. "Civil Service Rules and Policy Choices: Evidence from US State Governments." *American Economic Journal: Economic Policy* 6(2):338–380.

Velasco Rivera, Carlos. 2019. "Loyalty or Incentives? How Party Alignment Affects Bureaucratic Performance." *Journal of Politics* forthcoming.

Weber, Max. 1978. *Economy and Society*. University of California Press.

Xu, Guo. 2018. "The Costs of Patronage: Evidence from the British Empire." *American Economic Review* 108(11):3170–98.

# For Online Publication

**Appendix A** Principal-agent model

**Appendix B** Supplementary figures

**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 optimal wage contract. We focus on two mechanisms. First, preference alignment gives policy-motivated agents a stake in public output (the political mission). Second, preference alignment improves the productivity of a match. The model highlights how these mechanisms push bureaucratic pay in opposite directions.

## A.1 Technology and preferences

Let output be given by $f = ae + \varepsilon$ where $a \in \{a_L, a_H\}$ is the productivity-type parameter of the agent such that $0 < a_L < a_H$. The agent's effort is denoted $e$, and $\varepsilon$ is a stochastic element (noise). Agents' cost of effort is given by $c = \frac{e^2}{2}$.[14]

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

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

where $r > 0$ measures the degree of risk aversion. The agent's intrinsic motivation for achieving output $f$ is given by the type parameter $\theta \in \{\theta_L, \theta_H\}$, where $\theta_L = 0$ and $\theta_H \in (0, 1)$. That is, $\theta_L$-types are only motivated by financial rewards. We let all agents have the same outside option $u$.

There are no explicit policy preferences in the model. Rather, we compare outcomes between matches where different agent types are activated. That is, the default type parameters of an agent are $a_L$ and $\theta_L$. This corresponds to a situation where principal-agent policy preferences are misaligned. We then compare this to a situation where one of the agent's type parameters are high ($a_H$ or $\theta_H$), depending on which of the two mechanisms we analyze.

The principal is risk neutral with utility

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

We assume that the principal can observe the agent's type, as types are mapped by party affiliation in the empirical application. Last, we assume that the principal cannot observe effort and hence effort is not contractible.[15]

[14] 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.

[15] Setting up the model without asymmetric information such that the principal observes effort – which is equivalent to a situation with deterministic output $f$ and non-observable effort – provides qualitatively similar implications.

## A.2 Optimal performance contract

We solve for the optimal contract given exogenous principal-agent matching. Restricting the analysis to linear contracts, let a contract $w$ be given by

$$w = \tau + kf,$$

where $\tau$ is a fixed transfer and $k$ is a fraction of output (the incentive part – or 'power' – of the contract).[16] We analyze the optimal contract in two situations: i.e. one where agents are not motivated by policies ($\theta = \theta_L$) and one where agents are policy-motivated ($\theta = \theta_H$).

Looking first at agents without policy motivation, we can establish the effect of agents' productivity types $a$. In this case, agents' utility of a contract is given by

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

Inserting for $w$ and $f$ we get

$$U = \tau + kae - 0.5rk^2Var[\varepsilon] - c.$$

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

$$ka = c'.$$

This equality implies that for a given $k$, the high productivity types will put in more effort than low productivity types (or, equivalently, these types need less incentives to perform a given task). However, it is not optimal for the principal to give the same incentives $k$ across 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[17]

$$k = \frac{a^2}{a^2 + rvar(\varepsilon)}.$$

The optimal output-related pay $k$ thus increases in agents' productivity. The intuition is that the principal wants to incentivize these productive 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, these types demand higher expected pay to participate. *This result implies that politician-bureaucrat preference alignment – when assumed to increase productivity – will work to push up bureaucrats' pay.*

Now, what happens when we allow for policy-motivated agents? In this case, the

[16] 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.

[17] The participation constraint simply states that the value of the contract to the agent must satisfy $w - c(e) = u$.

agent's utility of a contract $w$ will be given by

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

It follows that the agent's first order condition is

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

Thus, for a given $k$, the agent puts in more effort when $\theta = \theta_H$. 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 for $\theta_L$-types as for $\theta_H-$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 $\theta$). 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 across agents with different $\theta$'s.

Turning to expected pay, note first that – for given transfer $\tau$ – the surplus is larger for the $\theta_H$-types. Both agent-types face the same risk and get the same performance pay for a given output level. However, the $\theta_H$-types also have a direct stake in output. Moreover, these types work harder creating additional surplus for themselves. This follows because these types could choose the same effort level as $\theta_L$-types, but optimally choose higher effort for given $k$. Next note that the participation constraint is given by

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

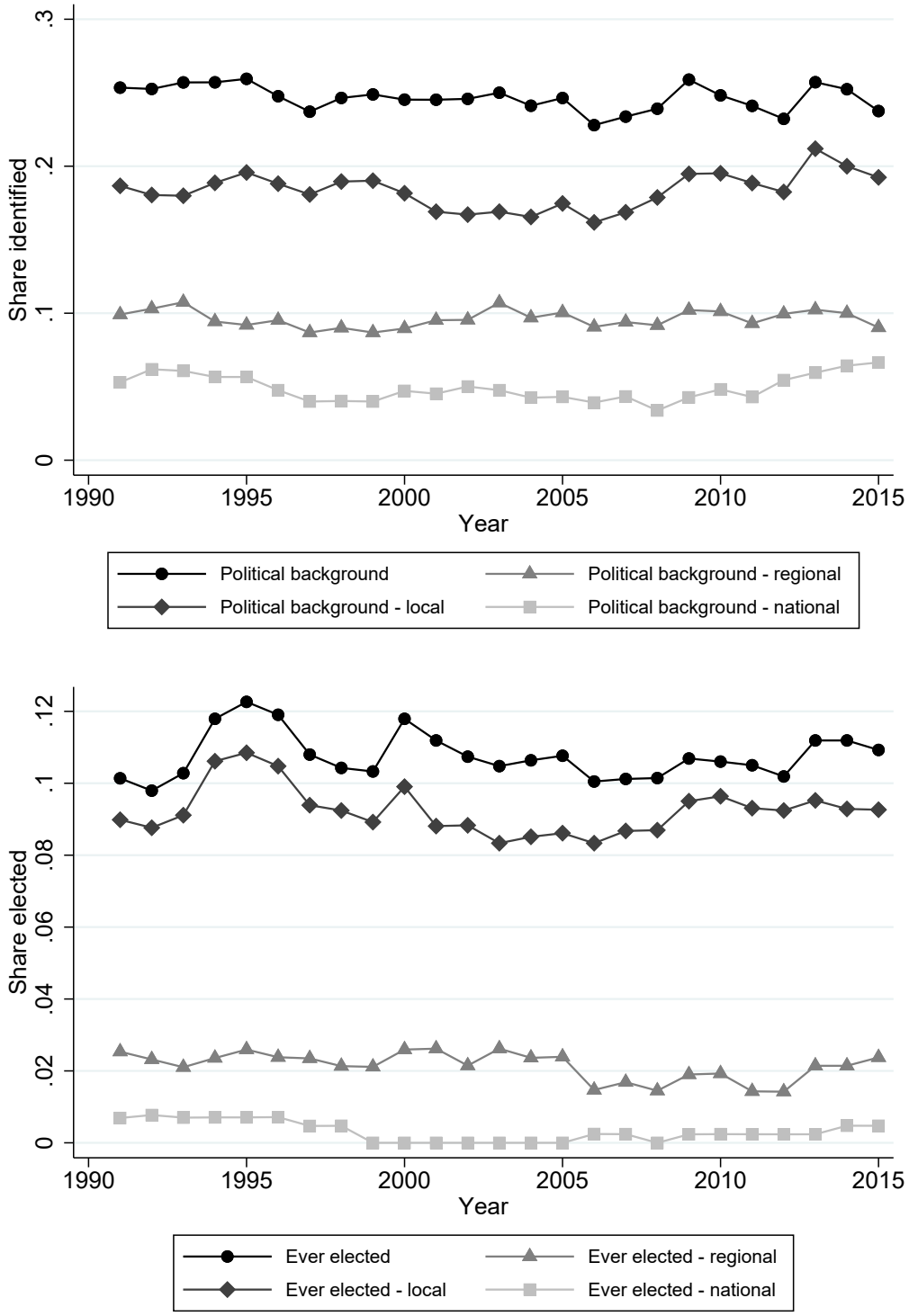
The principal extracts the aforementioned surplus by lowering the fixed transfer $\tau$ for the $\theta_H$-types until the participation constraint binds. Thus, $\tau$ is lower for $\theta_H$-types than for $\theta_L$-types. It is straightforward to show that also total expected pay – i.e., $\tau + kae$ – is lower.[18] That is, the reduction in $\tau$ is larger than the additional pay to the $\theta_H$-types 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 ($\theta = \theta_H$) thus is to lower agents' pay. *Politician-bureaucrat preference alignment – when assuming agents have a stake in output – thus will work to pull down bureaucrats' pay.*[19]

[18]For given $k$, a sufficient condition for the result is that $c''$ is non-decreasing.

[19]The $\theta_H$-types are valuable for principals (as they put in more effort for lower expected pay). Competition among principals for these agents could then push up their outside options, which could countervail the downward pull on wages.

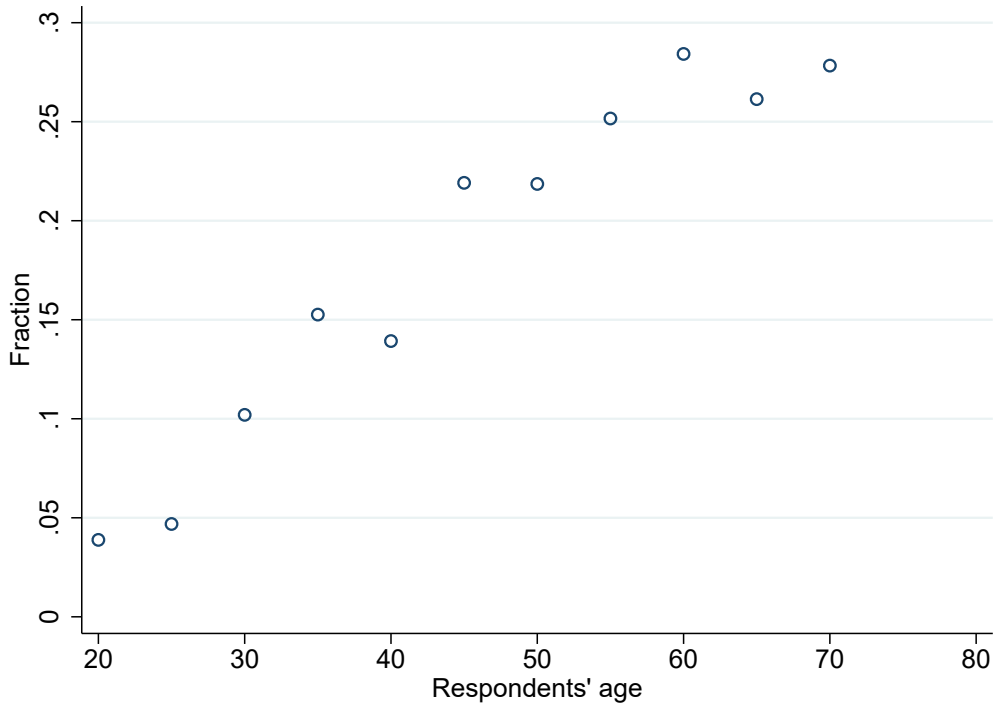
# B Supplementary figures

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



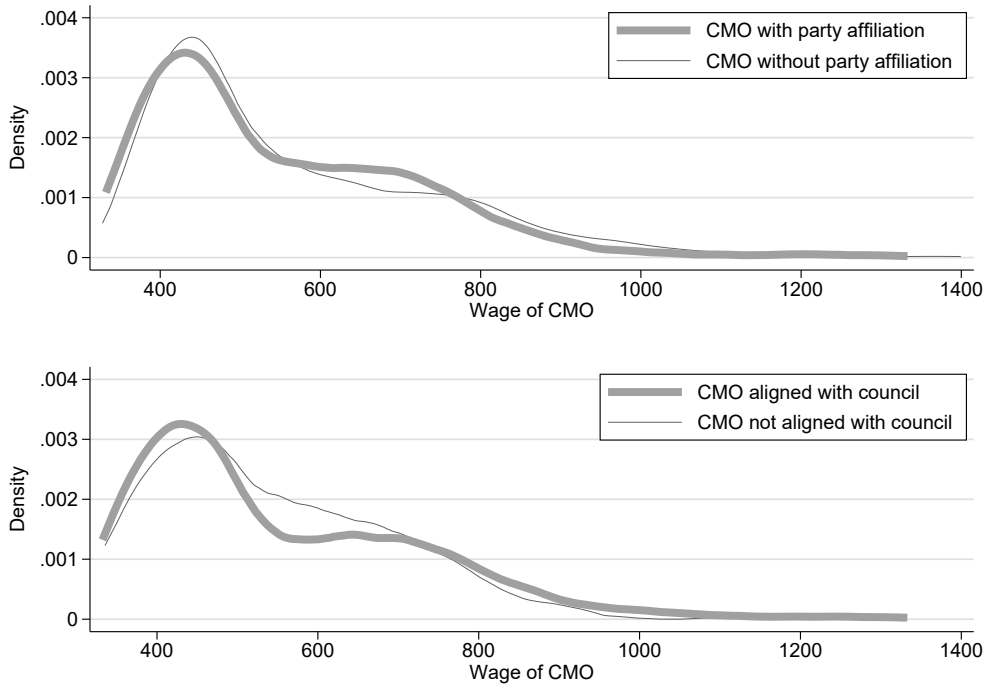

Note: The top panel displays, for each year in the sample, the fraction of CMOs where we can establish the partisan leaning from electoral lists. The bottom panel plots, for each year in the sample, the share of CMOs that have won political office in the election data we have available.

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



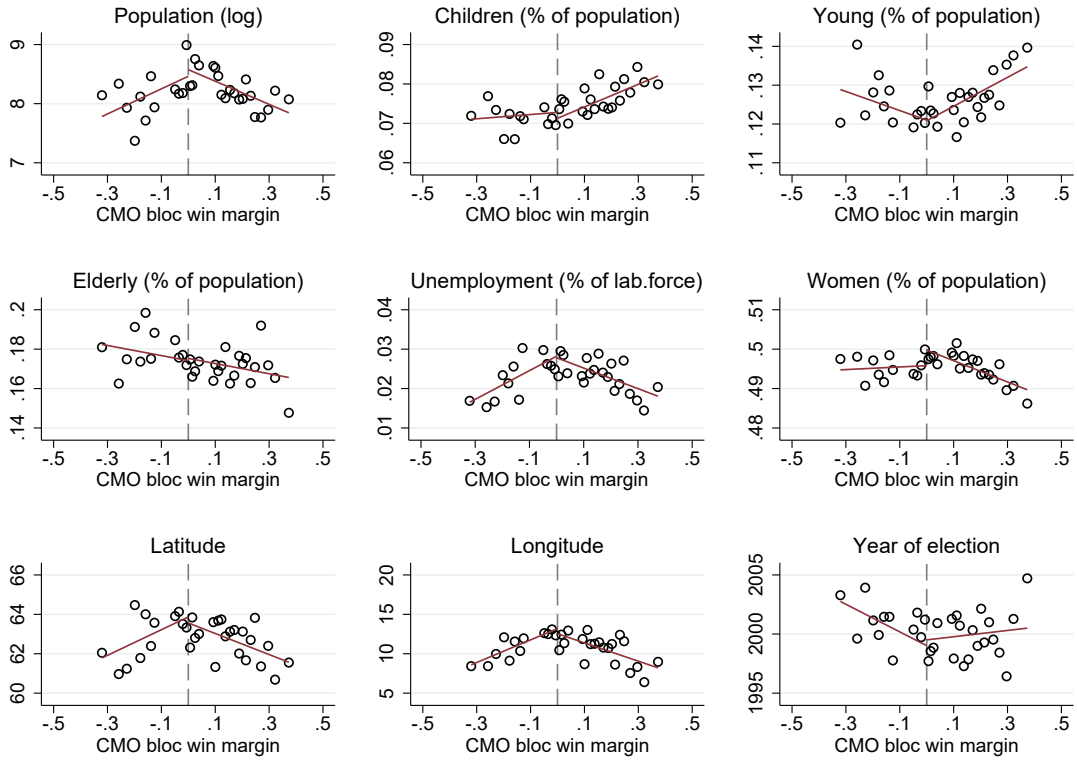

Note: This figure plots the fraction of survey respondents that have previously run for local office against the respondent's age. Data from the 1999-2011 *Local Election Surveys* (N=10,319).

Figure B.3: CMO wage distributions



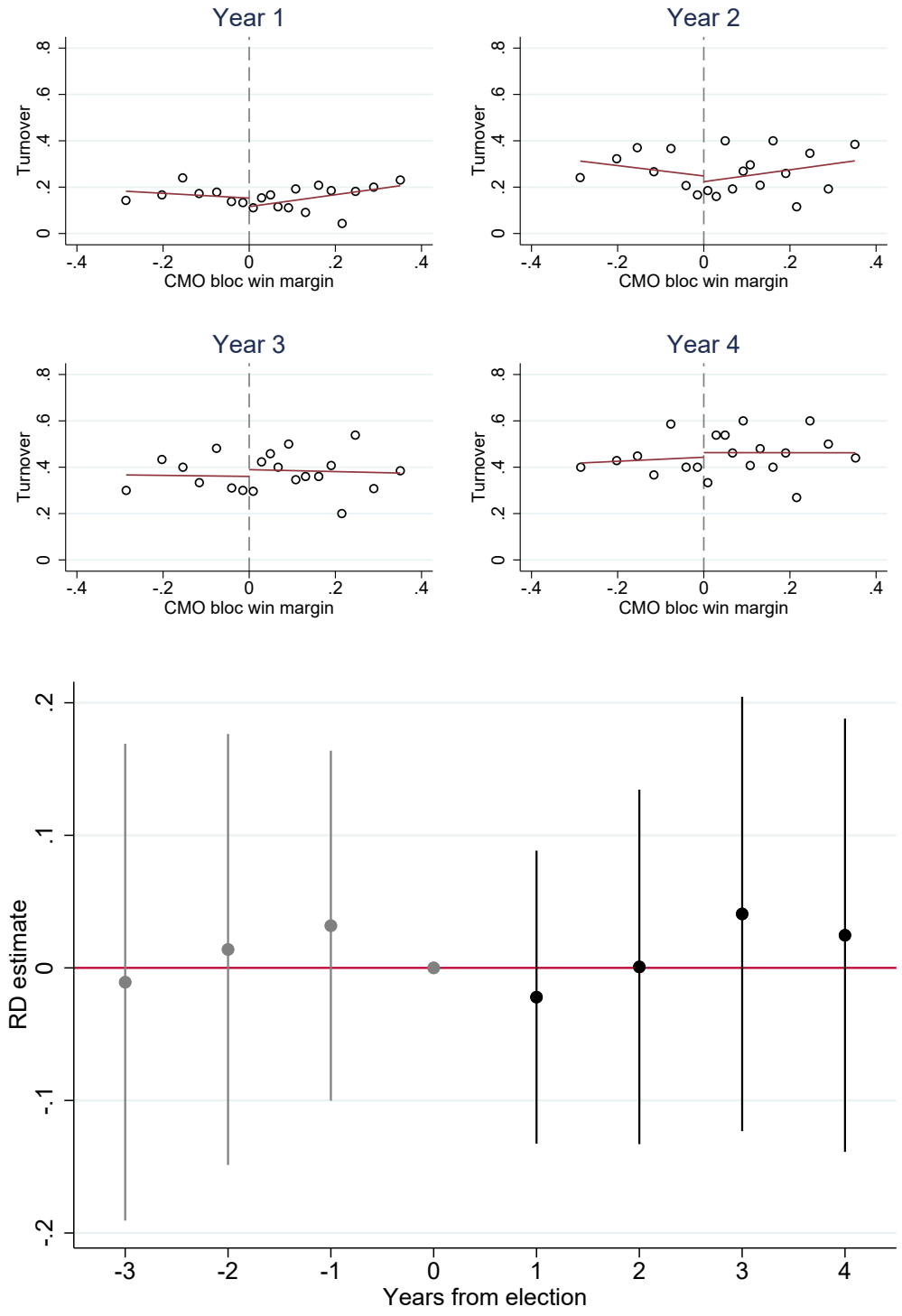

Note: This figure shows four different wage distributions based on real annual gross salary (in 2011 NOK) using an Epanechnikov kernel with optimal bandwidth. The top panel shows kernel density plots for wage levels of CMOs with party affiliation (thick line) and without party affiliation (thin line). 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.4: Balance on covariates by CMO bloc win margin



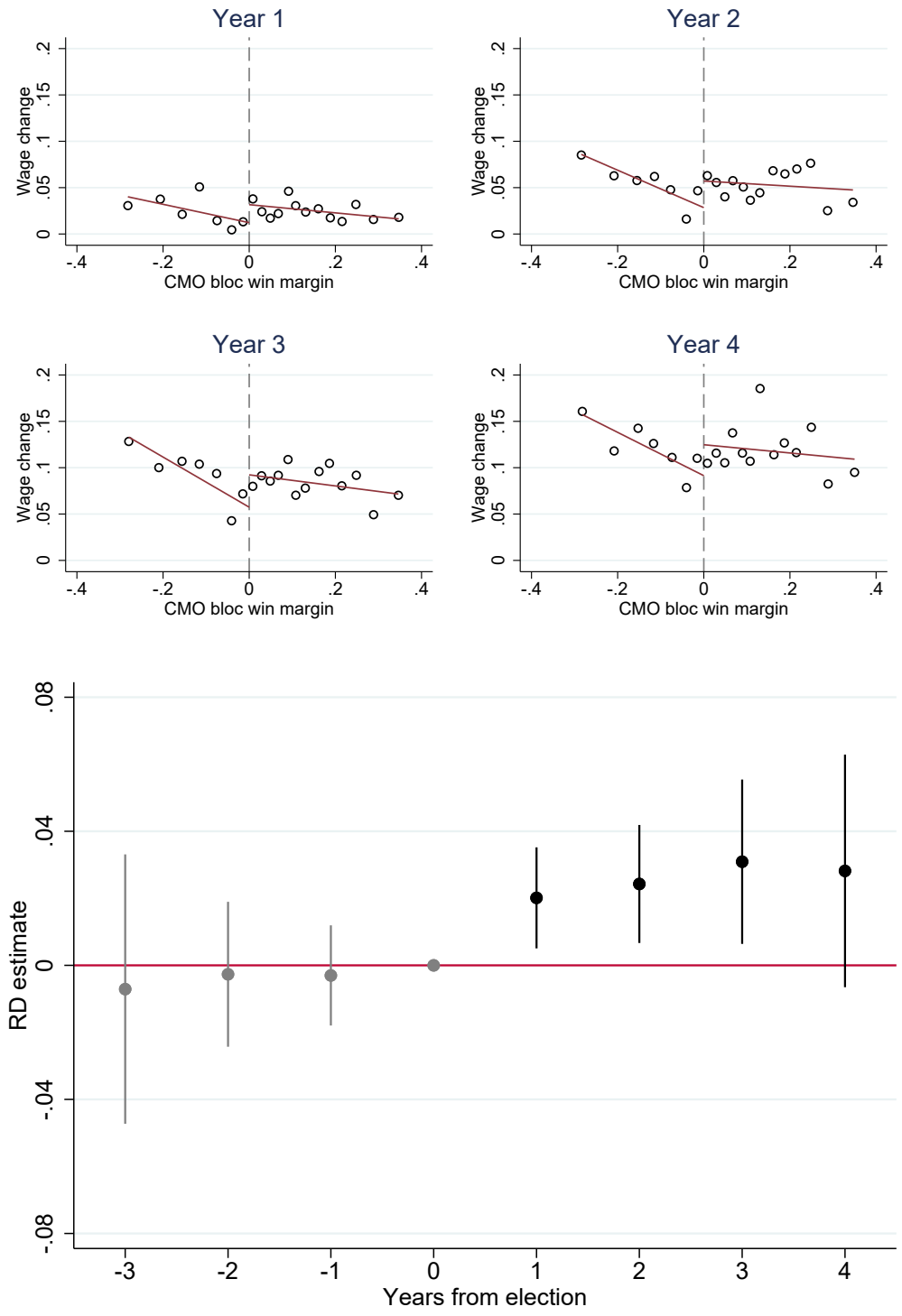

Note: RD plots showing covariate balance for nine different variables (given in the title of each panel) by the CMO bloc win margin. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes about the same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

Figure B.5: Council-bureaucrat alignment and bureaucrat turnover



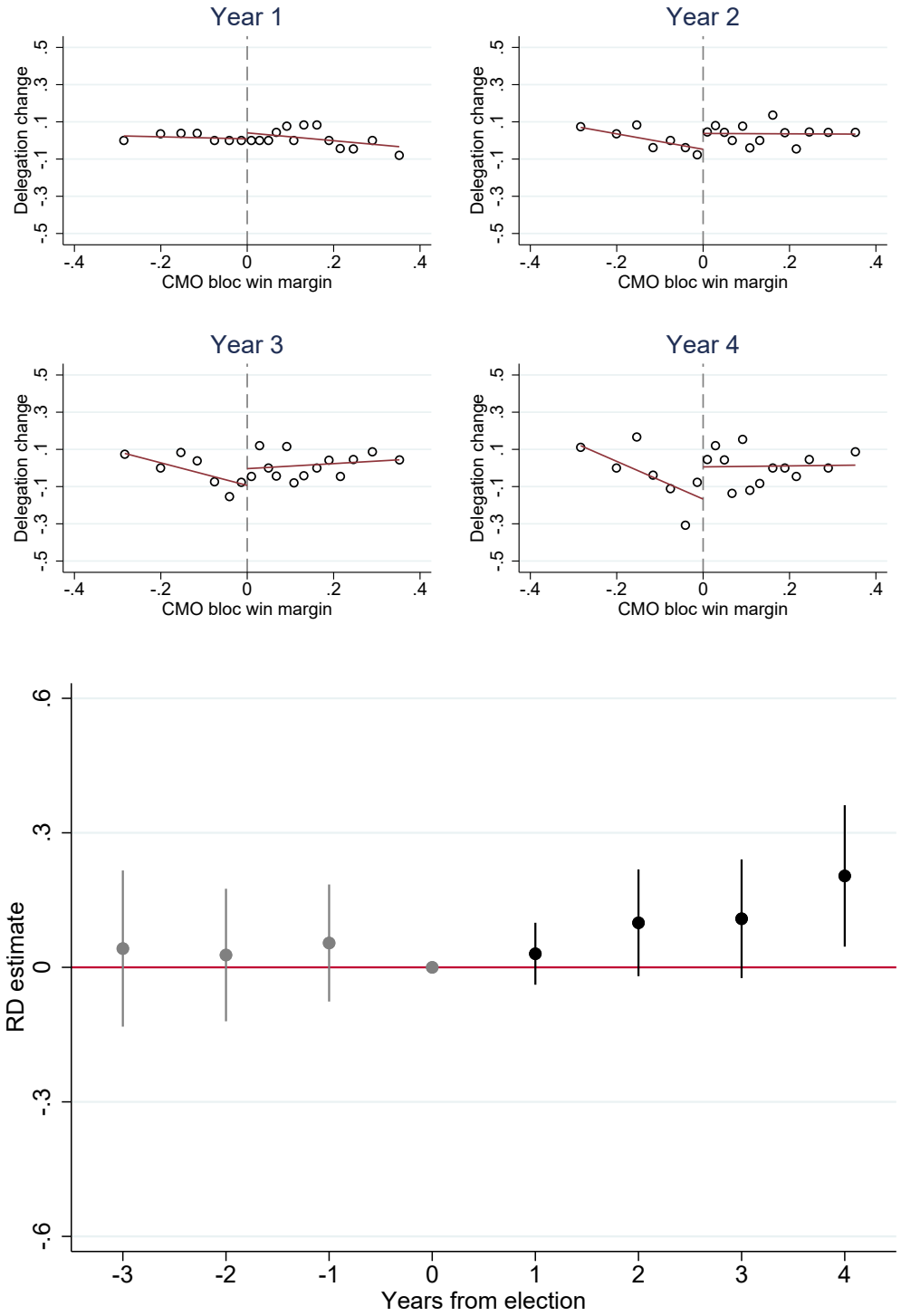

Note: The top panel displays RD plots showing how changes in bureaucratic turnover, from year 0 to year 1, 2, 3, and 4, depends on council-bureaucratic alignment. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter 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.6: Council-bureaucrat alignment and bureaucrat remuneration; Sample limited to municipalities without CMO turnover



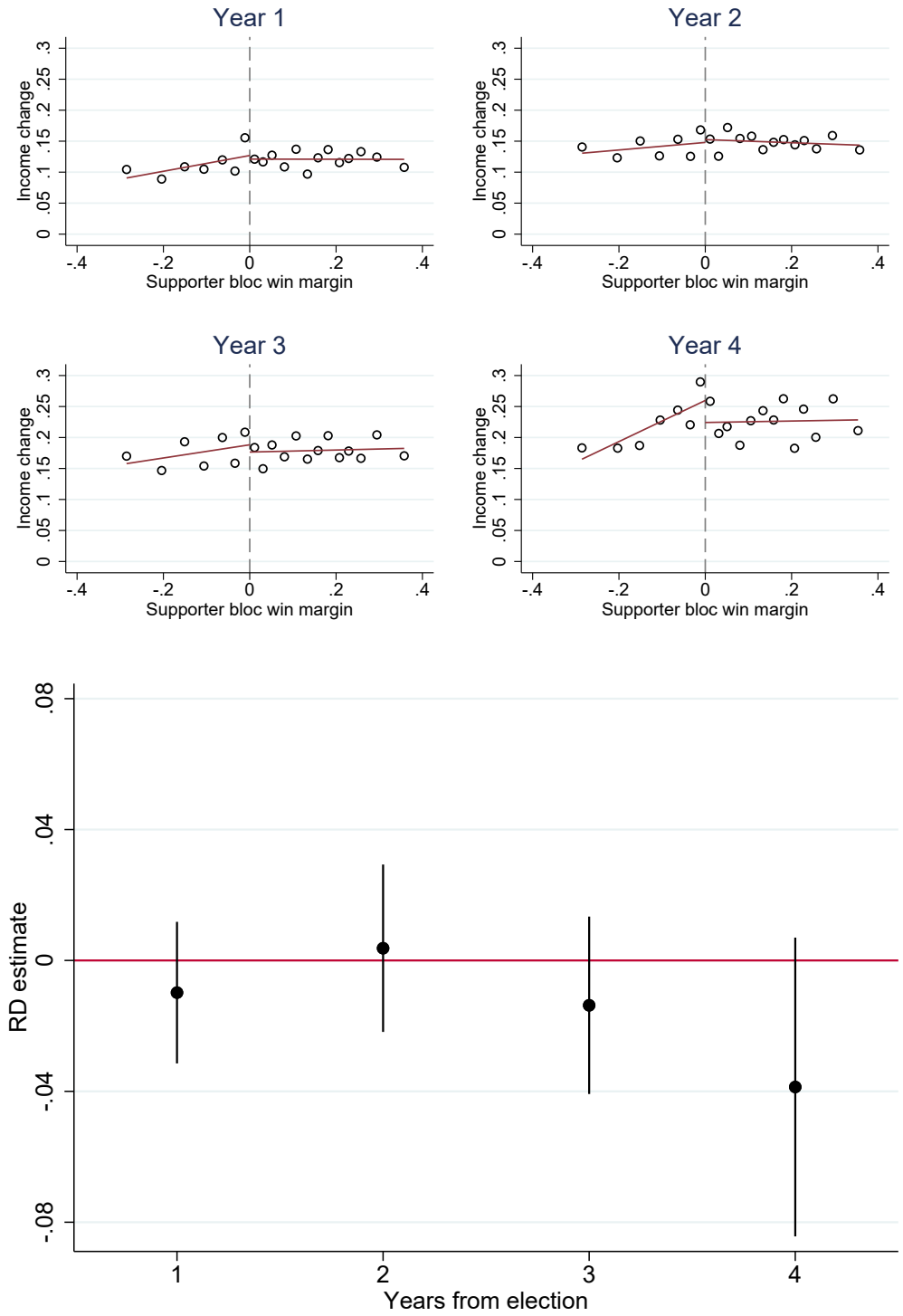

Note: The top panel displays RD plots showing how changes in bureaucratic remuneration, from year 0 to year 1, 2, 3, and 4, depends on council-bureaucratic alignment. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter 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.7: Council-bureaucrat alignment and delegation (including interpolated delegation data)



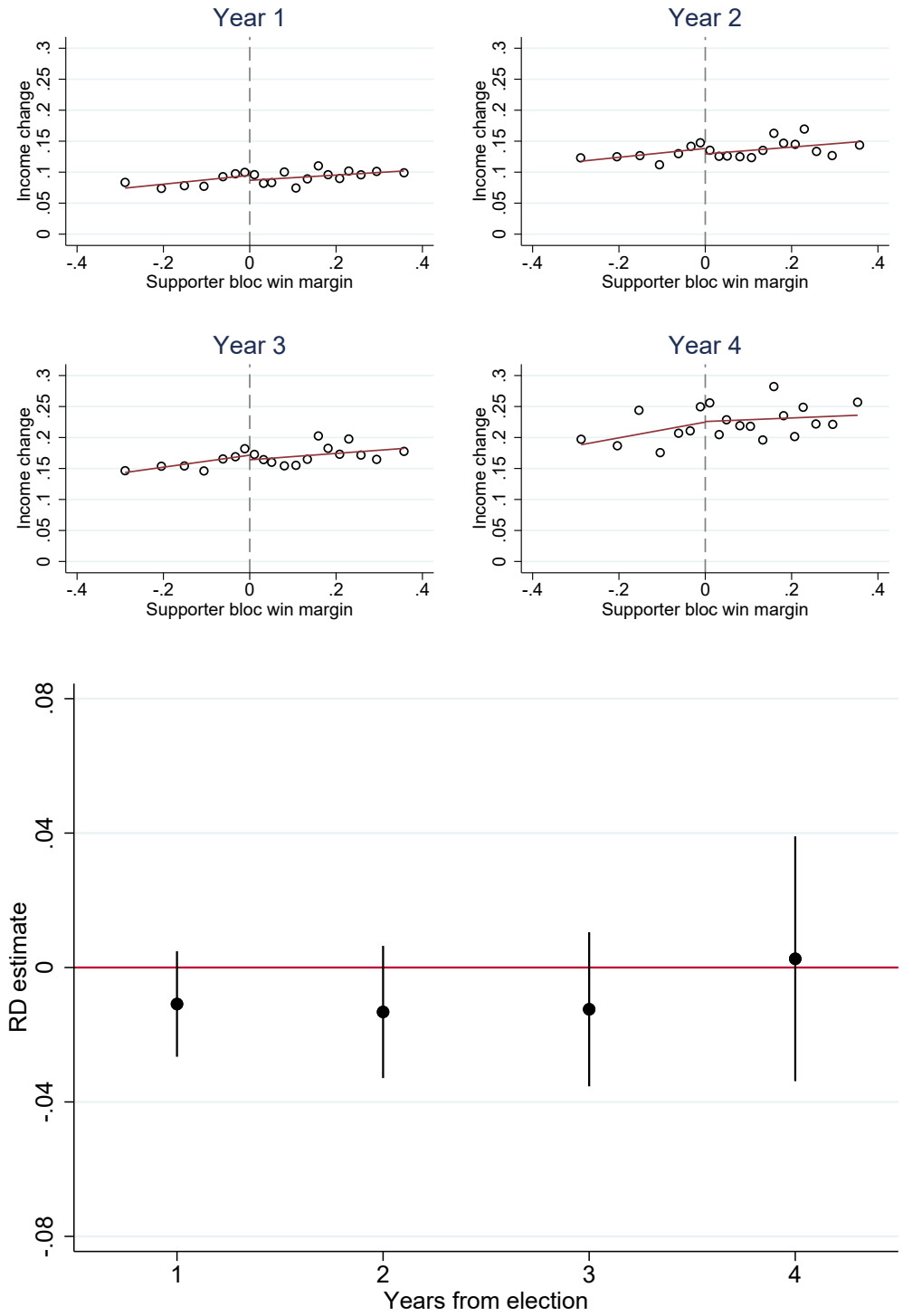

Note: The top panel displays RD plots showing how changes in delegation, from year 0 to year 1, 2, 3, and 4, depends on council-bureaucratic alignment. Separate linear lines are estimated below and above the discontinuity using the underlying data, not the binned scatter points. Each scatter point includes 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.8: 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.9: 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.

# 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 CMOs 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 treatments of middle names. We subsequently do extensive quality checks of our resulting matches.

For the local and regional level of government, we rely on candidate data as organized by Fiva et al. (2019). 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 (3,553 mayor-year observations) from 1971-1999, 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 searches conducted in the following order (i) national elections (109 matches), (ii) regional elections (182 matches), and (iii) local elections (340 matches). If CMOs run in multiple years for the same office, we use the earliest entry. 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. (2018), 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).[20]

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.
- 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).

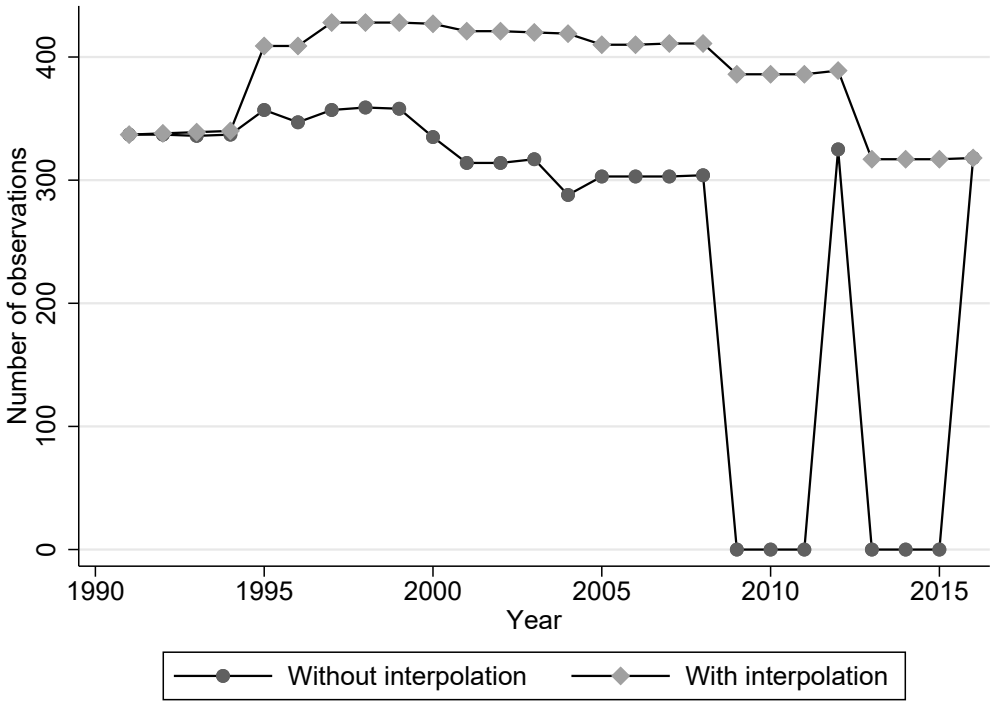
[20]The database is "Kommunal- og moderniseringsdepartementets Organisasjonsdatabase for kommuner og fylkeskommuner". For detailed documentation, see https://nsd.no/nsddata/serier/kommunalorganisering.html.

### 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 legislative 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 legislative 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 legislative 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).

## References

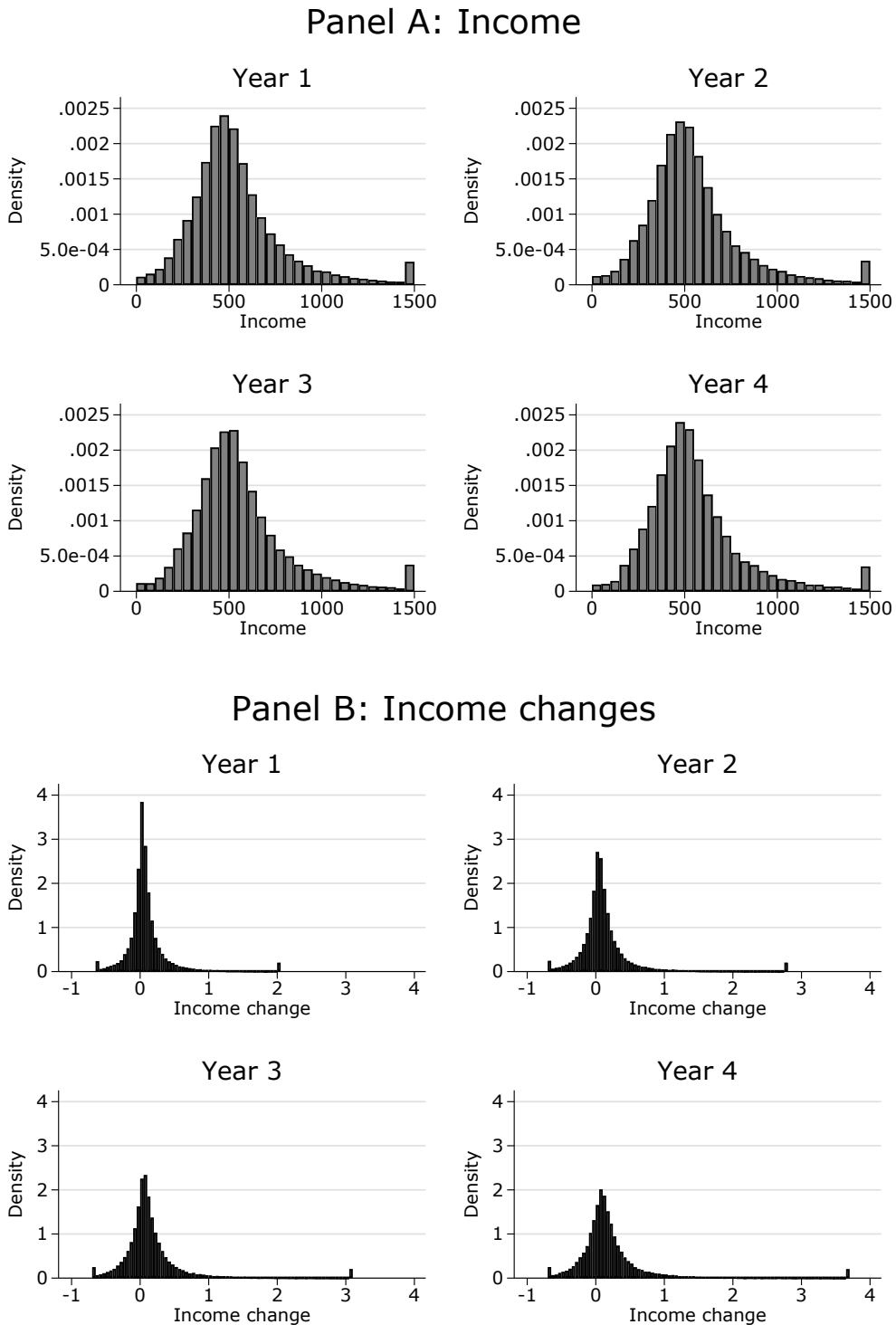

Fiva, Jon H., Askill H. Halse and Gisle J. Natvik. 2017. "Local Government Dataset." Available at `www.jon.fiva.no/data.htm`.

Fiva, Jon H. and Daniel M. Smith. 2017. "Norwegian Parliamentary Elections, 1906-2013: Representation and Turnout Across Four Electoral Systems." *West European Politics* 40(6):1373–1391.

Fiva, Jon H., Rune J. Sørensen and Reidar Vøllo. 2019. "Local Candidate Dataset.".

Hagen, Terje P. and Signy I. Vabo. 2005. "Political Characteristics, Institutional Procedures and Fiscal Performance: Panel Data Analyses of Norwegian Local Governments, 1991–1998." *European Journal of Political Research* 44:43–64.

Figure C.2: Income data for local election candidates




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

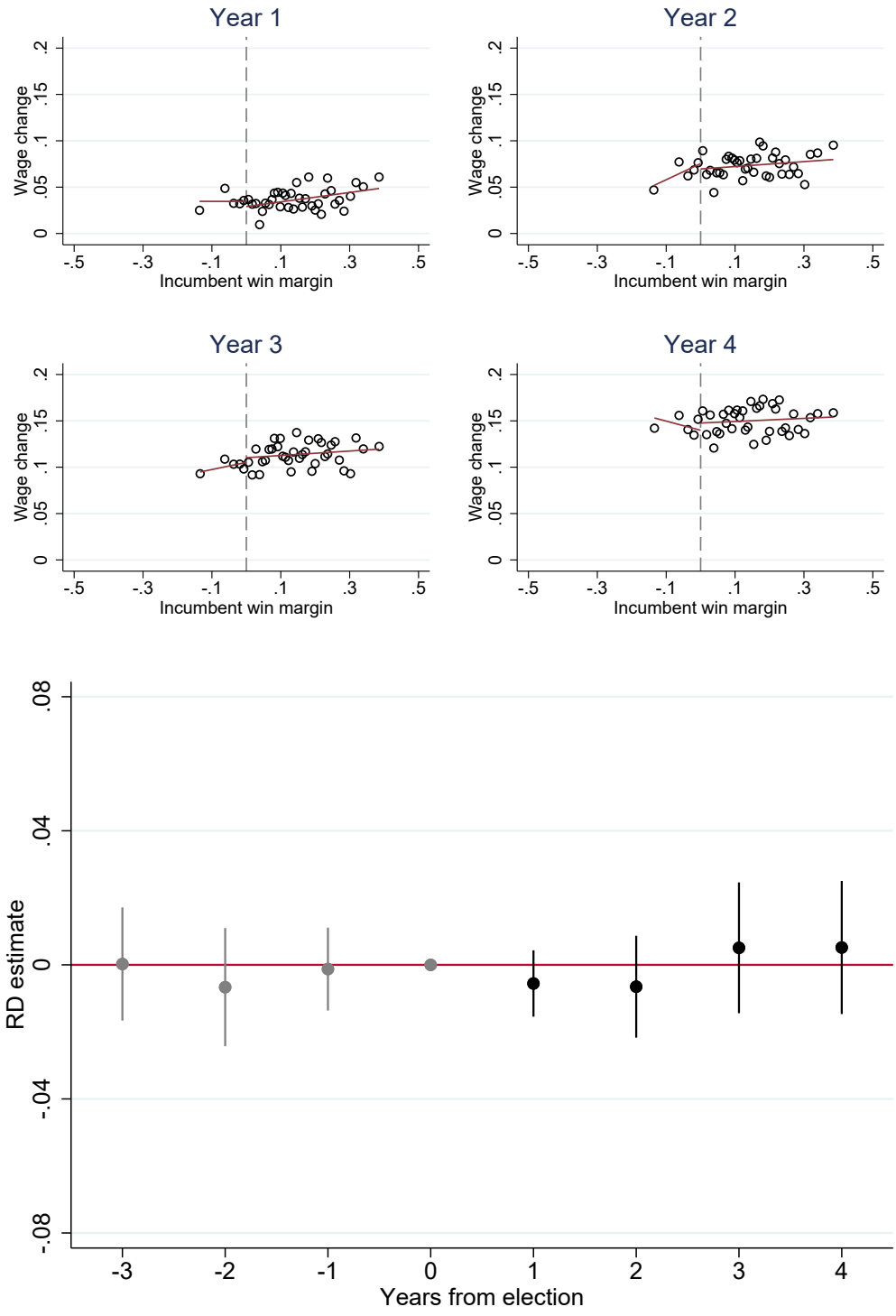
In this section, we look at the impact on bureaucratic pay and turnover from changing the council majority. This has been the common empirical approach in the literature assessing how partisan patronage affects bureaucratic turnover, even though it rests on the dubious assumption that politician-bureaucrat 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:

$$Y_i^t = \widetilde{\alpha} + \widetilde{\beta} IncumbentWin_i + \widetilde{\gamma}_1 \widetilde{Margin}_i + \widetilde{\gamma}_2 \widetilde{Margin}_i \cdot IncumbentWin_i + \widetilde{\epsilon}_i \qquad (2)$$

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.

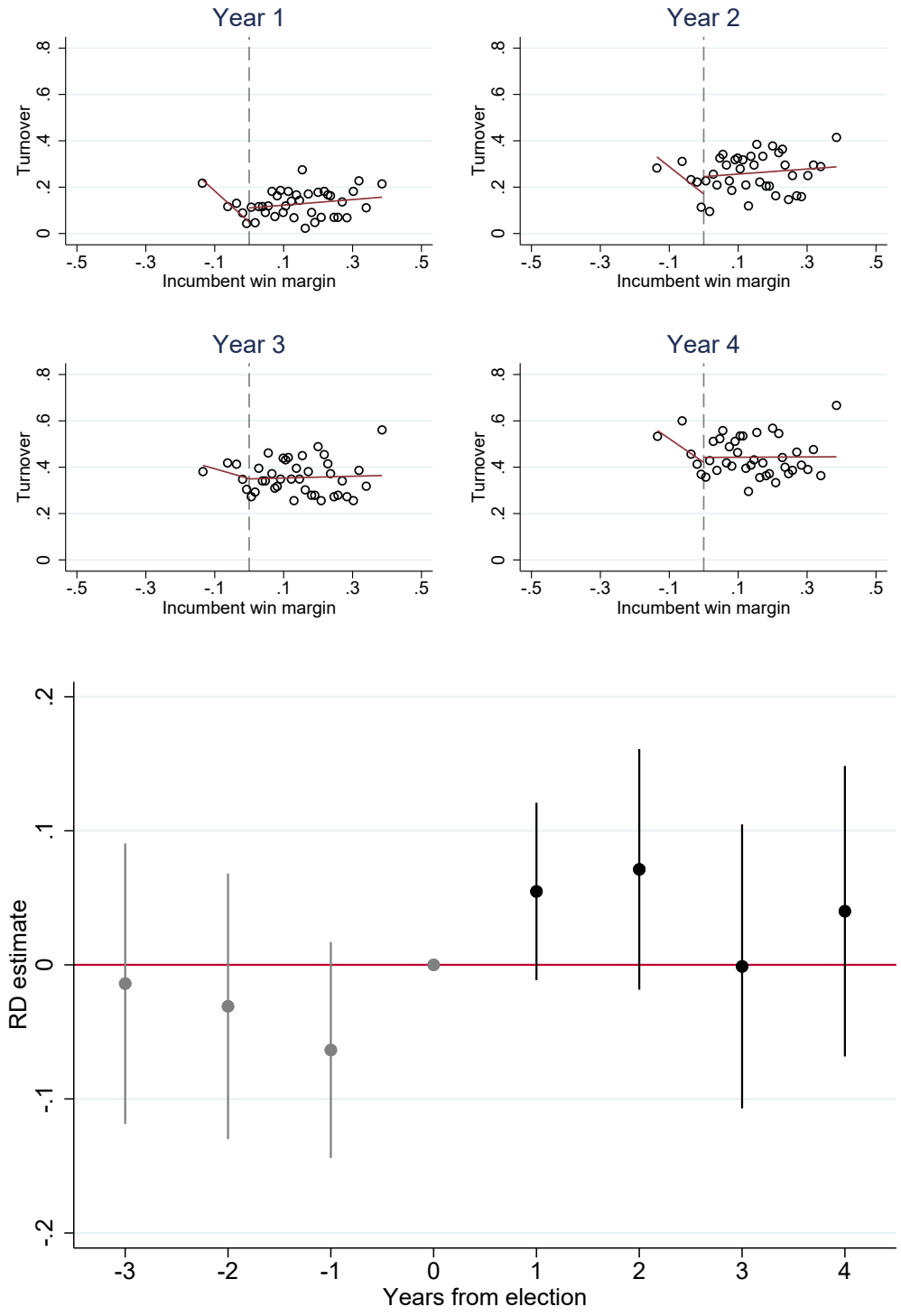
The results are graphically presented in Figure D.1. The top panel shows four RD plots relating contemporaneous shifts in council majorities (year $t = 0$) to changes in bureaucratic pay over the election period (year $t = 1$, 2, 3 or 4). The bottom panel of each figure plots the RD estimates with corresponding 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.

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.

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 | 1508 | 1508 | 257 | 214 | 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 | 1511 | 1511 | 236 | 212 | 93 |

**Panel C: Three years after the election**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| RD estimate | 0.005 | 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 | 158 | 141 | 91 |
| N right of cut-off | 1498 | 1498 | 247 | 213 | 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 | 1502 | 1502 | 258 | 212 | 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.