The Impact of Tenure-Dependent Benefits on Government Stability*

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Abstract

I combine newly digitized data on confidence votes, party switches, and tax returns of Italian MPs from 2001 to 2022 to study how tenure-dependent benefits influence politicians' behavior and government stability. Using a difference-in-discontinuities design, I find that a tenure requirement for parliamentary pensions introduced in 2008 increased confidence votes for the government, switches to majority parties, and legislative effort. Consistent with agency model predictions, the policy discouraged internal party defiance that could jeopardize reelection chances and pension eligibility for a second term. Tenure requirements increase government stability but also strengthen party control, with ambiguous effects on voters' welfare.
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1 Introduction

> If a man wants to join our ranks, if he wishes to accept my modest program, to transform himself and become a progressive, how could I reject him?
>
> Agostino Depretis (Italian prime minister, 1882)

The parliamentary power to oppose governments is one of the checks and balances upon which modern democracies are based. But the policy uncertainty associated with government instability discourages investment, hiring, lending, and ultimately hinders economic growth [Alesina et al., 1996; Bloom et al., 2007; Bloom, 2014; Baker et al., 2016; Bordo et al., 2016; Gratton et al., 2021]. The decision to topple a government lies in the hands of few members of Parliament (MPs), who may vote vocationally to maximize voters' welfare or opportunistically to secure tangible rents for themselves [Persson and Tabellini, 2000].

Tenure-dependent benefits, such as pensions tied to a minimum length of parliamentary service, can promote government stability by incentivizing MPs to retain their seat. But they can also strengthen party control over them by enhancing reelection incentives. These benefits are a common feature of modern democracies (Figure 1). For instance, U.S. Members of Congress are eligible for a congressional pension after five years of service [Congressional Research Service, 2023]. Many other countries, including ten members of the G20 (Australia, Canada, Germany, Italy, Japan, Russia, South Africa, South Korea, Turkey, and the EU), combine tenure requirements for parliamentary pensions with confidence vote mechanisms (Table C2). Yet, the effect of tenure-dependent benefits on government stability are surprisingly understudied.

The paper aims to fill this gap by examining how tenure-dependent benefits influence MP's behavior in confidence votes, switches in party affiliation, and legislative effort. To address the question, I study a change in monetary incentives that occurred in Italy in 2008 (legislature XVI): the introduction of a minimum parliamentary tenure of 4.5 years required to obtain a parliamentary pension. Italy is an ideal setting to answer the question because governments are generally unstable and confidence votes are frequent. The findings aim to contribute to the broader understanding of how institutional rules and incentives impact the stability of democratic systems.

For this analysis, I have digitized the stenographic records of all confidence votes held in the Italian Parliament between legislatures XIV and XVIII (2001-2022), which contain the list of members of parliament who voted in favor, against or abstained. I then merged this data with individual-level information on all MPs, including their demographics, party affiliation, the start and end dates of their parliamentary terms, which allows to calculate their parliamentary tenure. The Parliament also provided data on legislative effort: the sponsors and dates of legislative bill proposals, and whether they were approved. Finally, I digitized the first tax return submitted by

each Deputy and Senator and kept in the parliamentary archives, to obtain a measure of their private income in the year prior to entering Parliament.

To study the effects of the policy, I cannot employ a regression discontinuity design because there is another monetary incentive, a parliamentary severance pay, that increases at the threshold of 4.5 years. I do not use a difference-in-differences design because newly-elected MPs may have a different trend in their voting attitude with respect to MPs with a much longer experience in Parliament. Therefore, I combine two sources of variation, before/after the beginning of Legislature XVI and just below/above 4.5 years of parliamentary tenure, and implement a 'difference-in-discontinuities' design as in Grembi et al. [2016]. I take the difference between the pre-treatment and the post-treatment discontinuity at the tenure threshold in order to net out the effect of the severance pay increase.

I estimate that the introduction of the tenure requirement for a parliamentary pension increases the probability of expressing a vote of confidence in the government by 3.2 percentage points from an average of 70 percent of MPs voting confidence. To confirm the validity of the empirical strategy, I perform a series of diagnostic tests. First, the effect is not statistically different from zero in any of the houses in the two legislatures (XIV and XV) before the introduction of the tenure requirement, but it becomes significantly positive since the first legislature in which the tenure requirement is in place (XVI). Secondly, the estimate is remarkably stable when using different bandwidths around the tenure threshold, from three months up to three years on each side. The estimates are robust to clustering standard errors at the MP level, the voting date level, or the level of the first day in parliament. Thirdly, the Frandsen [2017] test for discrete running variables cannot reject the null hypothesis of absence of manipulation in the distribution of the tenure of MPs in confidence votes. There is no significant discontinuity observed in either the pre-determined characteristics of MPs or the types of confidence votes (motions of no confidence or confidence votes initiated by the government on various subjects). Finally, to assess the possibility that this result arises from random chance rather than from a causal relationship, I perform a set of estimations at placebo thresholds below and above 4 years and 6 months. All the placebo estimates are lower than the true-threshold coefficient for the confidence vote.

In a heterogeneity analysis, I find that the effect of the tenure requirement is stronger in legislatures in which MPs' private income and the chances of reelection are lower. Surprisingly, the policy significantly increases confidence in government by MPs elected in parties that support the government (*majority MPs*), but it decreases or does not affect confidence in government by MPs elected in opposition parties (*opposition MPs*). As a consequence, the tenure requirement significantly reduces the probability that an MP votes against the directives of the electoral-affiliation party by 2.8 percentage points. These empirical results can be rationalized in a simple political-agency model in which voters are principals with imperfect information about the state of the world

and politicians are opportunistic agents [Barro, 1973; Ferejohn, 1986; Besley, 2007].

First of all, if politicians were vocational and voted purely in their voters' interest, their voting behavior should not change when their private economic incentives change. Secondly, the model shows that the minimum tenure requirement for a parliamentary pension has two effects on the voting behavior of newly-elected MPs, which affect majority and opposition MPs differently. A 'pivotal' effect for which both majority and opposition newly-elected MPs have an incentive to vote confidence in case they are the pivotal voter so as to increase the probability of survival for the current government, complete their first legislature and secure a parliamentary pension. A 'party-discipline' effect for which both majority and opposition newly-elected MPs have an incentive to vote following the party directives so as to have a higher probability of being reelected (Section E) and reach the tenure requirement in their second term, in case the government loses the confidence vote and there are early elections. The party-discipline effect increases MPs' loyalty towards their own party, even if this is detrimental to voters' welfare.

Both effects go in the same direction for majority MPs, but they go in opposite directions for opposition MPs because the latter have a party directive to vote against the government. Then, the model predicts that the minimum tenure requirement will have an unambiguously positive impact on the probability to vote confidence for majority MPs, but it will have an ambiguous effect on opposition MPs, depending on which (if any) of the pivotal and party-discipline effect dominates. These predictions are confirmed by the heterogeneity analysis: the estimated effect is positive and highly significant for majority MPs, whereas it is negative or zero for opposition MPs (i.e. the party-discipline effect seems to dominate). The model shows that if the party-discipline effect dominates, the minimum tenure requirement is distortionary: it induces majority MPs to vote in favor of the government and opposition MPs to vote against the government when it would be in the voters' interest to do otherwise.

A model extension shows that tenure-dependent benefits also act as a reelection incentive on legislative effort. They induce MPs to put more effort into signaling their legislative productivity in order to raise their nomination and reelection chances. In line with this prediction, the tenure requirement increases both the number of bills submitted by the legislators and those approved. The reelection incentive also makes it more convenient for opposition MPs that want to support the government to switch party altogether, rather than defying party directives without changing affiliation. Empirically, I find that the tenure requirement more than doubles the likelihood of switching to a majority party, whereas switches to opposition parties are unaffected.

Even if parliamentary benefits have relatively small effects on the probability of voting confidence in a government, their impact on the political and financial stability of a country can be substantial. In parliamentary democracies, legislatures are constitutionally limited to a fixed term (five years in Italy) but can end prematurely if the government loses a confidence vote. Back-

of-the-envelope calculations show that one of the eight governments in legislatures XVI-XVIII (Berlusconi IV) would have resigned earlier, had the tenure requirement been absent. Italy experienced a severe sovereign debt crisis in the final months of Berlusconi's government, which an earlier defeat in a confidence vote could have potentially mitigated.

This paper makes three contributions to the literature on institutions, incentives and government turnover [Diermeier and Merlo, 2000]. First, it uncovers a previously understudied determinant of political stability. Studies by Gagliarducci and Paserman [2012]; Acconcia and Ronza [2022] and Carozzi et al. [2022] show that policymakers' gender and political fragmentation can affect government turnover at a local level. This paper finds that tenure-dependent benefits can affect the political and financial stability of an entire country. While focusing on the Italian context, it provides insights into mechanisms relevant to all parliamentary democracies in which MPs receive tenure-dependent pensions. These include most EU members and half members of the G20, which account for around 85 percent of gross world product.

Second, the model and empirical results illustrate the presence of a trade-off between government stability and party control. According to Canen et al. [2020a,b], party discipline has been a growing driver of polarization in US congress since the 1970s, accounting for 65 percent of polarization in roll call voting in 2018. This paper shows that tenure-dependent benefits can enhance party control over the voting choices of their legislators, even when defying party directives would be beneficial for the general welfare.

Third, this work contributes to the literature on politicians' incentives that tests predictions of political-agency models [Besley and Case, 1995; Besley, 2004; Preece et al., 2004]. Recent papers have focused on the impact of salaries on politicians' quality and performance [Diermeier et al., 2005], finding mostly positive effects [Ferraz and Finan, 2009; Kotakorpi and Poutvaara, 2011; Gagliarducci and Nannicini, 2013; Fisman et al., 2015].[1] Rather than focusing on wages, this study highlights how the time-contingent structure of certain parliamentary benefits can influence politicians' behavior differently from immediate compensation.[2] While the identification strategy does not allow to make inference on the selection of legislators, it confirms the positive effects of monetary incentives on legislative effort. More importantly, it provides new evidence that tenure-dependent benefits can affect politicians' behavior in high-stake decisions, such as voting confidence in the government and switching party affiliation, with long-lasting consequences on the political and financial stability of a country.

[1] Theoretical results are inconclusive: if Caselli and Morelli [2004] find that higher salaries improve the quality of politicians assuming they have uni-dimensional ability, more complex models lead to ambiguous predictions due to free-riding effects [Messner and Polborn, 2004], the simultaneous presence of entry and retention effects [Mattozzi and Merlo, 2008] the presence of different types of politicians [Diermeier et al., 2005; Keane and Merlo, 2010].

[2] In this sense, the paper is close to the cross-sectional analyses by Hall and Van Houweling [1995] and Groseclose and Krehbiel [1994] which provide suggestive evidence of strategic retirement of US congressmen to take advantage of 'the golden parachute' provision in the Federal Election Campaign Act.

The paper is organized as follows. Section 2 presents the institutional background of the pension reform. Section 3 describes the simple political-agency framework that guides the empirical analysis. Section 4 explains the empirical strategy and Section 5 illustrates the data. Section 6 presents the results, tests the validity of the empirical strategy and reports back-of-the-envelope calculations on the impact on government stability. Section 7 concludes.

2 Institutional background

2.1 The Parliament and the votes of confidence

Italy is a parliamentary democracy with a bicameral structure. Until legislature XVIII, the Chamber of Deputies and Senate were respectively composed by 630 and 315 elected members with the same legislative power. All MPs were elected simultaneously during general political elections, except for few Senators with a life tenure.[3] Regardless of the electoral-affiliation party, MPs have the legal duty to represent the interests of all Italian citizens. The parties form parliamentary groups whose heads determine the calendar of Parliament and the issues to be discussed during each parliamentary session. Yet, the parties have no formal control over the voting behaviour of the MPs while they are in Parliament [Merlo et al., 2010].

A majority in each house is required to pass a bill before it becomes a new law. Beyond the legislative power, the Parliament exercises control over the executive power primarily by means of a vote of confidence. There are three instances in which a vote of confidence can occur. First, before being officially in power, every government must obtain the majority in each house through a confirmation vote of confidence. Second, each house can cast a vote of no confidence at any moment during a legislature as long as the motion of no confidence is signed by at least one tenth of the house members [Senato, 2022a]. Third, the government may call a vote of confidence to speed up the legislative procedure: if the house confirms its confidence in relation to a bill proposal, the bill has to be approved without amendments.

As we can see in Table 1, there were 222 votes of confidence in the Chamber of Deputies and 204 votes of confidence in the Senate, for a total of 426 in legislatures XIV-XVIII. Votes of confidence can take place on any day of the week, including weekends, and occur rather frequently. The average distance between two votes of confidence is 38 days for the Senate and 35 for the Chamber, the maximum distance is 364 days for the Senate and 306 for the Chamber.

[3]These are former presidents of the Republic and at most five citizens directly appointed by the president of the Republic 'for outstanding patriotic merits'.

Table 1: Votes of confidence and majority margins in legislatures XIV-XVIII

Government	Legislature	Chamber votes	Senate votes	First vote	Last vote	Chamber majority	Senate majority
Berlusconi II	14	19	10	21/06/2001	28/12/2004	36	17
Berlusconi III	14	12	9	28/04/2005	09/02/2006	19	12
Prodi II	15	17	16	23/05/2006	24/01/2008	29	7
Berlusconi IV	16	32	23	15/05/2008	17/11/2011	20	15
Monti I	16	34	18	22/12/2011	21/12/2012	241	99
Letta I	17	10	7	30/04/2013	24/02/2014	138	75
Renzi I	17	31	42	26/03/2014	07/12/2016	63	2
Gentiloni I	17	14	20	14/12/2016	23/12/2017	53	11
Conte I	18	10	6	06/06/2018	05/08/2019	35	13
Conte II	18	21	24	10/09/2019	17/02/2021	28	11
Draghi I	18	22	29	25/02/2021	21/07/2022	216	64

Notes: This table shows the number of confidence votes in the Chamber and the Senate for each government in legislatures XIV-XVIII from 2001 to 2022. Each government is identified by the President of the Council and its ordinal number. *First vote* and *Last vote* indicate the date of the first and last confidence vote on each government. *Chamber majority* and *Senate majority* indicate the majority margin the government had in its first confidence vote in the Chamber and Senate, respectively.

If the government loses a vote of confidence in any of the two houses, the government falls [Camera dei Deputati, 2022a]. In this sense, the Italian confidence vote is similar to the confidence vote in the majority of parliamentary and semi-presidential democracies [Rubabshi-Shitrit and Hasson, 2022].[4] The constitutionally mandated duration of a legislature is five years. The President of the Republic can dissolve the Parliament before the natural end of a legislature and call for early elections if the Parliament is unable to form a stable majority in each house in support of a government.[5]

Early elections have been relatively frequent in Italy. There have been eighteen legislatures between 1948 and 2022 and half of them ended before the natural term. The high degree of political instability in Italy resulted in high executive turnover: there have been 69 governments in the last 75 years, with an average duration of 1.1 years. In the period under study, legislatures

[4]Opposition MPs do not need to find an alternative prime minister with a parliamentary majority to displace the incumbent, as in Germany, Spain, Hungary, Poland, Slovenia, Belgium and Israel. The vast majority of countries adopts a non-constructive vote of no-confidence as in Italy: Australia, Austria, Bulgaria, Canada, Czech Republic, Croatia, Denmark, Estonia, Finland, Iceland, India, Ireland, Latvia, Lithuania, Netherlands, New Zealand, Norway, Portugal, Romania, Slovakia, Sweden and the United Kingdom [Rubabshi-Shitrit and Hasson, 2022].

[5]Article 88 of the constitution states that the President of the Republic cannot dissolve the Parliament "during the final six months of the presidential term, unless said period coincides in full or in part with the final six months of Parliament.". There were three presidents in the period of analysis: Ciampi (1999-2006), Napolitano (2006-2013; 2013-2015) and Mattarella (2015-2022; 2022-). The last semester of the first two presidents coincided with the final six months of Legislature XIV and XVI, respectively, so these presidents were allowed to dissolve the Parliament at any moment during their seven-year terms. Mattarella's last semester occurred between August 2021 and February 2022, which corresponds to the period between the fifth and the eleventh month of the third year of Legislature XVIII. The empirical results are robust to excluding Legislature XVIII from the analysis or to reducing the bandwidth to six months around the threshold: from the fourth to the fifth year of Legislature XVIII.

had between one and three different governments (Table 1). Legislature XV and legislature XVIII ended before their natural end. The last vote of legislature XV was one year and nine months after its beginning, whereas the last vote of legislature XVIII was four years and four months after its beginning.

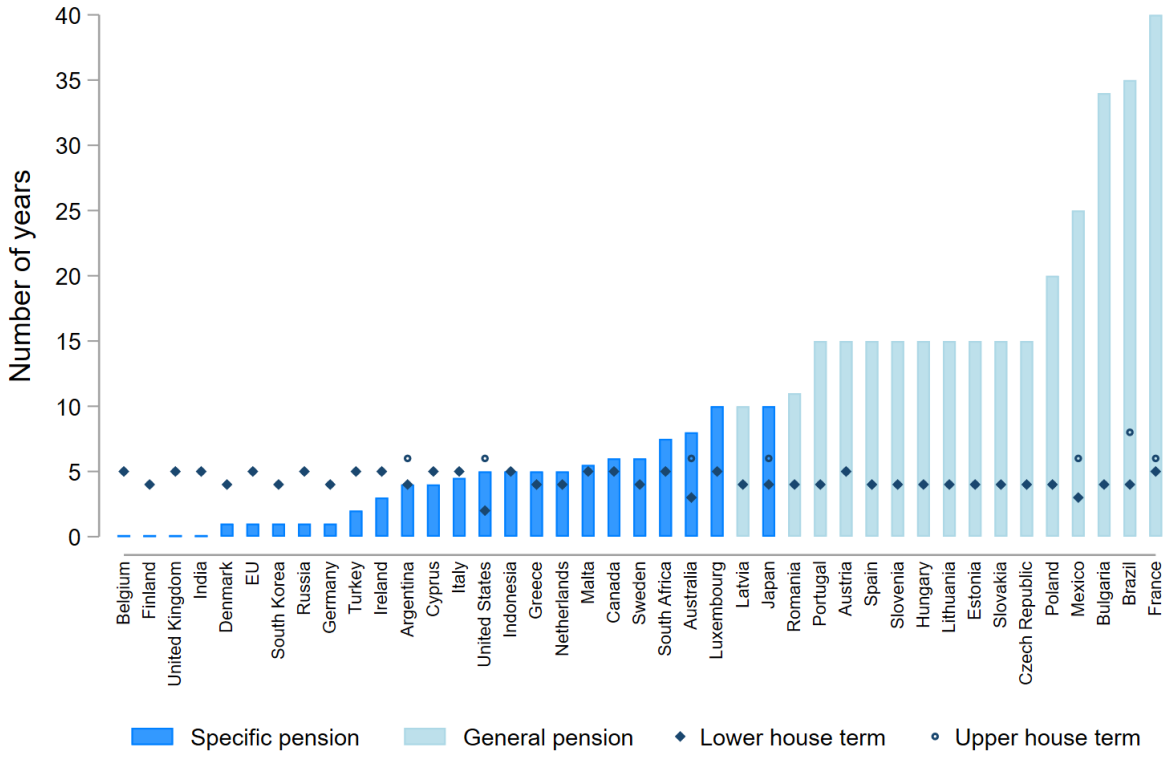
2.2 Parliamentary pensions

A large group of countries have a minimum tenure requirement to obtain a parliamentary pension (Table C2 and Figure 1). Many countries (e.g. Germany, UK, Italy, Turkey, Japan, South Korea, South Africa, Indonesia, Australia), have specific pension schemes dedicated to MPs only. Few countries (e.g. Canada, US), grant specific pensions to high-level civil servants, such as MPs and federal employees. In the remaining group of countries, such as France, MPs earn pension rights on the same terms as the rest of the labor market [Congressional Research Service, 2023; Office of the Superintendent of Financial Institutions Canada, 2019; European Parliament, 2021; House of Commons, 2019].

Most schemes covering MPs have short tenure requirements to account for the uncertain nature of political office. Figure 1 shows the minimum period of service as MP (in specific schemes) or the minimum period of employment (in general schemes) to qualify for a pension in 2009. When MPs participate in general schemes, their service as MP is counted as any other occupation and the minimum number of years of paid contributions to obtain a pension is generally higher, from ten years in Latvia to forty years in France. Specific schemes require shorter periods of service spent in Parliament, ranging from zero years in the United Kingdom, to five years in Germany and the United States, up to ten years in Luxembourg (Table C2). Depending on the country, the tenure cutoff can occur in the first half of the initial parliamentary term (e.g. South Korea, the European Parliament, Russia, Germany, and Turkey), at the end of the first term (e.g. Ireland, Italy, Indonesia, Argentinian Deputies, and U.S. Senators), or after re-election (e.g. Australia, Canada, South Africa, Japan, Argentinian Senators, and U.S. Representatives).

In Italy, MPs have always been subject to a specific pension scheme and the parliamentary pension is cumulative with respect to other pensions [Rizzo, 2018], but the tenure requirements changed over time. Since 1997, MPs have to pay parliamentary pension contributions equivalent to 4.5 years in Parliament. However, until 2007, MPs could spend only 2.5 years in Parliament and still obtain a parliamentary pension by paying the missing monthly pension contributions [De Santis, 2020]. The pension contribution was 8.6 percent of the gross parliamentary wage and the pension varied between 25 and 80 percent of the parliamentary monthly wage, increasing in tenure (from 5 to 15 years of tenure). In 2006 the gross parliamentary wage was €$12,434$ and therefore, the minimum parliamentary pension was €$3,108$ (Figure 4a).

Figure 1: Tenure requirements for parliamentary pensions by country in 2009



Notes: This figure shows the minimum number of years that MPs are required to work to obtain a pension in all countries with a democratically-elected Parliament in the G20 and the European Union in 2009. In lighter blue the countries in which MPs have a general pension scheme that applies to the entire population and years in parliament count as any other employment year. In darker blue the countries in which MPs have a specific pension scheme and the minimum tenure requirement refers to the minimum number of years in Parliament. The diamonds and circles represent the maximum term durations of the lower and upper houses of the country's parliament, respectively. The sources of these data are shown in Table C2.

In 2007, the right to pay the missing pension contributions to obtain a parliamentary pension was suppressed. Since 2008 (from legislature XVI onwards) MPs would receive a parliamentary pension only if they had more than 4.5 years of parliamentary tenure over their lifetime [Camera dei Deputati, 2007; Senato, 2022b].[6] MPs were fully aware of the suppression of the pension redemption scheme, since this decision was announced by the presidencies of both houses of Parliament and drew large media attention [Fusani, 2007; Sesto, 2021]. If this reform was aimed at cutting the high costs of the Italian Parliament, several commentators warned about its distortionary incentive

[6]Officially the minimum tenure is 5 years (i.e. one complete parliamentary term). However, to obtain an additional year of seniority, it is sufficient to spend at least half of the additional year in Parliament. As the tenure calculation approximates to the next semester, the eligibility threshold is actually 4 years, 6 months and 1 day [Osservatorio sui Conti Pubblici Italiani, 2021].

of voting in favor of a government to avoid the end of a parliamentary term before 4.5 years of tenure [De Santis, 2020; Osservatorio sui Conti Pubblici Italiani, 2021].

In addition, the monthly pension amount was changed, ranging between 20 and 60 percent of the final gross parliamentary monthly wage, increasing in tenure (from 5 to 15 years of tenure) [Camera dei Deputati, 2007]. The gross parliamentary monthly wage in legislature XVI was €10,435 and the pension contribution was 8.8 percent of the gross parliamentary wage. If the parliamentary term ended just before the MP could reach 4.5 years of tenure, the MP would lose an annual pension of €25,044 from age 65 to the rest of their life as well as €49,587 in already paid pension contributions [Camera dei Deputati, 2013]. The minimum parliamentary pension was 57 percent higher than the average gross monthly pension in Italy in 2011 [ISTAT, 2013]. For MPs elected after January 1, 2012, the pension scheme changed from a final-salary pension scheme to a fully contributory pension scheme, resulting in a pension cut from legislature XVI to legislatures XVII and XVIII (Figure 4a). Over the past two legislative terms, the minimum annual pension was €11,640, which is close to the $14,790 minimum pension received by U.S. Congress members after five years of service [Congressional Research Service, 2023].

Potential confounders. The parliamentary pension is not the only parliamentary benefit with a discontinuity at 4.5 years of tenure. At the end of a parliamentary term, an MP receives a severance pay that increases by 80 percent of the monthly wage of the MP in the middle of each year of parliamentary tenure, including at 4.5 years of tenure [Camera dei Deputati, 2001, 2022a]. Contrary to the minimum tenure requirement for a parliamentary pension, the severance pay scheme remained fixed over the period of analysis.

The electoral system changed in 2005 and 2017, with variations in the percentage of seats assigned with a plurality rule, a proportional rule, or a majority prize.[7] Throughout this period, regardless of the electoral rule, voters could only vote for a party and could not express preferences on the candidates, who were instead selected and ranked by each party [Chiaramonte and d'Alimonte, 2018]. Consequently, party loyalty remained crucial for MPs' reelections under both plurality and proportional rules.

Finally, following a constitutional referendum, in 2019 the Parliament approved a reform which reduced the number of Deputies from 630 to 400 and the number of Senators to 315 to 200, starting from legislature XIX [Dipartimento per le Riforme Istituzionali, 2022]. Even if this constitutional reform did not have a direct impact on the analyzed legislatures, it could have had some anticipation

[7] From 1993 to 2005, it was a system based on 75 percent single-member districts with a plurality rule and 25 percent proportional seats. The change introduced in 2005 assigned all the seats proportionally, but the party or the coalition with a plurality of votes at the national or regional level would obtain a majority prize in the Chamber and Senate, respectively. The change introduced in 2017 assigned two thirds of the seats in multi-member districts proportionally and the rest with a plurality rule in single-member districts.

effects on the voting behavior of MPs in legislature XVIII.

3 Conceptual framework

This section makes precise how the minimum tenure requirement for a parliamentary pension should affect MPs' voting behavior, using a simple political-agency model in the spirit of Besley [2007]. This conceptual framework yields several predictions that can be tested empirically.

Suppose that every politician is elected at the beginning of period 1, can be reelected in period 2, and retires in period 3.[8] Politicians elected in party j choose one binary action $c_{jt} \in \{0, 1\}$ in each of the first two periods, namely whether to vote confidence in the government or not. Assume that if a government loses the vote of confidence, the legislature ends before its natural term and there are early elections.[9]

Politicians are elected in majority parties M in favor of the government or in opposition parties m against the government: $i \in \{M, m\}$. Since the confidence vote of each MP is disclosed only after all MPs have voted, I assume that MPs do not observe the decisions of the other MPs when they vote. Let $\sigma(c_{j1})$ denote the probability that the government wins the confidence vote and the first legislature reaches its natural end, which is higher if the MP votes in favor: $\sigma(1) > \sigma(0)$.

Let $\pi_j(c_{jt})$ denote the probability that the MP is reelected and assume it is higher if they vote following party directives: $\pi_M(1) > \pi_M(0)$ and $\pi_m(0) > \pi_m(1)$. This assumption is based on the empirical evidence that first-term MPs who vote against their party directives are 10-25 percent less likely to be reelected (see Table C1 in Appendix Section E). Crucially, since 1993 voters cannot express a vote of preference for a particular candidate within a party in Italian parliamentary elections [Chiaramonte and d'Alimonte, 2018]. The candidates and the order of election are chosen by the respective parties. Therefore, voting according to voters' interest does not directly increase MPs' reelection probabilities in this model, but voting according to party directives does.

All politicians receive a per-period payoff $\mathcal{I}$ from holding a parliamentary seat (e.g. parliamentary wage, ego rents). If MPs are not reelected, they abandon the political career and earn a private wage w, which can be heterogeneous across politicians. When they retire, all MPs obtain a private pension proportional to their wage ξw. Assume politicians receive a parliamentary pension ρ only if they complete the first parliamentary term (i.e. the government wins the vote of confidence) or if they are elected for two parliamentary terms (even if incomplete).

When in Parliament, politicians observe the state of the world $s_t \in \{0, 1\}$, which is an indicator

[8] 74 percent of the MPs in the sample remained in Parliament for no longer than two parliamentary terms, but the model can be extended to multiple periods without loss of generality.

[9] One could complicate the model and assume that losing the vote of confidence is associated with a positive (less than one) probability that the legislature ends prematurely. Under this assumption all the effects would be dampened, but the model would yield the same qualitative predictions.

on the net welfare gain that the government is producing. If $s_t = 0$, it would be in the voters' interest for the Parliament to exercise its control power over the executive and topple the government. If $s_t = 1$, it would be in the voters' interest for the Parliament to guarantee government stability and vote confidence in the government. Voters receive a payoff Ω only if the politician they have elected votes according to the state of the world: i.e. if $c_{jt} = s_t$. If $c_{jt} \neq s_t$, voters receive 0. Politicians care about their voters' welfare up to a certain extent, measured by a parameter α. I abstract away from considerations on the relative wage and assume that politicians always prefer the political career to the private sector career: $\alpha\Omega + \mathcal{I} \geq w$.

Politicians have a time-additive intertemporal utility function, discount future by a factor $\beta < 1$ and the within-period utility function $u(\cdot)$ is increasing and concave. Note that, if reelected, the second-period utility of an MP is independent of her majority-opposition status and politicians always act in the voters' interest since it is their last term: second-period utility for a reelected MP is always $u(\mathcal{I} + \alpha\Omega)$.

MPs elected in a party $j \in \{m, M\}$ in period 1 choose their confidence vote c_{j1} under state of the world s_1 to maximize expected lifetime utility:

$$\begin{aligned}\max_{c_{j1}} V_j(c_{j1}) =& u(\mathcal{I} + \alpha[s_1 c_{j1} + (1 - s_1)(1 - c_{j1})]\Omega) + \beta\{\pi_j(c_{j1})u(\mathcal{I} + \alpha\Omega) + [1 - \pi_j(c_{j1})]u(w)\} \\ &+ \beta^2\{\gamma_j(c_{j1})u(\rho + \xi w) + [1 - \gamma_j(c_{j1})]u(\xi w)\}\end{aligned} \tag{1}$$

where $\gamma_j(c_{j1})$ is the probability of reaching the tenure requirement to obtain a parliamentary pension. If there is no tenure requirement (i.e. pre-reform) or if the vote c_1 occurs after MP j has reached the tenure requirement, we have $\gamma_j^{Pre}(c_{j1}) = 1$. The MP has a guaranteed parliamentary pension at the moment of the confidence vote.

If there is a tenure requirement (i.e. post-reform) and the vote c_1 occurs before the MP reaches the tenure requirement, we have $\gamma_j^{Post}(c_{j1}) = \sigma(c_{j1}) + [1 - \sigma(c_{j1})]\pi_j(c_{j1})$. After the reform, the probability the MPs will obtain a parliamentary pension is equal to the probability that the first legislature does not end prematurely plus the probability of being reelected in case the government falls.

The change in the utility increase for voting confidence in the government due to the introduction of the minimum tenure requirement is:

$$\begin{aligned}\Delta V_j^{Post} - \Delta V_j^{Pre} =& \beta^2[u(\rho + \xi w) - u(\xi w)]\Delta\gamma_j^{Post} = \\ & \beta^2[u(\rho + \xi w) - u(\xi w)]\{\Delta\sigma[1 - \pi_j(0)] + \Delta\pi_j[1 - \sigma(1)]\}\end{aligned} \tag{2}$$

where $\Delta V_j^s \equiv V_j^s(1) - V_j^s(0)$ is the increase in expected utility for voting in favor relative to

voting against before ($s = Pre$) or after ($s = Post$) the reform. $\Delta\gamma_j^{Post} \equiv \gamma_j^{Post}(1) - \gamma_j^{Post}(0)$, is the increase in probability of reaching the tenure requirement for voting confidence relative to voting against after the reform. $\Delta\sigma \equiv \sigma(1) - \sigma(0)$ and $\Delta\pi_j \equiv \pi_j(1) - \pi_j(0)$ are the increase in probability of government survival and of reelection for voting confidence relative to voting against.[10]

The introduction of the minimum tenure requirement generates an overall incentive on MPs' confidence votes that is determined by the change in probability of obtaining a parliamentary pension $\Delta\gamma_j^{Post}$ multiplied by the discounted utility gain associated with the parliamentary pension $\beta^2[u(\rho + \xi w) - u(\xi w)]$. This overall incentive can be decomposed into two effects on politicians' behavior.

The first term in curly brackets ($\Delta\sigma[1 - \pi_j(0)]$) is a *pivotal effect*: the incentive to vote confidence in order to increase the probability of government survival, complete the legislature and secure a parliamentary pension in the first term. This effect becomes smaller the higher the probability of being reelected.

The second term in curly brackets ($\Delta\pi_j[1 - \sigma(1)]$) is a *party-discipline effect*: the incentive to vote following party directives so as to increase the probability of being reelected and reach the tenure requirement in the second legislature, in case the government falls and there are early elections. This effect becomes smaller the higher the probability of government survival.

Both pivotal and party-discipline effects decrease when the government has a larger majority margin ($\sigma(0), \sigma(1) \to 1$), as each MP is less likely to be pivotal and the probability of a government fall is lower. The effects decrease in private wage w because of diminishing marginal utility and increase in age because of lower discounting.

The pivotal effect and the party-discipline effects are both positive for majority MPs ($\Delta\pi_M > 0$ and $\Delta\sigma > 0$). The tenure requirement unambiguously incentivizes MPs' to vote confidence in the government before the threshold is reached, because voting confidence increases the probability of government survival and also their reelection probability.

The pivotal effect and the party-discipline effects have opposite signs for opposition MPs ($\Delta\pi_M > 0$ and $\Delta\sigma < 0$). The minimum tenure requirement for the parliamentary pension has an ambiguous effect on the behavior of newly-elected opposition MPs for voting confidence. If the incentive to increase the chances of government survival to obtain the pension in the first term is lower than the fear of losing the possibility of being reelected and obtain the pension later in case of government defeat ($\Delta\sigma[1 - \pi_j(0)] \leq \Delta\pi_j[1 - \sigma(1)]$), then the minimum tenure requirement incentives newly-elected opposition MPs to vote no confidence.

Majority MPs always vote confidence in the first period following the party directives if they

[10]This simple model abstracts away from general equilibrium considerations. Formally, I assume that $\sigma^{Pre}(c_{j1}) = \sigma^{Post}(c_{j1}) = \sigma(c_{j1})$ and $\pi^{Pre}(c_{j1}) = \pi^{Post}(c_{j1}) = \pi(c_{j1})$.

are uninterested in voters' welfare ($\alpha = 0$) and always vote according to government performance if they are eminently interested in voters' welfare ($\alpha \to \infty$). If the party-discipline effect dominates, opposition MPs always vote no confidence in the first period following the party directives if they are uninterested in voters' welfare ($\alpha = 0$) and always vote according to government performance if they are eminently interested in voters' welfare ($\alpha \to \infty$). In these extreme cases (fully 'opportunistic' or fully 'vocational' politicians), the minimum pension requirement has no effect on their voting behavior (Appendix Section A).

If politicians are sufficiently but no fully opportunistic, we can summarize the theoretical results in the following empirical predictions.

Prediction 1: *The tenure-dependent benefit increases the probability that majority MPs vote confidence in the government. It has an ambiguous impact on the probability opposition MPs vote confidence in the government, which is negative if the party-discipline effect dominates the pivotal effect.*

Prediction 2: *Larger majority margins and higher pre-parliament earnings weaken the effects of the tenure-dependent benefit for both majority and opposition MPs. Age strengthens the effects.*

Normative implications. If voters have no preference for government stability, Appendix Section A shows that the minimum tenure requirement is a distortionary incentive for majority MPs because it induces them to vote in favor of the government, when it would be in the voters' interest to vote against. If the party-discipline effect dominates, the minimum tenure requirement is also a distortionary incentive for opposition MPs because it induces them to vote against the government, when it would be in the voters' interest to vote in favor.

According to the definition by Besley [2007], if the party-discipline effect dominates or at least offsets the pivotal effect, the minimum tenure requirement is a political failure as it produces a negative ex-ante social surplus (Appendix A.1). The model shows an example in which political survival considerations can be a source of real inefficiencies, as summarized by Besley and Coate [1998].

This normative analysis assumes away the possibility that government stability could be welfare-enhancing per se. When government stability is positively valued by voters (Appendix Section B), the minimum tenure requirement decreases ex-ante social surplus only if voters' preference for government stability is sufficiently low.

4 Empirical strategy

4.1 Identification

I closely follow the identification strategy by Grembi et al. [2016], as explained in appendix Section D. Given the institutional background described above, there are three different treatments: the severance pay that increases at the threshold, the pension eligibility that changes at the threshold only after 2008, and the changes in the pension amount, the electoral law and other temporal shocks that applied uniformly on both sides of the threshold.

To identify the local average treatment effect of the pension eligibility, we require two assumptions. First, similarly to regression discontinuity designs, all potential outcomes conditional on the treatment status must be continuous in the parliamentary tenure. To indirectly test for the first assumption, I analyze the presence of discontinuities in predetermined variables and in the density of confidence votes at the threshold (Section 6.1).

Second, similarly to difference-in-differences, the effect of the severance pay at the tenure threshold should not vary over time nor with the pension amount. To indirectly test for this second assumption, I estimate the pattern of the discontinuities in Y_{it} before t_0 and show that observations just below and just above Z_c were not on differential trends before the adoption of the minimum tenure requirement (Figure 4b). Under these two assumptions, the difference-in-discontinuities estimator identifies the causal effect of the parliamentary pension in a neighborhood of the tenure threshold for MPs with a severance pay equal to 320 percent of the final parliamentary wage.

To identify an estimand that generally applies to MPs with any severance pay, we can add a third assumption: there is no interaction between the effect of the severance pay and the effect of the parliamentary pension policy. This assumption would be violated if MPs just below and above the threshold, who receives a different severance pay, reacted to the minimum tenure requirement for the pension in different ways. I indirectly test this assumption by showing that the discontinuity of the severance pay has no meaningful impact on the voting behavior of MPs, prior to the introduction of the minimum tenure requirement for a parliamentary pension (Figure 2a).

4.2 Estimation

Let t_0 be the time in which the reform came into force (May 14, 2008). First, I can restrict the panel to the confidence votes occurred after (before) the reform $t \geq t_0$ ($t < t_0$) and implement a local linear regression:

$$Y_{ipgt} = \delta_0 + \delta_1 \tilde{Z}_{it} + D_{it}(\pi_0 + \pi_1 \tilde{Z}_{it}) + \mu H_{it} + \phi_i + \eta_{pg} + u_{ipgt} \tag{3}$$

where D_{it}, is an indicator for tenure of MP i at time t less than or equal to 4.5 years capturing treatment status, $\tilde{Z}_{it} = Z_{it} - Z_c$ is the parliamentary tenure of the MP centered at the threshold, and H_{it} is the house indicator equal to 1 if the MP is a senator and 0 if the MP is a deputy at time t. η_{pg} are party-by-government fixed effects, which control for the average support that the electoral-affiliation party p gives to the government g, and ϕ_i are individual MP fixed effects. The coefficient π_0 is the RD estimator and identifies the local treatment effect of risking to lose the parliamentary pension. These separate regressions allow to test whether the severance pay had a significant impact on the MPs' voting behavior before t_0 or whether the change in voting behavior is driven by the introduction of the tenure requirement for a parliamentary pension after t_0.

To disentangle the two effects, I use a difference-in-discontinuities design [Grembi et al., 2016]. The method consists in fitting linear regression functions to the votes distributed within a tenure window h on either side of the tenure threshold Z_c, both before and after t_0. Formally, we restrict the sample to votes in the tenure interval $Z_{it} \in [Z_c - h, Z_c + h]$ and estimate the model:

$$Y_{ipgt} = \zeta_0 + \zeta_1 \tilde{Z}_{it} + D_{it}(\theta_0 + \theta_1 \tilde{Z}_{it}) + Post_t[\alpha_0 + \alpha_1 \tilde{Z}_{it} + D_{it}(\beta_0 + \beta_1 \tilde{Z}_{it})] + \nu H_{it} + \phi_i + \eta_{pg} + \varepsilon_{ipgt} \quad (4)$$

where $Post_t$ is an indicator for being elected in the post-treatment period $t \geq t_0$.[11] The coefficient β_0 is the difference-in-discontinuities estimator and identifies the treatment effect of risking to lose the parliamentary pension, as the treatment is $D_i \cdot Post_t$. In all the tables, I show the results without fixed effects, with individual fixed effects only, and with all fixed effects. The inclusion of individual fixed effects allows to exploit the variation in the voting behavior of an MP, before and after the threshold is reached. It controls for changes in the composition of MPs around the tenure threshold, due to to new elections or by-elections. The inclusion of party-by-government fixed effects allows to exploit the variation between members of the same party voting for the same government, but with different tenure. It accounts for changes in governments around the tenure threshold.[12] The specification with all fixed effects captures the change in voting behavior within each MP voting for the same government at the tenure threshold, which is the aim of the empirical analysis.[13]

I treat the running variable as discrete because confidence votes are lumpy and irregularly

[11] I cannot use the 2.5-year threshold because of data limitations: my dataset does not contain votes of confidence before 1997, when this threshold was introduced. Therefore, at this threshold I cannot disentangle the minimum tenure requirement effect from the severance pay effect.

[12] A change in government within the bandwidth occurred in December 2016, when Renzi I was replaced by Gentiloni I.

[13] To identify and estimate the coefficient of interest the specification with all fixed effects exploits the variation of votes within MPs that participated in at least one confidence vote in each side of the threshold within the bandwidth. These constitute 82 percent of the observations in the regression sample. If I keep only these MPs in the sample, the estimates are virtually unchanged.

distributed over time (Figure D1). Kolesár and Rothe [2018] advise against clustering standard errors by a discrete running variable, as this can lead to confidence intervals with poor coverage properties. Therefore, in the main specification I cluster standard errors at the MP level to account for within-MP autocorrelation. Given that groups of MPs share a similar tenure (Figures D2 and D3), in the Appendix I also show that the main results are robust to clustering standard errors at the level of the vote date and at the level of the first day in parliament. These alternative clustering strategies account for correlations among MPs voting on the same day, who are influenced by shared aggregate idiosyncratic factors, as well as correlations among MPs elected simultaneously for the first time. Because there is no clear way to determine the optimal bandwidth in the case of a discrete running variable, I present the robustness of the results to multiple bandwidths from three months up to three years on each side of the cutoff [Iizuka et al., 2021]. Each regression uses uniform kernels. Following Gelman and Imbens [2019], I use local linear regressions with different first-order polynomials of the running variable estimated at each side of the threshold, but the main results are qualitatively unchanged when using local quadratic regressions.[14]

Validity tests. To indirectly test the assumption of continuous potential outcomes at the threshold, I conduct difference-in-discontinuities estimations using MPs' predetermined characteristics (such as gender, age, education, origin, income, and occupation) as the dependent variable, clustering standard errors at the MP level (Table C3). None of the ten estimates for these characteristics is significant at conventional levels. Similarly, I perform difference-in-discontinuities estimations using ten indicators related to the type of confidence vote, clustering standard errors at the date-of-vote level (Table C4). Among these, only one estimate—confidence on foreign affairs—is marginally significant. The absence of systematic discontinuities in both predetermined characteristics and types of confidence votes suggests that selection effects can be ruled out within a narrow window around the threshold.

Identification of the treatment effect requires that the MPs and the government do not manipulate the date of confidence votes. First, motions of no-confidence may be postponed to 4.5 years after the elections in order to let newly-elected MPs secure a pension and be more willing to vote against the government. This does not seem to be the case: Figure D4 shows that only one motion of no-confidence occurred within one year after the threshold. Second, the government may anticipate confidence votes, exploiting the economic incentive MPs have to prolong the legislature. Yet, in Figure D1 we do not observe any bunching of confidence votes before the cutoff. There is a spike of votes forty days *after* the cutoff, only because the government called for a vote of confidence on 5 different articles of the same law in the Senate and 3 different articles of the same

[14] Gelman and Imbens [2019] show that controlling for high-order polynomials in regression discontinuity analysis leads to noisy estimates, sensitivity to the degree of the polynomial, and poor coverage of confidence intervals. They recommend instead to use estimators based on local linear or quadratic polynomials.

law in the Chamber in October 2017.[15] If anything, the government should have anticipated those votes before the threshold to get advantage of the minimum tenure requirement for a parliamentary pension.

To test for the presence of manipulation around the 4.5 years cutoff, I use the test proposed by Frandsen [2017] for regression discontinuity designs with a discrete running variable, since confidence votes are lumpy and scattered over time. The test cannot reject the null hypothesis (p-value$= 0.342$) of absence of manipulation in the distribution of the tenure of MPs in confidence votes, using a value for the test parameter as low as $k = 10^{-8}$.[16]

The absence of manipulation is plausible in this context. If opposition parties believe the government is vulnerable, they are unlikely to delay a motion of no confidence until the final semester of the legislature. Similarly, any attempt by the government to preemptively anticipate confidence votes before the threshold would be ineffective, as the opposition can easily initiate a motion of no confidence afterwards with the support of just one-tenth of house members [Senato, 2022a].

5 Data

Each of the two houses of Parliament provide information on demographics and other characteristics of all members elected in each legislature since the inception of the Italian Republic in 1948. This data includes the name, surname, gender, date and town of birth, level of education and previous job, start date and end date of each parliamentary term, the parliamentary group (party) to which each MP is affiliated and the start-date and end-date of the party affiliation during a legislature. The parliamentary tenure corresponds to the total days spent as an MP of any of the two houses, including weekends. To construct an accurate measure of the parliamentary tenure of each MP, I have merged the Deputies' and Senators' datasets using the name and surname of the MPs as the linking variable and summed the duration of all their parliamentary terms in both houses at each point in time. I exclude Senators with a life tenure from the analysis as they continue to receive a parliamentary wage until the end of their life and they never receive a parliamentary pension. The Parliament also provides measures of legislative output: for each legislative bill proposal, the date of presentation, the first sponsor (*primo firmatario*), whether it was an ordinary or constitutional bill, and whether it was approved.

[15] These laws are the *DDL 2941* in the Senate and the *Atto Camera 2352* in the Chamber.

[16] I implement the test using the Stata command *rddisttestk* [Frandsen, 2017]. The parameter k determines the maximal degree of nonlinearity in the probability mass function that is considered to be compatible with absence of manipulation.

A high k allows the mass at the cutoff to deviate substantially from linearity before the test can reject with high probability, whereas a low k means that even with small deviations from linearity the test will reject with high probability. A higher k implies a lower power of the test to detect manipulation.

In addition, the two houses kept the stenographic record of all parliamentary sessions in legislatures XIV-XVIII. I have systemically searched for each vote of confidence and motion of no confidence occurred during these legislatures. The votes of all MPs are revealed at the end of a confidence vote and the stenographic records contain a list of all the MPs who voted in favor, against or abstained. I have digitized these votes from the original stenographic records and created a dataset that contains the voting behavior of all Deputies and Senators in the 426 votes of confidence occurred during legislatures XIV-XVIII. I classified each confidence vote into ten types (Figure D5): confirmation votes, motions of no confidence, and eight additional categories based on the laws that prompted the confidence vote, refining the law classifications scraped from the Senate's website [Senato, 2024]. The stenographic records also document each party's voting intention, enabling the construction of an indicator variable to identify whether an MP belonged to a majority party or an opposition party. To determine the electoral affiliation of each MP, I relied on the parliamentary group to which they belonged at the beginning of the legislature.[17]

Finally, I have collected data on the first annual before-tax income reported by Deputies and Senators from 1981 to 2022.[18] As tax returns refer to the previous fiscal year, I have information on each Deputy's and Senator's income in the year prior to entering Parliament. I consider this variable as the data analogue of the private wage w in the model discussed in Section 3. Data from 1981 to 2005 and in 2013-2014 was kindly provided by the Fondazione Rodolfo Debenedetti [2009] and by the Fondazione Openpolis [2017], respectively. For the remaining years, I have digitized the copies of the tax returns of each Deputy and Senator contained in the archives of the Chamber and the Senate. Only 17 out of 3,032 MPs (0.56 percent) in the analyzed five legislatures have a missing tax return in their first year of parliament, mostly because they started their parliamentary career before 1982 or because their parliamentary career lasted only few months.

Summary Statistics. Figures D2 and D3 show the number of MPs by the date they began their parliamentary career, for all MPs in legislatures XIV-XVIII and for those within the bandwidth, respectively. Most MPs start their tenure close to the beginning of a legislature, but there is some variation even among MPs that are newly elected in the same legislature. This variation occurs for two main reasons. First, the proclamation of elected MPs can be delayed by several days because electoral results must be verified and certified by local electoral offices (DPR 361/1957 Art. 76-77), and some offices take longer to complete the necessary checks [Mackinson, 2021]. Second, by-elections add further variation when an MP's seat becomes vacant due to resignation (e.g., role

[17] A parliamentary group has to have at least 10 members in the Senate or 20 members in the Chamber of Deputies [Camera dei Deputati, 1997; Senato, 2017]. MPs belonging to very small parties are categorized as belonging to the same parliamentary group 'Mixed' and excluded from the sample of majority and opposition parties. The main results of the analysis are robust to the exclusion of these MPs.

[18] Since 1982, Italian elected officials are required to publicly disclose their annual tax returns [Merlo et al., 2010]. Therefore, the first tax returns refer to the fiscal year 1981.

incompatibility), death, or disqualification (e.g., judicial rulings) [Camera dei Deputati, 2022b].

The composition of the Italian parliament is similar to parliaments of other European countries with respect to age, gender and education (see Merlo et al. [2010] for a comparison with the US congress). Table C5 contains summary statistics for predetermined characteristics and outcome variables for MPs with parliamentary tenure in a window of one year below and above 4.5 years, before and after the reform of the parliamentary pension.

Panel A shows that there were a total of 33,308 confidence votes in legislatures XIV-XVIII expressed by single MPs between 3.5 and 5.5 years of tenure. From 2001 to 2022, the Parliament became slightly younger (from a pre-reform average age of 49 to 47 post-reform) and more gender-balanced (from 11 to 30 percent of women). Mechanically, tenure was around 4 years in the year before the 4.5-year threshold and almost 5 years in the year after. Post-reform MPs were slightly less educated than pre-reform MPs and substantially poorer, earning around twenty thousand Euros less in terms of pre-parliament annual gross income. This is because the last two legislatures saw a large influx of newly elected MPs with zero or very low income (Figures 4a and D13).

In Panel B we see that, before the reform, the shares of MPs voting confidence in the government and voting against party directives were similar between the two sides of the tenure threshold (both around 64 and 1 percent, respectively). But after the reform, the share of MPs voting confidence in the government was substantially higher in the year below the tenure threshold than in the year above (75 vs 63 percent), whereas the share of those voting against party directives was lower (6 vs 9 percent).

Panel C shows that confirmation votes and motions of no confidence account for a minority of all confidence votes: only 22 and 6, respectively, in the analyzed period (Figure D4). The majority of confidence votes were initiated by the government to expedite the legislative process, falling into the other eight categories.[19] Their focus varied over time based on prevailing circumstances. Figure D5 highlights that confidence votes on economy-related laws were particularly frequent during the sovereign debt crisis (2011–2012), while confidence votes on health-related laws became more common during the COVID-19 pandemic (2020–2021).

Panel D and E of Table C5 show the average daily probabilities an MP changes parliamentary group and proposes a legislative bill, respectively. While before the reform the daily probability of switching party was around 0.01 percent both below and above the threshold, after the reform it was almost twice as high below the tenure threshold (0.04 percent) as above (0.02). This difference is driven by switches to majority parties, whereas switches to opposition parties are similarly frequent on the two sides of the threshold.[20] The probability that a legislative bill is proposed is

[19]Note that a single confidence vote may pertain to laws or decrees that span multiple subjects. In this case, the table counts one confidence vote for each related subject.

[20]Switches to majority and opposition parties do not add up to 'all' switches, because the latter includes switches to the 'mixed group' which is not classified as majority or opposition.

an order of magnitude higher than the probability a legislative bill is proposed and then approved. Constitutional proposals are rare and almost none is approved.

6 Results

In the main regressions the dependent variable is defined as:

$$\textit{Confidence}_{ipgt} = \begin{cases} 1 & \text{if MP i elected in party p votes confidence in government g at time t,} \\ 0 & \text{if MP i elected in party p votes no confidence in government g at time t.} \end{cases}$$

Up to the end of legislature XVII, an abstention vote in the Senate counted as a vote against the proposed motion, so I set $Y_{ipgt} = 0$ for these particular cases. In all other cases (abstentions in the Chamber, abstentions in the Senate in legislature XVIII and no vote), I set Y_{ipgt} to missing. MPs that abstained or did not vote represent 20.2% of potential confidence votes in the bandwidth. Table C6 shows that the decision to abstain or to not vote is not significantly affected by the minimum tenure requirement in any of the specifications.

6.1 Government stability

Table 2 shows the difference-in-discontinuities estimates of a minimum tenure requirement for a parliamentary pension on the probability of voting confidence in the government. The effect is positive and significant in all specifications and the estimates become more precise when we add individual and party-by-government fixed effects. Exploiting the variation in votes for the same government by the same MP, we can see that the pension incentive significantly increases the probability of voting confidence in the government by 3.2 percentage points from an average of 70 percent. This corresponds to 28 additional MPs voting confidence in the government thanks to the parliamentary pension. The estimates with all fixed effects are significantly positive and similar across the two houses of Parliament (Table C7).

Table 2: Diff-in-disc estimates of minimum tenure requirement on confidence

	(1)	(2)	(3)
Post*Tenure under 4.5 years	0.059***	0.056***	0.032***
	(0.020)	(0.014)	(0.007)
N	33,038	33,038	33,038
R-squared	0.02	0.83	0.95
Average outcome	0.70	0.70	0.70
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

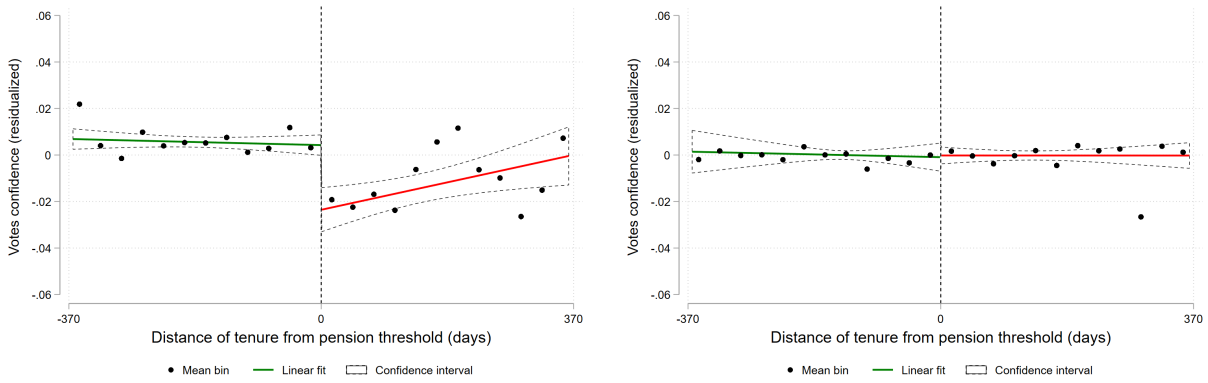
Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Figure 2 plots the average residualized votes of confidence on the distance from the 4.5-year tenure threshold.[21] Votes of confidence are residualized by regressing confidence on party-by-government and MP fixed effects, and averaged in monthly bins. The fitted lines best illustrate the trends in the data and the size of the jump, whereas the binned averages provide a sense of the underlying variability in the data. This exercise is performed in the period before and after the introduction of the minimum tenure requirement for a parliamentary pension. Figure 2 confirms the qualitative results of Table 2. The discontinuity in the probability of voting confidence at the threshold is large and significant only after the introduction of the minimum tenure requirement, whereas it is a precisely estimated zero in the pre-reform period. The increase in severance pay at the threshold does not seem to affect MPs' voting behavior. This is understandable considering it is a one-off payment corresponding to only four monthly pension payments.[22]

[21] Controlling for covariates or residualizing the outcome yields the same consistent estimate of the RD parameter of interest as long as the order of the polynomial of the running variable is correctly specified and the covariates are not discontinuous at the threshold [Lee and Lemieux, 2010].

[22] The increase in severance payment was €8,348 in legislature XVI, which represents only 16.8 percent of the loss in pension contributions (€49,587) or four monthly pension payments (€2,087). Pension payments were expected to last for sixteen years in 2008, given that the retirement age was 65 and life expectancy in Italy was 81 [World Bank, 2023]

Figure 2: Voting confidence as a function of tenure, post- and pre-treatment



(a) Post-treatment

(b) Pre-treatment

Notes: These figures show the effect of the parliamentary tenure distance from the 4.5 year-cutoff on the MP's probability of voting confidence in the government. The circles are the average residualized outcome on either side of the threshold. The solid and dashed lines represent the predicted values and the 95-percent confidence intervals of a local linear regression of the residualized outcome on days of tenure centered at the cutoff. The bandwidth includes observations within one year from the 4.5 year-cutoff.

This finding is robust to an array of robustness checks. The magnitude of the effect is significantly positive and remarkably stable when using different bandwidths around the tenure threshold, from three months up to three years on each side (Figure D6). The effects on confidence are very similar when using local quadratic regressions instead of local linear regression and are robust to clustering standard errors at date-of-vote or first-day-in-parliament level, once we control for fixed effects (Tables C8, C9 and C10). To assess the possibility that this result arises from random chance rather than from a causal relationship, I perform a set of estimations at placebo thresholds below and above 4 years and 6 months. Figure D7 shows that all the placebo estimates are lower than the true-threshold coefficient for the confidence vote.

6.2 Party discipline

An analysis of the heterogeneous effects of the policy provides further tests on the predictions of the political-agency model presented in Section 3. According to Prediction 1, we expect the minimum tenure requirement to have an unambiguously positive impact on the probability to vote confidence for majority MPs, whereas the effect on opposition MPs is ambiguous, depending on which of the pivotal and party-discipline effect dominates.

Table 3: Diff-in-disc estimates of minimum tenure requirement on confidence, by type of party

	Majority party			Opposition party		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.048*** (0.011)	0.048*** (0.009)	0.041*** (0.009)	-0.087*** (0.018)	0.000 (0.012)	0.004 (0.011)
N	22,785	22,785	22,785	9,221	9,221	9,221
R-squared	0.01	0.78	0.78	0.04	0.89	0.90
Average outcome	0.96	0.96	0.96	0.10	0.10	0.10
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP. The sample of majority and opposition parties excludes MPs elected in small parties belonging to the mixed parliamentary group.

As we can see in Table 3 and Figure D8, the model predictions hold. I define MPs whose electoral-affiliation party supports (opposes) the government *in its confirmation vote* as majority (opposition) MPs. The effect of the tenure requirement is positive and highly significant for majority MPs, whereas it is negative or zero for opposition MPs.[23] The party-discipline effect appears to dominate (column 4) or at least to offset the pivotal effect (columns 5-6).[24] These empirical results imply that the minimum tenure requirement is distortionary in the simple model presented in Section 3, because MPs are induced to vote according to their party directives rather than following voters' interest.

Figure 3 and Table 4 confirm that the minimum tenure requirement increased party discipline. The table reports the estimates of the coefficient β_0 in Equation (4) when I use as dependent variable an indicator variable equal to 1 if the MP voted against party directives at time t and 0 otherwise. Majority (opposition) MPs vote against party directives when they vote against (in favor of) the government. The pension incentive reduced the probability of voting against party directives by 2.8 percentage points, from an average of 6 percentage points. This result is robust to clustering standard errors at date-of-vote or first-day-in-parliament level (Tables C16 and C17), using a local quadratic RD estimator (Table C15) and a wide range of bandwidths (Figure D12).

[23]The samples of MPs elected in majority and opposition parties exclude MPs belonging to the mixed parliamentary group. This is why the sample size of Tables 3 and 4 is smaller than the sample size of Table 2, which contains all MPs.

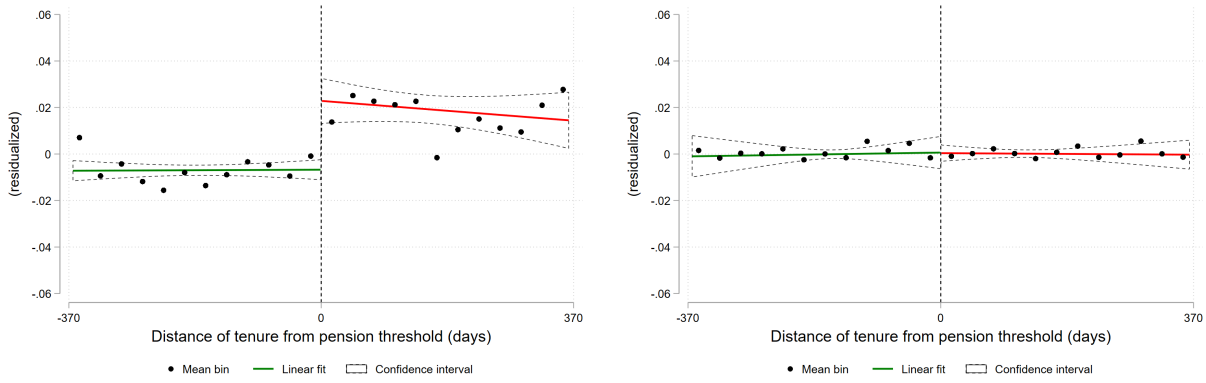
[24]The samples of MPs elected in majority and opposition parties are balanced on a set of predetermined characteristics (Tables C11 and C12). The significantly positive treatment effect on majority members is robust to the choice of different bandwidths (Figure D9). Figure D10 shows the set of placebo estimations by majority and opposition parties.

Table 4: Diff-in-disc estimates of minimum tenure requirement on vote against party directives

	(1)	(2)	(3)
Post*Tenure under 4.5 years	-0.065***	-0.040***	-0.028***
	(0.010)	(0.007)	(0.007)
N	32,006	32,006	32,006
R-squared	0.01	0.81	0.84
Average outcome	0.06	0.06	0.06
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Figure 3: Voting against party directives as a function of tenure, post- and pre-treatment



(a) Post-treatment

(b) Pre-treatment

Notes: These figures show the effect of the parliamentary tenure distance from the 4.5 year-cutoff on the MP's probability of voting against party directives. The circles are the average residualized outcome on either side of the threshold. The solid and dashed lines represent the predicted values and the 95-percent confidence intervals of a local linear regression of the residualized outcome on days of tenure centered at the cutoff. The bandwidth includes observations within one year from the 4.5 year-cutoff.

The effects weaken with majority margins, distance from retirement age, and income According to Prediction 2, a larger majority margin should weaken the pension incentive. This is because the probability to secure the pension in a first parliamentary term is higher and MPs are less concerned about being reelected, reducing the party-discipline effect. In addition, when a government have a large majority, MPs are less likely to be pivotal voters, reducing the pivotal effect. To test this prediction, I define the government 'majority margin' in each house as the difference between the number of MPs voting confidence *in the government confirmation vote* and the minimum number of MPs to obtain a majority (315 in the Chamber and 158 in the Senate). I restrict

the sample to the period after the introduction of the minimum tenure requirement and perform the estimation interacting all the regressors in (5) with the majority margin, separately for majority and opposition MPs.[25] These estimations rely on the conditional independence assumption that the interaction is not capturing the effects of correlated unobservables.

Table 5 shows the estimates of the relevant interaction: $D_i \cdot Margin_{it}$. According to the model, a larger majority margin should dampen the effects for both majority and opposition MPs. The empirical estimates of the interaction validate the model predictions: they are negative for majority MPs and positive or not significant for opposition MPs. When the majority margin is zero and each MP is truly pivotal, the pension incentive rises confidence votes of majority MPs by 7.3 percentage points. A larger margin of one hundred MPs dampens the effect on majority MPs by 2.7 percentage points. Similarly, Table C18 shows that larger majority margins weaken the tenure-requirement effects on party discipline. When the majority margin is zero, the pension incentives reduces the probability of voting against party directives by 4.5 percentage points. One hundred additional MPs sustaining the government rises the probability of defying party directives by 1.7 percentage points. The majority margin in a confirmation vote is an endogenous outcome. To address this concern, Tables C19-C20 show that the results are robust to excluding confirmation votes from the regression sample.

Table 5: Regression discontinuity estimates on confidence, heterogeneity by majority margin

	Majority party			Opposition party		
	(1)	(2)	(3)	(4)	(5)	(6)
Tenure under 4.5	0.079***	0.074***	0.073***	-0.143***	-0.000	0.012
years	(0.020)	(0.016)	(0.016)	(0.030)	(0.019)	(0.019)
Tenure under 4.5	-0.027***	-0.026***	-0.027***	0.064***	-0.020*	-0.010
years*Majority margin ('00)	(0.010)	(0.008)	(0.008)	(0.016)	(0.011)	(0.009)
N	18,939	18,939	18,939	7,245	7,245	7,245
R-squared	0.01	0.78	0.79	0.04	0.89	0.90
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Majority margin indicates the majority margin in the house in which the confidence vote took place measured in hundred MPs. In all regressions we control for the house of parliament of the MP.

If MPs discount the future, we also expect that closeness to retirement age amplifies the effects

[25] Let $Margin_{ig}$ be the majority margin of government g in the first confidence vote in the parliamentary house of MP i. I estimate

$$Y_{ipgt} = \psi_0 + \psi_1 \tilde{Z}_{it} + D_{it}(\omega_0 + \omega_1 \tilde{Z}_{it}) + Margin_{ig}[\psi_2 + \psi_3 \tilde{Z}_{it} + D_{it}(\omega_2 + \omega_3 \tilde{Z}_{it})] + v_{ipgt} \quad (5)$$

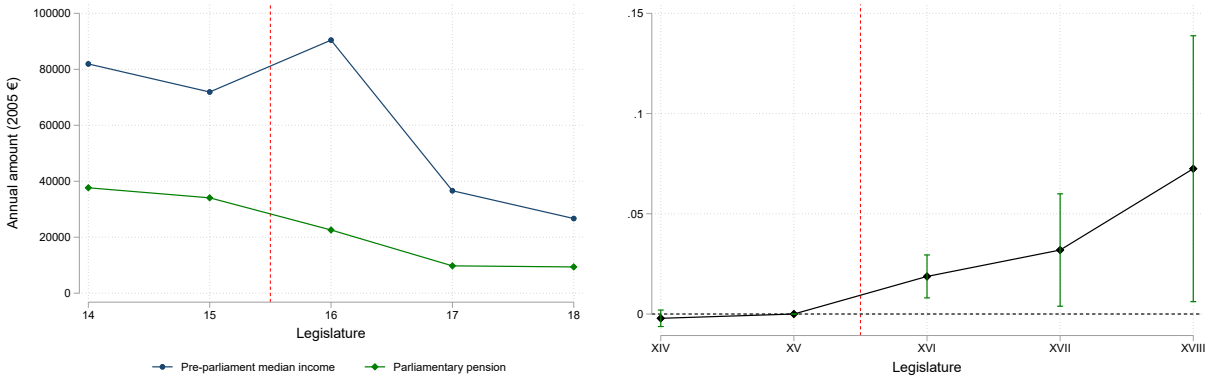
Table 5 reports the coefficient of interest ω_2, as well as the baseline coefficient ω_0.

of the pension incentive.[26] In Tables C21 and C22, I perform the same exercise as above using age when entering parliament as the interaction variable. In line with the model predictions, age of entry amplifies the positive effect on confidence for majority MPs, the negative effect on confidence for opposition MPs, and the negative effects on voting against party directives.

Finally, I perform the same heterogeneity analysis over real gross earnings in the year prior to entering parliament which is reported in the tax returns. Given that income increases with age, I residualize earnings by a quadratic polynomial in age to have a measure of the outside option that is comparable across MPs. In line with model predictions, Tables C23 and C24 show that higher earnings reduce the effects on both confidence and party-discipline, even though the interaction coefficients are not statistically different from zero. In brief, richer and younger MPs under stable governments tend to be less affected by tenure-dependent pensions than poorer, older MPs under unstable governments.

Effects increase over time as private earnings and reelection probabilities decrease. Figure 4b shows the timing of the effect performing the RD regression in Equation (3), separately for each of the five legislatures in the analyzed period. Reassuringly, the effect is not significantly different from zero before legislature XVI and it becomes significantly positive when the minimum tenure requirement is introduced.[27]

Figure 4: Pre-parliament earnings, parliamentary pension and confidence effects by legislature



(a) Median earnings and pension, by legislature

(b) RD coefficients on confidence, by legislature

Notes: Panel (a) shows the median earnings in the year prior to entering parliament and the minimum parliamentary pension they would obtain after 4.5 years of tenure, separately for each legislature. Panel (b) shows the RD coefficient and its 95 percent confidence interval estimating regression Equation (3), separately for each legislature. The red dashed line indicates the introduction of the minimum pension requirement at 4.5 years.

[26] If we extend the retirement age to a general time T, the model predicts that if $\beta < 1$ all the effects are amplified when T is lower (i.e. when the MP is closer to the retirement age).

[27] Legislature XV lasted less than two years and does not have a sufficient number of observations around the tenure threshold of 4.5 years to perform the RD estimation.

The effect appears to increase over time, despite the pension amount decreases in the last two legislatures (Figure 4a). The confidence interval is larger in the last legislature because it ended prematurely and there are less observations in the window around the 4.5 year threshold. Two reasons can explain the change in the point-estimates over the legislatures: a shift in the distribution of newly-elected MPs' private income and a change in the probability of being reelected.

The Italian parliament experienced a drastic turnover between legislature XVI and legislatures XVII-XVIII. The anti-establishment '5-star Movement' elected zero MPs in legislature XVI, but became the party with the largest number of MPs in the following two legislatures. Using newly-collected data on MPs' tax returns for the year prior to entering parliament, we can see that the distribution of pre-parliament income changed substantially between legislature XVI and XVII-XVIII. Figure 4a shows that the median pre-parliament annual income (in 2005 €) dropped from $90,424$€ in legislature XVI to $36,613$€ in legislature XVII and $26,690$€ in legislature XVIII. The median age of newly-elected MPs also decreased from 50 years in legislature XVI to 45-46 years in legislatures XVII-XVIII (Figure D14). Controlling for a quadratic polynomial of age when entering parliament, the decrease in average income from legislature XVI to legislatures XVII-XVIII is significant and amounts to about 50,000 euros (Figure D15).

Figure D13 shows that the pre-parliament annual income distribution in legislature XVI first-order stochastically dominates the pre-parliament annual income distributions in legislature XVII and legislature XVIII. The share of MPs earning zero income increased from 0.54 percent in legislature XVI to 8.48 and 6.62 percent in legislature XVII-XVIII, respectively. The share of MPs earning income below the poverty line ($11,239$€ in 2005) increased from 3.78 percent in legislature XVI to 17.78 and 22.68 percent in legislature XVII-XVIII, respectively. The parliamentary pension became a larger share of the pre-parliament median income in legislature XVII-XVIII (27-35 percent) relative to legislature XVI (25 percent). Assuming diminishing marginal utility, the parliamentary pension represented a stronger incentive for MPs with lower private income and lower expected private pension.

Legislature XVIII also saw a decrease in the probability MPs would be reelected and would obtain a parliamentary pension in the following legislature. This is because the number of MPs in each house was expected to be cut by 36.5 percent starting from legislature XIX after a constitutional referendum. According to the model, a fall in the reelection probability should reduce loyalty to the party by both majority and opposition MPs, resulting in a weaker positive party-discipline effect for majority MPs and in a weaker negative party-discipline effect for opposition MPs. Figure D11 is in line with the model predictions, with a drop for the effect on majority MPs and an increase for the effect on opposition MPs in legislature XVIII.

6.3 Back-of-the-envelope calculations on government stability

To understand the policy relevance of these results, we can perform a back-of-the-envelope calculation on the percentage of confidence votes Italian governments would have lost in absence of the minimum tenure requirement. Based on column (3) in Table 3, I assume that the effect of the policy was a homogeneous increase of 4.1 percentage points in the confidence votes by majority MPs with a tenure below 4.5 years over the entire post-treatment period. Based on column (6) in Table 3, I assume that the policy did not have any effect on opposition MPs. This exercise hinges on the strong assumptions that the effect is homogeneous across majority MPs (under 4.5 years of tenure) and across opposition MPs and that we can extrapolate the treatment effect far from the tenure threshold, while in fact it is identified only locally. Additionally, the actual set of confidence votes may have differed in the absence of the tenure requirement, and MPs might have altered their voting behavior if they perceived a shift in the likelihood of being pivotal.

Since the introduction of the minimum tenure requirement (legislatures XVI-XVIII), there have been 344 confidence votes. Taking these calculations at face value, in eight of them (2.3 percent) the government would have lost a vote of confidence had the tenure requirement for a parliamentary pension been absent. Seven of them occurred during the government 'Berlusconi IV' in legislature XVI and one of them during the government 'Conte II' in legislature XVI. The government 'Conte II' resigned after that vote of confidence, so the tenure requirement would have been inconsequential. But the government 'Berlusconi IV' would have fallen earlier, on December 10, 2010 instead of resigning on November 17, 2011.

During that period, the spread between the ten-year Italian Treasury Bonds and the German Bund rose sharply from 1.6 percent in June 2011 to 5.5 percent in November 2011, starting to decline only when Berlusconi resigned and was replaced by Mario Monti [Manasse et al., 2013]. Italy experienced a severe sovereign debt crisis in the final months of Berlusconi's government, which an earlier defeat in a confidence vote could have potentially mitigated.

This example illustrates that, while parliamentary benefits may have a moderate effect on the likelihood of voting confidence in the government, their influence on government and financial stability can be substantial.

6.4 Party switches

The model presented in Section 3 abstracts away from the possibility that MPs change party during the legislature, but Italian MPs that 'cross the aisle' can continue to hold their seat without having to resign. Switching from a parliamentary group to another is a formal act that is always recorded in the data. I define a party switch as the within-legislature change in affiliation from one parliamentary group to another, including changes due to parliamentary-group merges, splits and

dissolutions into the mixed group. I exclude switches due to cosmetic changes in party names and switches across legislatures.

To test whether the parliamentary pension incentive induced MPs to switch party during the legislature, I created a panel dataset at the daily level for each MP who hold a parliamentary seat in legislatures XIV-XVIII. The main outcome variable $switch_{it}$ is a binary variable equal to 1 if MP i switched parliamentary group in day t and 0 if MP i had a seat in Parliament in day t but did not switch parliamentary group.

There are 3,033 MPs that hold a seat for at least one day in legislatures XIV-XVIII for a total of 7,348,110 days spent in Parliament. Less than a third (994) changed parliamentary group at least once during a legislature for a total of 1,543 switches in the analyzed period. This corresponds to a 0.02 percent probability of an MP switching party in a single day of their parliamentary tenure.

In Figure D16, we see that in legislature XVII and XVIII switches, particularly to majority parties, appear to be more frequent just before 4.5 years since the start of the legislature than after. We do not see a clear pattern in this sense before the introduction of the minimum tenure requirement.

Table 6 and Figure 5 show that the reform significantly increased the probability of switching to another parliamentary group in the year before reaching the tenure requirement than in the year after. The probability to switch a party in a certain day more than doubles from 0.03 to 0.08 percent. This effect appears to be entirely driven by switches towards majority parties, with a null effect on switches towards opposition parties. This result is robust to using a local quadratic RD estimator when using all the fixed effects (Table C25) and to using a range of bandwidths, except for the first three months (Figure D17). Figure D18 shows that the true estimate for switching towards majority party is larger than 95 percent of the placebo estimations.

There is a significant increase in party switches from opposition to majority parties (Table C28), whereas the number of party switches from majority to opposition is insignificant or marginally significant according to the specification (Table C29). This is consistent with the idea that the tenure requirement incentivized MPs to avoid early elections and obtain a parliamentary pension in the first term, by switching party affiliation. The reelection incentive makes more convenient to switch party altogether rather than defying party directives without changing affiliation.

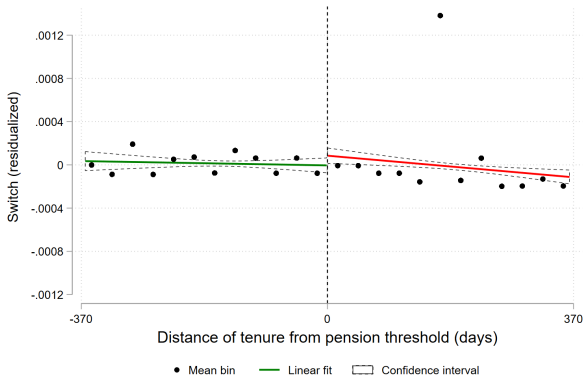
Table 6: Diff-in-disc estimates of minimum tenure requirement on party-switches

	Switch to any party			Switch to majority party			Switch to opposition party		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post*Tenure under	0.0005***	0.0004***	0.0005***	0.0004***	0.0004***	0.0004***	0.0000	0.0000	0.0000
4.5 years	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0000)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.0001	0.0030	0.0033	0.0001	0.0021	0.0023	0.0000	0.0027	0.0031
Average outcome	0.0003	0.0003	0.0003	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
MP FE	NO	YES	YES	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

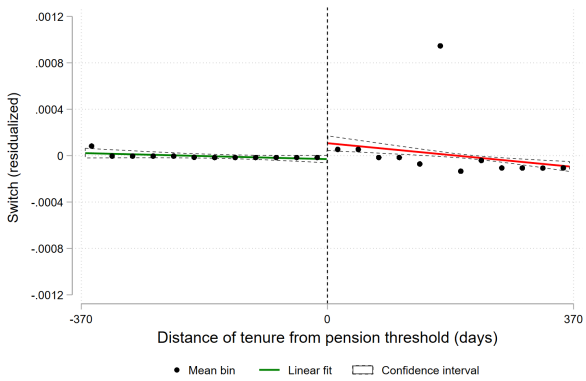
Figure 5: Party switches as a function of tenure, post- and pre-treatment

(a) All switches, post-treatment



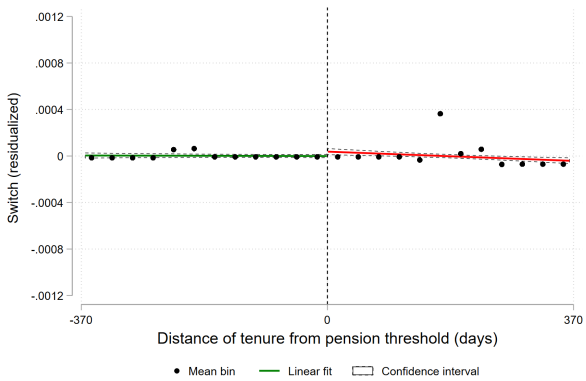
(b) All switches, pre-treatment

(c) Switches to majority, post-treatment



(d) Switches to majority, pre-treatment

(e) Switches to opposition, post-treatment



(f) Switches to opposition, pre-treatment

Notes: These figures show the effect of the parliamentary tenure distance from the 4.5 year-cutoff on the MP's daily probability of switching party affiliation. The circles are the average residualized outcome on either side of the threshold. The solid and dashed lines represent the predicted values and the 95-percent confidence intervals of a local linear regression of the residualized outcome on days of tenure centered at the cutoff. The bandwidth includes observations within one year from the 4.5 year-cutoff.

6.5 Effort

Given that reelections increase the probability of obtaining a parliamentary pension, tenure-dependent benefits can also be regarded as a reelection incentive. An extension of the political agency model that includes effort predicts that tenure-dependent benefits induce MPs to put more effort into signaling their legislative productivity and boost their chances of party nomination and reelection (Appendix Section B). Empirically, we can measure effort by the probability of submitting a legislative bill as first sponsor in each day during a parliamentary term and the probability that the submitted bill is approved by the Parliament [Ferraz and Finan, 2009].

Columns (1)-(3) of Table 7 show that the pension incentive rises the daily probability of sponsoring a bill by 0.2-0.5 percent from an average of 0.54 percent. Although drafting a law is a good proxy for MPs' effort, a more impactful measure in terms of voters' welfare is whether the MP submits bills that are eventually approved. During the five legislatures analyzed, only 2,343 of the 27,726 legislative proposals (8.5 percent) were approved. Controlling for MPs fixed effects as in Columns (5)-(6) of Table 7 and in Figure D19, we find that the tenure requirement increases the daily probability that an MP submits a bill that is eventually approved by 0.05-0.06 percentage points from an average of 0.03 percent. The probability of bill proposals rises for both ordinary and constitutional laws (Tables C33 and C34). The positive estimates are robust to using local quadratic regressions (Table C30) and to clustering standard errors at date-of-vote or first-day-in-parliament level (Tables C31 and C32), once we control for fixed effects. They are also robust to a wide range of bandwidths, except the first six months for bill proposals (Figure D20). Figure D21 shows that the true estimate for proposing a bill is higher than 90 percent of the placebo estimates, whereas the true estimate for proposing a bill that is eventually approved is higher than all placebo estimates.

If voters value legislative effort, the increase in legislative output represents another way through which tenure-dependent benefits can influence welfare, adding complexity to their overall evaluation. While these benefits tighten party control, reducing voters' welfare, they can also enhance government stability and legislative effort, leading to ambiguous normative implications.

Table 7: Diff-in-disc estimates of minimum tenure requirement on law proposed and approved

	Law proposed			Law proposed and approved		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.00280***	0.00467***	0.00514***	0.00019	0.00049***	0.00064***
	(0.00106)	(0.00112)	(0.00137)	(0.00013)	(0.00014)	(0.00015)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.001	0.006	0.008	0.000	0.007	0.007
Average outcome	0.0054	0.0054	0.0054	0.0003	0.0003	0.0003
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

7 Conclusions

This paper employed a difference-in-discontinuities design to test a political agency model of MPs' opportunistic behavior in predicting the impact of the introduction of a minimum tenure requirement to obtain a parliamentary pension in the Italian Parliament. The change in the parliamentary perquisite increases the probability of voting confidence in the government by 3.2 percentage points from an initial average of 70 percent. Confirming model predictions, the tenure requirement rises confidence votes by MPs elected in parties that support the government, whereas it reduces confidence votes by MPs' elected in opposition parties. The policy also induced more frequent switches towards majority parties and encouraged legislative effort, as evidenced by a positive effect on bills proposed and approved.

A caveat on the estimates is that the internal validity of the empirical strategy comes at the price of lower external validity, as is always the case in local econometric designs based on policy discontinuities. Understanding how tenure requirements for parliamentary perquisites can affect the quality of the elected policymakers and their decisions to enter and exit the political career is an interesting avenue for further research.

The main policy insight of this paper is that parliamentary benefits should be carefully designed, as they can influence high-stakes voting decisions with far-reaching consequences for political and financial stability. While monetary incentives may encourage legislators to remain in power and reduce the policy uncertainty associated with government crises, they can also serve as a covert mechanism for parties to exert greater control over legislators. Tenure requirements for parliamentary benefits can be distortionary as they induce to follow party directives against voters' interest. This normative result suggests to explore alternative pension schemes, such as removing tenure requirements for parliamentary pensions, as in the United Kingdom, or abolishing special pension schemes for MPs, as in France. In the end, MPs could simply earn pension rights on the same terms as the rest of citizens they represent.

References

Acconcia, A. and C. Ronza (2022, May). Women's Representation in Politics and Government Stability. CSEF Working Papers 611, Centre for Studies in Economics and Finance (CSEF), University of Naples, Italy. 4

Alesina, A., S. Özler, N. Roubini, and P. Swagel (1996). Political instability and economic growth. *Journal of economic growth (Boston, Mass.) 1*(2), 189–211. 1

Australian Government (2024). Parliamentary Contributory Superannuation Scheme. https://www.finance.gov.au/government/superannuation/parliamentary-contributory-superannuation-scheme. [Online; accessed 06-December-2024]. 11

Baker, S. R., N. Bloom, and S. J. Davis (2016, 07). Measuring Economic Policy Uncertainty*. *The Quarterly Journal of Economics 131*(4), 1593–1636. 1

Barro, R. J. (1973). The control of politicians: An economic model. *Public choice 14*(1), 19–42. 3

Besley, T. (2004). Paying politicians: Theory and evidence. *Journal of the European Economic Association 2*(2-3), 193–215. 4

Besley, T. (2007). *Principled Agents?: The Political Economy of Good Government*. The Lindahl Lectures. Oxford: Oxford University Press. 3, 10, 13

Besley, T. and A. Case (1995). Does electoral accountability affect economic policy choices? evidence from gubernatorial term limits. *The Quarterly journal of economics 110*(3), 769–798. 4

Besley, T. and S. Coate (1998). Sources of inefficiency in a representative democracy: A dynamic analysis. *The American economic review 88*(1), 139–156. 13

Bloom, N. (2014, May). Fluctuations in uncertainty. *Journal of Economic Perspectives 28*(2), 153–76. 1

Bloom, N., S. Bond, and J. Van Reenen (2007). Uncertainty and Investment Dynamics. *The Review of Economic Studies 74*(2), 391–415. 1

Bordo, M. D., J. V. Duca, and C. Koch (2016). Economic policy uncertainty and the credit channel: Aggregate and bank level u.s. evidence over several decades. *Journal of Financial Stability 26*, 90–106. 1

Camara dos deputados (2017). Entenda as regras de aposentadoria para deputados. https://www.camara.leg.br/assessoria-de-imprensa/507263-entenda-as-regras-de-aposentadoria-para-deputados/. [Online; accessed 06-December-2024]. 11

Camara dos deputados (2024). 580 Anggota DPR RI Dilantik, Kerja 5 Tahun Dapat Pensiun Seumur Hidup. https://www.kompas.com/tren/read/2024/10/01/200000165/580-anggota-dpr-ri-dilantik-kerja-5-tahun-dapat-pensiun-seumur-hidup-?page=all. [Online; accessed 06-December-2024]. 11

Camera dei Deputati (1997). Regolamento della Camera. Parte I. Capo III. Dei Gruppi parlamentari. http://leg14.camera.it/cost_reg_funz/663/912/928/listaArticoli.asp. [Online; accessed 29-May-2022]. 18

Camera dei Deputati (2001). XIV legislatura. Deputati. Trattamento economico. https://leg14.camera.it/deputatism/4385/documentotesto.asp. [Online; accessed 29-May-2022]. 9

Camera dei Deputati (2007). XV legislatura. Deputati. Trattamento economico. http://leg15.camera.it/deputatism/4385/documentotesto.asp. [Online; accessed 29-May-2022]. 8, 9

Camera dei Deputati (2013). XVI legislatura. Deputati. Trattamento economico. https://leg16.camera.it/383?conoscerelacamera=4. [Online; accessed 29-May-2022]. 9

Camera dei Deputati (2022a). Parliamentary confidence in the government. https://en.camera.it/4?scheda_informazioni=27. [Online; accessed 29-May-2022]. 6, 9

Camera dei Deputati (2022b). Variazione nella composizione. https://www.camera.it/leg18/1285. [Online; accessed 29-May-2022]. 19

Canen, N., C. Kendall, and F. Trebbi (2020a). Unbundling polarization. *Econometrica 88*(3), 1197–1233. 4

Canen, N. J., C. Kendall, and F. Trebbi (2020b, December). Political parties as drivers of u.s. polarization: 1927-2018. Working Paper 28296, National Bureau of Economic Research. 4

Carozzi, F., D. Cipullo, and L. Repetto (2022). Political fragmentation and government stability: Evidence from local governments in spain. *American economic journal. Applied economics 14*(2), 23–. 4

Caselli, F. and M. Morelli (2004). Bad politicians. *Journal of Public Economics 88*, 759–782. 4

Chiaramonte, A. and R. d'Alimonte (2018, May). The new italian electoral system and its effects on strategic coordination and disproportionality. *Italian Political science 3*(1), 8–18. 9, 10

Congress of the Argentinian nation (1991). RETIREMENTS AND PENSIONS- Law No. 24,018 . https://www.argentina.gob.ar/normativa/nacional/ley-24018-417/actualizacion. [Online; accessed 06-December-2024]. 11

Congressional Research Service (2023). Retirement Benefits for Members of Congress. https://crsreports.congress.gov/product/pdf/RL/RL30631. [Online; accessed 12-October-2023]. 1, 7, 9, 11

De Santis, V. (2020). *Indennità e vitalizi: per uno studio dell'art. 69 della Costituzione.* Studi di Diritto Pubblico. Franco Angeli. 7, 9

Diermeier, D., M. Keane, and A. Merlo (2005). A political economy model of congressional careers. *The American economic review 95*(1), 347–373. 4

Diermeier, D. and A. Merlo (2000). Government turnover in parliamentary democracies. *Journal of economic theory 94*(1), 46–79. 4

Dipartimento per le Riforme Istituzionali (2022). La riduzione del numero dei parlamentari. https://www.riformeistituzionali.gov.it/it/la-riduzione-del-numero-dei-parlamentari. [Online; accessed 29-May-2022]. 9

European Parliament (2021). MEPs' Pension Rights before and after the Members' Statute in 2009. https://www.europarl.europa.eu/thinktank/en/document/IPOL_STU(2021)659763. [Online; accessed 12-October-2023]. 7, 11

Ferejohn, J. (1986). Incumbent performance and electoral control. *Public choice 50*(1/3), 5–25. 3

Ferraz, C. and F. Finan (2009). Motivating politicians: The impacts of monetary incentives on quality and performance. Technical report, National Bureau of Economic Research. 4, 32

Fisman, R., N. A. Harmon, E. Kamenica, and I. Munk (2015). Labor supply of politicians. *Journal of the European Economic Association 13*(5), 871–905. 4

Fondazione Openpolis (2017). Patrimoni trasparenti. Open data. http://patrimoni.openpolis.it/. [Online; accessed 29-May-2022]. 18

Fondazione Rodolfo Debenedetti (2009). Membri del Parlamento Italiano. Dataset su Deputati italiani (1948-2008). https://www.frdb.org/dati/membri-del-parlamento-italiano/. [Online; accessed 29-May-2022]. 18

Frandsen, B. R. (2017). Party bias in union representation elections: Testing for manipulation in the regression discontinuity design when the running variable is discrete. In *Advances in econometrics*, Volume 38, pp. 281–315. Emerald Publishing Limited. 2, 17

Fusani, C. (2007). Stretta su vitalizi e viaggi. Via ai tagli di Camera e Senato. La Repubblica. 8

Gagliarducci, S. and T. Nannicini (2013). Do better paid politicians perform better? disentangling incentives from selection. *Journal of the European Economic Association 11*(2), 369–398. 4

Gagliarducci, S. and M. D. Paserman (2012). Gender interactions within hierarchies: Evidence from the political arena. *The Review of economic studies 79*(3), 1021–1052. 4

Gelman, A. and G. Imbens (2019). Why high-order polynomials should not be used in regression discontinuity designs. *Journal of business economic statistics 37*(3), 447–456. 16

Government of India (2022). The Salary, Allowances and Pension of Members of Parliament Act, 1954. https://www.indiacode.nic.in/bitstream/123456789/1438/1/A1954_30.pdf. [Online; accessed 06-December-2024]. 11

Gratton, G., L. Guiso, C. Michelacci, and M. Morelli (2021). From weber to kafka: Political instability and the overproduction of laws. *American Economic Review 111*(9), 2964–3003. 1

Grembi, V., T. Nannicini, and U. Troiano (2016). Do fiscal rules matter? *American economic journal. Applied economics 8*(3), 1–30. 2, 14, 15, 7

Groseclose, T. and K. Krehbiel (1994). Golden parachutes, rubber checks, and strategic retirements from the 102d house. *American journal of political science 38*(1), 75–99. 4

Hall, R. L. and R. P. Van Houweling (1995). Avarice and ambition in congress: Representatives' decisions to run or retire from the u.s. house. *The American political science review 89*(1), 121–136. 4

House of Commons (2019). Parliamentary Contributory Pension Fund (PCPF) MPs' Pension Scheme (Final Salary Section) Guide for Scheme members. https://www.mypcpfpension.co.uk/cdn/guides/HOP_MP_member_guide-FS_v3.pdf. [Online; accessed 12-October-2023]. 7, 11

Iizuka, T., K. Nishiyama, B. Chen, and K. Eggleston (2021). False alarm? estimating the marginal value of health signals. *Journal of public economics 195*, 104368–. 16

Inter-Parliamentary Union (2016). Pairline database - Grand National Assembly of Turkey . http://archive.ipu.org/parline/reports/2323_D.htm. [Online; accessed 06-December-2024]. 11

ISTAT (2013). Trattamenti pensionistici e beneficiari. https://www.istat.it/it/archivio/87850. [Online; accessed 29-May-2022]. 9

Keane, M. P. and A. Merlo (2010). Money, political ambition, and the career decisions of politicians. *American economic journal. Microeconomics 2*(3), 186–215. 4

Kolesár, M. and C. Rothe (2018). Inference in regression discontinuity designs with a discrete running variable. *The American economic review 108*(8), 2277–2304. 16

Korean National Assembly (2016). Act on promotion of the Parliamentarians' Society of the Republic of Korea (Act No. 13796, Jan. 19, 2016) . https://elaw.klri.re.kr/eng_service/lawView.do?hseq=41481&lang=ENG. [Online; accessed 06-December-2024]. 11

Kotakorpi, K. and P. Poutvaara (2011). Pay for politicians and candidate selection: An empirical analysis. *Journal of public economics 95*(7), 877–885. 4

Lee, D. S. and T. Lemieux (2010). Regression discontinuity designs in economics. *Journal of economic literature 48*(2), 281–355. 21

Mackinson, T. (2021). Politica Senato, il quasi-senatore Boccardi alza il tiro: 'Eletti mai proclamati votano Capo dello Stato. Ricorrerò anche alla Corte Costituzionale'. Il Fatto Quotidiano (23/09/2021) https://www.ilfattoquotidiano.it/2021/09/23/senato-il-quasi-senatore-boccardi-alza-il-tiro-eletti-mai-proclamati-votano-capo-dello-stato-ricorrero-anche-alla-corte-costituzionale/6329231/. [Online; accessed 06-December-2024]. 18

Manasse, P., G. Trigilia, and L. Zavalloni (2013). Professor Monti and the bubble. https://voxeu.org/article/professor-monti-and-bubble. [Online; accessed 29-May-2022]. 28

Mattozzi, A. and A. Merlo (2008). Political careers or career politicians? *Journal of public economics 92*(3), 597–608. 4

Merlo, A. M., V. Galasso, M. Landi, and A. Mattozzi (2010). Part 1. The Labour Market of Italian Politicians. In T. Boeri, A. Merlo, and A. Prat (Eds.), *The Ruling Class: Management and Politics in Modern Italy*. Oxford University Press. 5, 18, 19

Messner, M. and M. K. Polborn (2004). Paying politicians. *Journal of public economics 88*(12), 2423–2445. 4

Office of the Superintendent of Financial Institutions Canada (2019). Actuarial Report on the Pension Plan for the Members of Parliament. https://www.osfi-bsif.gc.ca/Eng/oca-bac/ar-ra/mp-plm/Pages/MP19.aspx. [Online; accessed 12-October-2023]. 7, 11

Okamoto, T. (2012). A tale of two terminations: The cases of the japanese parliamentary pension systems. *Journal of Public Policy Studies 12*, 6–16. 11

Osservatorio sui Conti Pubblici Italiani (2021). Il sistema pensionistico dei parlamentari: possibili implicazioni per la durata della legislatura. https://osservatoriocpi.unicatt.it/ocpi-pubblicazioni-il-sistema-pensionistico-dei-parlamentari-possibili-implicazioni-per-la-durata-della. [Online; accessed 29-May-2022]. 8, 9

Persson, T. and G. Tabellini (2000). *Political economics : explaining economic policy*. Zeuthen lecture book series. Cambridge, Mass.: MIT Press. 1

Preece, D. C., D. J. Mullineaux, G. Filbeck, and S. A. Dennis (2004). Agency theory and the house bank affair. *Review of financial economics 13*(3), 259–267. 4

Republic of South Africa (1984). Members of Parliament and Political Office-bearers Pension Scheme Act 1984. https://www.gov.za/sites/default/files/gcis_document/201503/act-112-1984.pdf. [Online; accessed 12-October-2023]. 11

Rizzo, S. (2018). Vitalizi d'oro: il vero privilegio sono le doppie pensioni. La Repubblica. 7

Rubabshi-Shitrit, A. and S. Hasson (2022). The effect of the constructive vote of no-confidence on government termination and government durability. *West European Politics 45*(3), 576–590. 6

Senato (2017). Il Regolamento del Senato.Capo IV. Dei Gruppi parlamentari. https://www.senato.it/istituzione/il-regolamento-del-senato/capo-iv/articolo-14-1. [Online; accessed 29-May-2022]. 18

Senato (2022a). La Costituzione. Articolo 94. https://www.senato.it/istituzione/la-costituzione/parte-ii/titolo-iii/sezione-i/articolo-94. [Online; accessed 29-May-2022]. 5, 17

Senato (2022b). XVIII legislatura. Senatori. Trattamento economico. https://www.senato.it/leg18/1075?voce_sommario=61. [Online; accessed 29-May-2022]. 8

Senato (2024). TESEO. https://www.senato.it/3235?testo_generico=745. [Online; accessed 29-December-2024]. 18

Sesto, M. (2021). Pensioni degli onorevoli, perché il 24 settembre 2022 è il D day della legislatura. Il Sole 24 ore. 8

World Bank (2006). Technical Note on Industrial Note on Industrial Organization and Competition: Pension System in Mexico. https://documents1.worldbank.org/curated/en/279711468123256748/pdf/Mexico-Technical-note-on-industrial-organization-and-competition-pension-system-in-Mexico.pdf. [Online; accessed 06-December-2024]. 11

World Bank (2023). Life expectancy at birth, total (years) - Italy. https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=IT. [Online; accessed 13-Sep-2023]. 21

Appendix A Model proofs

This section provides the proofs of Propositions 1 and 2 of Section 3. Suppose there is no minimum tenure requirement and MPs receive a pension in period 3 independently of the time they spend in Parliament. The expected utility for an MP elected in period 1 in a majority party is:

$$\begin{aligned} V_M^{Pre}(c_{M1}) =& u(\mathcal{I} + \alpha[s_1 c_{M1} + (1-s_1)(1-c_{M1})]\Omega) + \\ &+ \beta\{\pi_M(c_{M1})u(\mathcal{I}+\alpha\Omega) + [1-\pi_M(c_{M1})]u(w)\} + \beta^2 u(\rho + \xi w) \end{aligned} \tag{6}$$

If the government is doing well ($s_1 = 1$), the newly-elected majority MP always votes confidence in the government as:

$$u(\mathcal{I}+\alpha\Omega) + \beta\Delta\pi_M[u(\mathcal{I}+\alpha\Omega) - u(w)] \geq u(\mathcal{I}) \tag{7}$$

given that $\Delta\pi_M \geq 0$.

If the government is not doing well ($s_1 = 0$), the newly-elected majority MP would vote confidence and go against voters' interest if

$$u(\mathcal{I}) + \beta\Delta\pi_M[u(\mathcal{I}+\alpha\Omega) - u(w)] \geq u(\mathcal{I}+\alpha\Omega) \tag{8}$$

Intuitively, MPs follow party directives and vote against voters' interest only if the benefit of party loyalty in terms of reelection probabilities exceeds the utility they get from altruistically benefiting voters in the first term.

Suppose now that a minimum tenure requirement is imposed. The utility function for an MP elected in period 1 in a majority party is:

$$\begin{aligned} V_M^{Post}(c_{M1}) =& u(\mathcal{I} + \alpha[s_1 c_{M1} + (1-s_1)(1-c_{M1})]\Omega) + \\ &+ \beta\{\pi_M(c_{M1})u(\mathcal{I}+\alpha\Omega) + [1-\pi_M(c_{M1})]u(w)\} + \beta^2 u(w) \\ &+ \beta^2\{\sigma(c_{M1}) + [1-\sigma(c_{M1})]\pi_M(c_{M1})\}[u(\rho+\xi w) - u(w)] \end{aligned} \tag{9}$$

Again, if the government is doing well ($s_1 = 1$), the newly-elected majority MP always votes confidence in the government as:

$$\begin{aligned} &u(\mathcal{I}+\alpha\Omega) + \beta\Delta\pi_M[u(\mathcal{I}+\alpha\Omega) - u(w)] \\ &+ \beta^2\{\Delta\sigma[1-\pi_j(0)] + \Delta\pi_j[1-\sigma(1)]\}[u(\rho+\xi w) - u(\xi w)] \geq u(\mathcal{I}) \end{aligned} \tag{10}$$

If the government is not doing well ($s_1 = 0$), the newly-elected majority MP would vote

confidence and go against the voters' interest if

$$\begin{aligned} &u(\mathcal{I}) + \beta\Delta\pi_M[u(\mathcal{I}+\alpha\Omega) - u(w)] \\ &+ \beta^2\{\Delta\sigma[1-\pi_j(0)] + \Delta\pi_j[1-\sigma(1)]\}[u(\rho+\xi w) - u(\xi w)] \geq u(\mathcal{I}+\alpha\Omega) \end{aligned} \tag{11}$$

Comparing inequalities (8) and (11), the minimum tenure requirement for the parliamentary pension increases the utility of newly-elected majority MPs for voting confidence in the government against voters' interest by $\beta^2\{\Delta\sigma[1-\pi_j(0)] + \Delta\pi_j[1-\sigma(1)]\}[u(\rho+\xi w) - u(\xi w)] > 0$.

Note that the minimum tenure requirement is a distortionary incentive for majority MPs because it induces them to vote in favor of the government, when it would be in the voters' interest to vote against.

In absence of a minimum tenure requirement, the expected utility for an MP elected in period 1 in an opposition party is:

$$\begin{aligned} V_m^{Pre}(c_{m1}) =& u(\mathcal{I} + \alpha[s_1 c_{m1} + (1-s_1)(1-c_{m1})]\Omega) + \\ &+ \beta\{\pi_m(c_{m1})u(\mathcal{I}+\alpha\Omega) + [1-\pi_m(c_{m1})]u(w)\} + \beta^2 u(\rho+\xi w) \end{aligned} \tag{12}$$

If the government is not doing well ($s_1 = 0$), the newly-elected opposition MP never votes confidence in the government as:

$$u(\mathcal{I}) \leq u(\mathcal{I}+\alpha\Omega) - \beta\Delta\pi_m[u(\mathcal{I}+\alpha\Omega) - u(w)] \tag{13}$$

given that $\Delta\pi_m \leq 0$.

If the government is doing well ($s_1 = 1$), the newly-elected opposition MP would vote confidence in the voters' interest if

$$u(\mathcal{I}+\alpha\Omega) \geq u(\mathcal{I}) - \beta\Delta\pi_m[u(\mathcal{I}+\alpha\Omega) - u(w)] \tag{14}$$

Intuitively, opposition MPs vote according to voters' interest if the altruistic utility of benefiting voters in the first term is higher than their personal gain in terms of reelection probabilities when they follow party directives.

Suppose now that a minimum tenure requirement is imposed. For opposition MPs the pivotal and party-discipline effects have opposite signs. On one hand, opposition MPs would like to vote confidence because if the government wins they would obtain the pension. On the other hand, opposition MPs are afraid to vote confidence because if the government loses, they would be less likely to be reelected and to secure the pension in a second term.

The utility function for an MP elected in period 1 in an opposition party in presence of a minimum tenure requirement is

$$
\begin{aligned}
V_m^{Post}(c_{m1}) =& u(\mathcal{I} + \alpha[s_1 c_{m1} + (1 - s_1)(1 - c_{m1})]\Omega) + \\
&+ \beta\{\pi_m(c_{m1})u(\mathcal{I} + \alpha\Omega) + [1 - \pi_m(c_{m1})]u(w)\} + \beta^2 u(w) \\
&+ \beta^2\{\sigma(c_{m1}) + [1 - \sigma(c_{m1})]\pi_m(c_{m1})\}[u(\rho + \xi w) - u(w)]
\end{aligned} \tag{15}
$$

With the minimum tenure requirement, the newly-elected opposition MP might vote confidence even if the government is not doing well ($s_1 = 0$). This occurs when

$$
\begin{aligned}
&u(\mathcal{I}) + \beta\Delta\pi_M[u(\mathcal{I} + \alpha\Omega) - u(w)] \\
&+ \beta^2\{\Delta\sigma[1 - \pi_j(0)] + \Delta\pi_j[1 - \sigma(1)]\}[u(\rho + \xi w) - u(\xi w)] \geq u(\mathcal{I} + \alpha\Omega)
\end{aligned} \tag{16}
$$

A necessary condition for this to occur is that the pivotal effect dominates the party-discipline effect: $\Delta\sigma[1 - \pi_j(0)] > \Delta\pi_j[1 - \sigma(1)]$. If the party-discipline effect dominates, newly-elected opposition MPs never vote confidence in a bad government, with or without a tenure requirement.

If the government is doing well ($s_1 = 1$), the newly-elected opposition MP would vote confidence in the voters' interest if

$$
\begin{aligned}
&u(\mathcal{I} + \alpha\Omega) + \beta\Delta\pi_M[u(\mathcal{I} + \alpha\Omega) - u(w)] \\
&+ \beta^2\{\Delta\sigma[1 - \pi_j(0)] + \Delta\pi_j[1 - \sigma(1)]\}[u(\rho + \xi w) - u(\xi w)] \geq u(\mathcal{I})
\end{aligned} \tag{17}
$$

Comparing inequalities (14) and (17), the minimum tenure requirement for the parliamentary pension has an ambiguous effect on the behavior of newly-elected opposition MPs. If the incentive to increase the chances of a government victory to immediately obtain the pension right (*pivotal effect*) is lower than the fear of losing the possibility of being reelected and obtain the pension later in case of government defeat (*party-discipline effect*) ($\Delta\sigma[1 - \pi_j(0)] \leq \Delta\pi_j[1 - \sigma(1)]$), then the minimum tenure requirement incentives newly-elected opposition MPs to vote *against* the confidence.

Note that if the party-discipline effect dominates the pivotal effect (i.e. the tenure requirement reduces the number of opposition MPs voting confidence in the government), the tenure requirement incentive is distortionary. It incentivizes opposition MPs to vote against the government, even though it would be in the voters' interest to vote in favor.

A.1 Normative implications.

Let $Pr(c_{j1}|s_1)$ denote the probability an MP elected in party $j \in \{m, M\}$ votes c_{j1} conditional on government performance being s_1 and let $Pr(s_1)$ denote the probability that government perfor-

mance is s_1. The expected social surplus generated by MP elected in party $j \in \{m, M\}$ is:

$$\begin{aligned} E(W_j) = \Omega\{\beta\pi_j(0) + Pr(s_1 = 0) + Pr(s_1 = 1)Pr(c_{j1} = 1|s_1 = 1)[1 + \beta\Delta\pi_j] \\ - Pr(s_1 = 0)Pr(c_{j1} = 1|s_1 = 0)[1 - \beta\Delta\pi_j]\} \end{aligned} \tag{18}$$

Intuitively, the expected social surplus increases in the probability of voting confidence in a good government and decreases in the probability of voting confidence in a bad government.

The previous subsection showed that majority MPs always vote confidence when the government performs well, independently of the tenure requirement: $Pr(c_{M1} = 1|s_1 = 1) = 1$. Since the tenure requirement induces majority MPs to vote confidence, it increases $Pr(c_{M1} = 1|s_1 = 0)$. Therefore, the tenure requirement lowers the expected social surplus generated by majority MPs. Without the tenure requirement, opposition MPs always vote no confidence when the government is not doing well: $Pr(c_{m1} = 1|s_1 = 0) = 0$. The tenure requirement induces opposition MPs to vote no confidence when the party-discipline effect dominates: $Pr(c_{m1} = 1|s_1 = 1)$ decreases. If the pivotal and party-discipline effect offset each other, there is no change in opposition MPs behavior. Therefore, the tenure requirement lowers the overall expected social surplus if the party-discipline effect dominates or at least offsets the pivotal effect.

Appendix B Model extension I. When government stability is positively valued

Suppose the model is the same as in Section 3, but now voters attribute a positive value to government stability and receive utility ψ if the MP votes in favor of the government. Assume that the preference for good governance is stronger than the preference for government stability, that is $\Omega \geq \psi$.

MPs elected in a party $j \in \{m, M\}$ in period 1 choose their confidence vote c_{j1} under state of the world s_1 to maximize expected lifetime utility:

$$\begin{aligned} \max_{c_{j1}} V_j(c_{j1}) = u(\mathcal{I} + \alpha\{[s_1c_{j1} + (1 - s_1)(1 - c_{j1})]\Omega + \psi\}) \\ + \beta\{\pi_j(c_{j1})Eu(\mathcal{I} + \alpha[\Omega + s_2\psi]) + [1 - \pi_j(c_{j1})]u(w)\} \\ + \beta^2\{\gamma_j(c_{j1})u(\rho + \xi w) + [1 - \gamma_j(c_{j1})]u(\xi w)\} \end{aligned} \tag{19}$$

where $Eu(\cdot)$ is expected utility over the state of the world in the second period s_2.

The expected social surplus generated by MP elected in party $j \in \{m, M\}$ is:

$$\begin{aligned} E(W_j) = & Pr(s_1 = 0)\Omega + \beta\pi_j(0)[\Omega + Pr(s_2 = 1)\psi] \\ & + Pr(s_1 = 1)Pr(c_{j1} = 1|s_1 = 1)\{\Omega + \beta\Delta\pi_j[\Omega + Pr(s_2 = 1)\psi]\} \\ & - Pr(s_1 = 0)Pr(c_{j1} = 1|s_1 = 0)\{\Omega - \psi - \beta\Delta\pi_j[\Omega + Pr(s_2 = 1)\psi]\} \end{aligned} \tag{20}$$

The normative implications of Section 3 remain unchanged if the preference for good governance is sufficiently stronger than the preference for government stability. Formally, the additional required assumption is that $\Omega > \frac{\psi[1+\Delta\pi_j Pr(s_2=1)]}{1-\Delta\pi_j}$.

Again, majority MPs always vote confidence when the government performs well, independently of the tenure requirement: $Pr(c_{M1} = 1|s_1 = 1) = 1$. Since the tenure requirement induces majority MPs to vote confidence: it increases $Pr(c_{M1} = 1|s_1 = 0)$. Therefore, if $\Omega > \frac{\psi[1+\Delta\pi_j Pr(s_2=1)]}{1-\Delta\pi_j}$, the tenure requirement lowers the expected social surplus generated by majority MPs.

Without the tenure requirement, opposition MPs always vote no confidence when the government is not doing well: $Pr(c_{m1} = 1|s_1 = 0) = 0$. The tenure requirement induces opposition MPs to vote no confidence when the party-discipline effect dominates: $Pr(c_{m1} = 1|s_1 = 1)$ decreases. Therefore, the tenure requirement also lowers the expected social surplus produced by opposition MPs if the party-discipline effect dominates.

To conclude, when government stability is positively valued by voters, the minimum tenure requirement decreases ex-ante social surplus if voters have a sufficiently strong preference for good governments relative to stable governments.

Appendix C Model extension II. When effort increases the probability of reelection

Assume now that after voting in the confidence vote, MPs exercise legislative effort e_{jt}. The probability of reelection $\pi_j(c_{j1}, e_{j1})$ is an increasing and concave function of effort in the first period e_{j1}, but effort costs $\kappa(e_{j1})$ where $\kappa(\cdot)$ is a convex and increasing function.[28]

Given confidence vote c_{j1}, an MP of party j chooses effort e_{j1} to maximize expected lifetime utility:

[28] Given that the MP retires in period 3, in period 2 the MP chooses to exercise zero effort.

$$\begin{aligned}\max_{e_{j1}} V_j(e_{j1}) =& u(\mathcal{I} + \alpha[s_1 c_{j1} + (1 - s_1)(1 - c_{j1})]\Omega - \kappa(e_{j1})) + \\ & \beta\{\pi_j(c_{j1}, e_{j1})u(\mathcal{I} + \alpha\Omega) + [1 - \pi_j(c_{j1}, e_{j1})]u(w)\} + \\ & \beta^2\{\gamma_j(c_{j1}, e_{j1})u(\rho + \xi w) + [1 - \gamma_j(c_{j1}, e_{j1})]u(\xi w)\}\end{aligned} \tag{21}$$

Before the reform the probability of obtaining the parliamentary pension is $\gamma_j^{Pre}(c_{j1}, e_{j1}) = 1$. After the reform, the probability of obtaining the parliamentary pension becomes $\gamma_j^{Post}(c_{j1}, e_{j1}) = \sigma(c_{j1}) + [1 - \sigma(c_{j1})]\pi_j(c_{j1}, e_{j1})$ which is now a function of effort through the reelection incentive.

The first-order condition with respect to effort can be rearranged as:

$$\begin{aligned}&\frac{u'(\mathcal{I} + \alpha[s_1 c_{j1} + (1 - s_1)(1 - c_{j1})]\Omega - \kappa(e_{j1}))\frac{\partial \kappa(e_{j1})}{\partial e_{j1}}}{\frac{\partial \pi_j(c_{j1}, e_{j1})}{\partial e_{j1}}} = \\ &\beta\{u(\mathcal{I} + \alpha\Omega) - u(w) + \beta[u(\rho + \xi w) - u(\xi w)][1 - \sigma(c_{j1})] \cdot \textit{Post}_t\}\end{aligned} \tag{22}$$

where *Post* is an indicator function equal to 1 if after the reform and 0 otherwise. The numerator of the left-hand side is positive and increasing in effort as the marginal utility is positive and decreasing, effort enters negatively the marginal utility, and the cost function is convex. The denominator of the left-hand side is positive and decreasing in effort as the probability of reelection is an increasing, concave function of effort. Accordingly, the left-hand side is an increasing function of effort. Given that $\beta[u(\rho + \xi w) - u(\xi w)][1 - \sigma_j(c_{j1})] > 0$, the right-hand side is higher after the reform (when $Post_t = 1$) relative to before. Therefore, *for a given confidence vote choice* c_{j1}, the introduction of the tenure requirement unambiguously increases the MP's effort. This effect should be stronger the higher is the parliamentary pension, the poorer the MP, and the lower the probability of government survival in the first term. However, Section 3 shows that the parliamentary reform affects the confidence vote decision c_{j1} as well, which in turn affects the probability of reelection $\pi_j(c_{j1}, e_{j1})$ and the marginal utility in the first period. The interaction between the two effects makes the impact of the reform on effort ambiguous. If the tenure-requirement induces a change in the confidence vote that makes the probability of reelection independent of the level of effort ($\frac{\partial \pi_j(c_{j1}, e_{j1})}{\partial e_{j1}} \to 0$), the MPs will not exercise any legislative effort and the impact on effort can potentially be negative.

Appendix D Identification proofs

Define D_{it} as the first treatment for MP i at time t, equal to one if the severance pay is lower and zero otherwise; R_{it} as the second treatment, equal to one if the MP does not obtain the parliamentary pension and zero otherwise; A_t as the third treatment, equal to one since 2008 when the pension amount was lower for all MPs and zero before 2008 when the pension amount was higher for all MPs.[29] The additional confounding treatment A_t differentiates this setting from the one in Grembi et al. [2016].

MPs with parliamentary tenure Z_{it} at or below the threshold Z_c (4.5 years) have a lower severance pay, while the pension eligibility requirement is introduced at time t_0 (year 2008) for MPs with tenure at or below the same threshold. Finally, the monthly pension amount decreased from 25 to 20 percent of the final gross parliamentary monthly wage at time t_0 on both sides of the threshold. The assignment mechanism for the three treatments can be formalized as below:

$$D_{it} = \begin{cases} 1 & \text{if } Z_{it} \leq Z_c \\ 0 & \text{otherwise,} \end{cases}$$

$$R_{it} = \begin{cases} 1 & \text{if } Z_{it} \leq Z_c \text{ and } t \geq t_0 \\ 0 & \text{otherwise,} \end{cases}$$

$$A_t = \begin{cases} 1 & \text{if } t \geq t_0 \\ 0 & \text{otherwise.} \end{cases}$$

Define $Y_{it}(d, r, a)$ as the potential policy outcomes if $D_{it} = d$, $R_{it} = r$, and $A_t = a$ with $d, r, a \in \{0, 1\}$. The observed outcome is equal to

$$\begin{aligned} Y_{it} =& D_{it}R_{it}A_tY_{it}(1,1,1) + D_{it}R_{it}(1-A_t)Y_{it}(1,1,0) + D_{it}(1-R_{it})A_tY_{it}(1,0,1) + \\ & D_{it}(1-R_{it})(1-A_t)Y_{it}(1,0,0) + (1-D_{it})R_{it}A_tY_{it}(0,1,1) + (1-D_{it})R_{it}(1-A_t)Y_{it}(0,1,0) \\ & + (1-D_{it})(1-R_{it})A_tY_{it}(0,0,1) + (1-D_{it})(1-R_{it})(1-A_t)Y_{it}(0,0,0) \end{aligned}$$

The objective is to identify the causal effect of R_{it} on Y_{it}. For ease of notation, let $W^- \equiv \lim_{z \to Z_c^-} E[W_{it}|Z_{it} = z, t \geq t_0]$ and $W^+ \equiv \lim_{z \to Z_c^+} E[W_{it}|Z_{it} = z, t \geq t_0]$ with $W \in \{Y, Y(1,1,1), Y(1,1,0), Y(1,0,1), Y(0,1,1), Y(1,0,0), Y(0,1,0), Y(0,0,1), Y(0,0,0)\}$.

In this setting standard continuity conditions are not sufficient for identification because of the confounding treatment D_{it}. Even assuming that all potential outcomes $E[Y_{it}(d, r, a)|Z_{it} = z, t \geq$

[29] A_t accounts for any other temporal shock that is common across MPs, such as changes in the electoral system.

$t_0]$ with $w, r, a \in \{0, 1\}$ are continuous in z at Z_c, we have that the cross-sectional RD estimator after t_0, $\hat{\tau}_{RD} \equiv Y^- - Y^+$, does not identify an average treatment effect of R_{it} at the threshold:

$$\begin{aligned}\hat{\tau}_{RD} \equiv Y^- - Y^+ &= Y(1,1,1)^- - Y(0,0,1)^+ \\ &= [Y(1,1,1)^- - Y(1,0,1)^-] - [Y(1,0,1)^+ - Y(0,0,1)^+] \\ &= E[Y(1,1,1)_{it} - Y(1,0,1)_{it} | Z_{it} = Z_c, t \geq t_0] - [Y(1,0,1)_{it} - Y(0,0,1)_{it} | Z_{it} = Z_c, t \geq t_0]\end{aligned}$$

where the first term in the right-hand-side captures one of the potential causal effects of interest (namely, the average treatment effect of establishing a minimum tenure requirement for a parliamentary pension for MPs in 2008 with a severance pay equal to 320 percent of the final wage and a monthly parliamentary pension that is 20 percent of the final wage) and the second term captures the 'bias' (namely, the average treatment effect of increasing the severance pay from 320 to 400 percent of the final wage for MPs with a monthly parliamentary pension that is 20 percent of the final wage). Accordingly, the cross-sectional RD estimate is biased because the effects of the two treatments D and R cannot be disentangled from each other.

Information on the pre-treatment period ($t < t_0$) allows to remove the selection bias under local assumptions. Similarly to the post-treatment period, for the pre-treatment period let $\tilde{W}^- \equiv \lim_{z \to Z_c^-} E[\tilde{W}_{it} | Z_{it} = z, t < t_0]$ and $\tilde{W}^+ \equiv \lim_{z \to Z_c^+} E[\tilde{W}_{it} | Z_{it} = z, t < t_0]$ with $\tilde{W} \in \{Y, Y(1,1,1), Y(1,1,0), Y(1,0,1), Y(0,1,1), Y(1,0,0), Y(0,1,0), Y(0,0,1), Y(0,0,0)\}$.

To identify the causal effect of eliminating the parliamentary pension under a certain parliamentary tenure, I exploit both the discontinuous variation at Z_c and the time variation after t_0 using a 'difference-in-discontinuities' estimator $\hat{\tau}_{DD}$:

$$\hat{\tau}_{DD} \equiv (Y^- - Y^+) - (\tilde{Y}^- - \tilde{Y}^+) \tag{23}$$

The identification assumptions for the 'difference-in-discontinuities' design are:

Assumption 1 *All potential outcomes $E[Y_{it}(d, r, a) | Z_{it} = z, t \geq t_0]$ and $E[Y_{it}(d, r, a) | Z_{it} = z, t < t_0]$ with $d, r, a \in \{0, 1\}$ are continuous in z at Z_c*

Assumption 2 *The effect of the confounding policy D_{it} at Z_c in the case of no treatment ($R_{it} = 0$) is constant over time and does not depend on A_t: $Y(1,0,1) - Y(0,0,1) = \tilde{Y}(1,0,0) - \tilde{Y}(0,0,0)$.*

Assumption 2 requires that the effect of the severance pay discontinuity D_{it} at the threshold Z_c does not vary with time nor with the pension amount. This is similar to the standard identifying assumption for difference-in-differences: it requires observations just below and just above Z_c to be on a local parallel trend in absence of the policy of interest R_{it}.

Under these two assumptions, the difference-in-discontinuities estimator identifies the local causal effect of eliminating the parliamentary pension in a neighborhood of the tenure threshold ($Z_{it} = Z_c$), for MPs with a severance pay that is 320 percent of the final wage ($D_{it} = 1$) and with a monthly parliamentary pension equal to 20 percent of the final wage ($A_t = 1$):

$$\begin{aligned}
\hat{\tau}_{DD} &\equiv (Y^- - Y^+) - (\tilde{Y}^- - \tilde{Y}^+) \\
&= [Y(1,1,1)^- - Y(0,0,1)^+] - [\tilde{Y}(1,0,0)^- - \tilde{Y}(0,0,0)^+] \\
&= [Y(1,1,1) - Y(0,0,1)] - [\tilde{Y}(1,0,0) - \tilde{Y}(0,0,0)] \\
&= [Y(1,1,1) - Y(1,0,1)] \\
&= E[Y(1,1,1)_{it} - Y(1,0,1)_{it} | Z_{it} = Z_c]
\end{aligned}$$

Proposition 1 *Under Assumption 1 and Assumption 2, the estimator $\hat{\tau_{DD}}$ identifies the average treatment effect at Z_c: $E[Y_{it}(1,1,1) - Y_{it}(1,0,1) | Z_{it} = Z_c]$.*

This result allows to identify a causal effect of the treatment of interest under plausible conditions. Yet, the estimand only refers to MPs with a severance pay equal to 320 percent of the final parliamentary wage. To identify a more general estimand, we can introduce an additional assumption.

Assumption 3 *The effect of the treatment R_{it} at Z_c does not depend on the confounding policy D_{it}: $Y(1,1,1) - Y(1,0,1) = Y(0,1,1) - Y(0,0,1) \equiv E[Y_{it}(1) - Y_{it}(0) | Z = Z_c, A_t = 1]$*

Assumption 3 states that there must be no interaction between the effect of the severance pay policy and the effect of the parliamentary pension policy.

Appendix E Voting against party directives

In this Section, I show that voting against party directives (i.e. voting confidence when elected in an opposition party and voting no confidence when elected in a majority party) is negatively correlated with the probability of being reelected. I restrict to the sample of MPs in their first term and regress:

$$reelected_i = \alpha + \boldsymbol{\beta}\mathbf{x}_i + \delta Deviate_{it} + \eta_{pg} + \varepsilon_{ipgt} \tag{24}$$

where $reelected_i$ is an indicator variable equal to 1 if the MP is ever reelected for a second term in Parliament and 0 otherwise, and $Deviate_{it}$ is an indicator variable equal to 1 if the first-term MP voted against party directives at time t and 0 otherwise. η_{pg} are party-by-government fixed effects and $\mathbf{x}_i$ is a vector of individual characteristics: gender, high school diploma, university degree,

born in South, born in Center, foreign, pre-parliament income. I repeat this regression with and without controls and fixed effects. As we can see in Table C1, first-term MPs who vote against their party directives are 10-25 percent less likely to be reelected, depending on the specification.[30] This significantly negative correlation corroborates the corresponding assumption of the model presented in Section 3.

Table C1: Correlation between voting against party directives and being re-elected in parliament.

	(1)	(2)	(3)
Vote against party directives	-0.103***	-0.135***	-0.054
	(0.028)	(0.039)	(0.034)
N	159,062	93,907	93,907
R-squared	0.00	0.02	0.32
Average outcome	0.65	0.65	0.65
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to confidence votes by MPs in the first term. Controls are: gender, age when entering parliament, high school diploma, university degree, born in South, North, foreign, pre-parliament income, being employed in the private sector, in the public sector, being self-employed, being out of the labor force prior to entering Parliament. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

[30] Results do not qualitatively change if I use Probit or Logit models instead of a linear probability model

Appendix F Additional Tables

Table C2: Minimum tenure requirements for a parliamentary pension by country in 2009

Country	Pension scheme	Minimum employment in any job	Minimum service as MP or federal employee	Minimum service as MP	Retirement age	Parliamentary term length	Confidence votes
Argentina	Specific			4	60	4 (L), 6 (U)	No
Australia	Specific			8	55	3 (L), 6 (U)	Yes
Brazil	General	35			60	4 (L), 8 (U)	No
Canada	Specific		6		55	5	Yes
India	Specific			0	60	5	Yes
Indonesia	Specific			5	58	5	No
Japan	Specific			10	65	4 (L), 6 (U)	Yes
Mexico	General	25			65	3 (L), 6 (U)	No
Russia	Specific			1	55-60	5	Yes
South Africa	Specific			7.5	60	5	Yes
South Korea	Specific			1	65	4	Yes
Turkey	Specific			2	58-60	5	Yes
United Kingdom	Specific			0	65	5	Yes
United States	Specific		5		62	2 (L), 6 (U)	No
EU	Specific			1	63	5	Yes
Austria	General	15			60-65	5	Yes
Belgium	Specific			0	55	5	Yes
Bulgaria	General	34			60-63	4	Yes
Cyprus	Specific			4	60	5	Yes
Czech Republic	General	15			56-62	4	Yes
Denmark	Specific			1	60	4	Yes
Estonia	General	15			60.5-63	4	Yes
Finland	Specific			0	65	4	Yes
France	General	40			60	5 (L), 6 (U)	Yes
Germany	Specific			1	67	4	Yes
Greece	Specific			5	65	4	Yes
Hungary	General	15			62	4	Yes
Ireland	Specific			3	65	5	Yes
Italy	Specific			4.5	65	5	Yes
Latvia	General	10			62	4	Yes
Lithuania	General	15			60-62.5	4	Yes
Luxembourg	Specific			10	65	5	Yes
Malta	Specific			5.5	65	5	Yes
Netherlands	Specific		5		65	4	Yes
Poland	General	20			60-65	4	Yes
Portugal	General	15			65	4	Yes
Romania	General	11			58-63	4	Yes
Slovakia	General	15			56-62	4	Yes
Slovenia	General	15			58	4	Yes
Spain	General	15			65	4	Yes
Sweden	Specific			6	65	4	Yes

Notes: The list include all countries with a democratically-elected Parliament in the G20 and in the European Union in 2009. with a democratically-elected Parliament *Pension scheme* is 'general' if MPs earn pension rights on the same terms as the rest of the labour market, and 'specific' if MPs earn pension rights in a special scheme for high-level civil servants or MPs only. *Minimum employment in any job* is the minimum number of years that MPs have to be employed across all occupations in their lifetime to obtain a pension in their general pension scheme. *Minimum service as MP or federal employee* refers to the minimum length of actual service as MP or as federal-public employee to obtain a parliamentary pension. *Minimum service as MP* refers to the minimum length of actual service as MP to obtain a parliamentary pension. *Parliamentary term length* is the standard duration of a parliamentary term in years in the lower house (L) and the upper house (U). The sources of this data are Republic of South Africa [1984], Congress of the Argentinian nation [1991], World Bank [2006], Okamoto [2012], Korean National Assembly [2016], Inter-Parliamentary Union [2016], Camara dos deputados [2017], House of Commons [2019], the Office of the Superintendent of Financial Institutions Canada [2019], the European Parliament [2021], the Government of India [2022], the Australian Government [2024], the Congressional Research Service [2023], and Camara dos deputados [2024].

Table C3: Diff-in-disc estimates of minimum tenure requirement on pre-determined variables, all MPs.

	(1) Female	(2) Age	(3) High school	(4) Degree	(5) South	(6) Foreign	(7) Income (€)	(8) Private sector	(9) Self employed	(10) Out of labor force
Post*Tenure under	-0.023	-0.355	-0.002	0.013	0.023	0.003	-6913.729	0.020	0.016	-0.001
4.5 years	(0.014)	(0.336)	(0.017)	(0.018)	(0.018)	(0.005)	(6160.412)	(0.022)	(0.012)	(0.006)
N	33,038	33,038	21,784	21,784	33,038	33,038	32,953	20,421	20,421	20,421
R-squared	0.03	0.09	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Average outcome	0.28	47.46	0.27	0.71	0.49	0.02	91532.43	0.54	0.11	0.02
MP FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Party-by-gov. FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Notes: The regression sample is restricted to votes of confidence in a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. In all regressions we control for the house of parliament of the MP. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Age indicates the age when entering parliament for the first time (in years). High school and Degree refer to the highest education level achieved. South and Foreign refer to the birthplace in Southern Italy and in a foreign country, respectively. Income refers to the private income (in 2005 Euros) in the year prior to entering Parliament and is available for MPs that enter Parliament later than 1981. Private sector, Self employed and Out of the labor force refer to the MP occupation prior to entering Parliament. Data on education levels and occupation are not available for Senators. Data on occupation is missing for some Deputies.

Table C4: Diff-in-disc estimates of minimum tenure requirement on types of confidence votes, all MPs.

	Confirmation (1)	Motion of no confidence (2)	Government and public administration (3)	Foreign affairs (4)	Government budget (5)	Economy and finance (6)	Development, and environment (7)	Health (8)	Education (9)	Justice and law enforcement (10)
Post*Tenure under	-0.017	-0.038	-0.297	0.145*	-0.295	0.314	0.228	-0.078	-0.244	-0.237
4.5 years	(0.057)	(0.037)	(0.181)	(0.086)	(0.274)	(0.339)	(0.150)	(0.167)	(0.213)	(0.293)
N	33,038	33,038	33,038	33,038	33,038	33,038	33,038	33,038	33,038	33,038
R-squared	0.06	0.02	0.10	0.04	0.14	0.03	0.05	0.03	0.06	0.07
Average outcome	0.05	0.01	0.10	0.04	0.12	0.53	0.22	0.11	0.04	0.26
MP FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Party-by-gov. FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Notes: The regression sample is restricted to votes of confidence in a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at date-of-vote level. In all regressions we control for the house of parliament of the MP. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Confirmation refers to the first confidence vote faced by a government in each house of Parliament. Motion of no confidence is a confidence vote initiated by the opposition. The remaining categories in columns (3)-(10) represent confidence votes tied to laws or decrees on the subjects indicated in the column headings. Note that a single confidence vote may pertain to laws or decrees that span multiple subjects.

Table C5: Summary statistics

	Pre-reform		Post-reform	
	Tenure below 4.5 years	Tenure above 4.5 years	Tenure below 4.5 years	Tenure above 4.5 years
	A. MP characteristics			
Age	49.059	48.084	47.127	47.488
Female	.109	.129	.325	.301
Number of terms	2.331	2.662	1.436	1.883
Tenure	4	4.874	4	4.824
High school	.252	.224	.27	.298
Degree	.718	.747	.712	.684
Born in southern Italy	.528	.504	.484	.474
Born outside Italy	.017	.015	.019	.019
Pre-parliament income (€)	116337	110940.3	82559.24	97928.4
Private sector	.488	.49	.555	.537
Self employed	.096	.113	.109	.099
Out of labor force	.027	.025	.018	.012
Observations	2724	3442	19938	6934
	B. Choices in confidence votes			
Confidence	.643	.646	.749	.632
Vote against party directives	.011	.007	.062	.086
Observations	2724	3442	19938	6934
	C. Types of confidence votes			
Confirmation	.04772	.12318	.03822	.05365
Motion of no confidence	0	0	.00035	.02394
Gov and public administration	.09435	.0584	.0487	.27026
Foreign affairs	.00587	.07728	.05773	.0013
Gov budget	.33811	.23649	.04063	.20738
Economy and finance	.5301	.56682	.51861	.54485
Development and environment	.20999	.08309	.27159	.14436
Health	.06021	.0645	.13567	.06634
Education	.1138	.03051	.05166	.00346
Justice and law enforcement	.28818	.24027	.2891	.16945
Observations	2724	3442	19938	6934
	D. Party switches per day			
All	.0001	.00014	.00043	.00022
To majority	.00001	.00008	.0002	.00005
To opposition	.00001	.00004	.00007	.0001
Observations	167493	161852	627594	333265
	E. Legislative bills per day			
Proposed	.00386	.01302	.00308	.00678
Approved	.00039	.00085	.00018	.0002
Ordinary proposed	.00377	.01257	.00289	.00651
Ordinary approved	.00039	.0008	.00015	.00019
Constitutional proposed	.0001	.00045	.00018	.00028
Constitutional approved	0	.00004	.00003	.00001
Observations	167493	161852	627594	333265

Notes: This table shows the sample averages of MP characteristics and outcome variables pre-reform (legislatures XIV-XV) and post-reform (legislatures XVI-XVIII) within one year before and after the 4.5-year tenure threshold. The samples in Panels A-C contain all non-missing confidence votes during the analyzed legislatures. The samples used for Panels D-E contain all day-MP pairs during the analyzed legislatures. *Party switches per day* correspond to the probability an MP switches party in a day. *Legislative bills per day* correspond to the average number of bills proposed or approved in a day by an MP. Age indicates the age when entering parliament (in years). Tenure indicates the number of years spent in Parliament. High school and Degree refer to the highest education level achieved. Income refers to the private income (in 2005 Euros) in the year prior to entering Parliament and is available for MPs that enter Parliament later than 1981. Private sector, Self employed and Out of the labor force refer to the MP occupation prior to entering Parliament. Data on education levels and occupation are not available for Senators. Data on occupation is missing for some Deputies. Confirmation is an indicator equal to one if the confidence vote is the first faced by a government in each house. Motion of no confidence is an indicator of a confidence vote initiated by the opposition. The remaining categories in panel C represent indicators for confidence votes tied to laws on the subjects indicated in the row headings. Note that a single confidence vote may pertain to laws that span multiple subjects.

Table C6: Diff-in-disc estimates of minimum tenure requirement on abstension/no vote

	(1)	(2)	(3)
Post*Tenure under 4.5 years	0.005	0.014	0.009
	(0.019)	(0.019)	(0.019)
N	41,401	41,401	41,401
R-squared	0.01	0.30	0.31
Average outcome	0.20	0.20	0.20
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C7: Diff-in-disc estimates of minimum tenure requirement on confidence, by house

	Chamber of Deputies			Senate		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.083***	0.049***	0.031***	0.031	-0.014	0.037**
	(0.021)	(0.013)	(0.007)	(0.035)	(0.025)	(0.016)
N	22,635	22,635	22,635	10,403	10,403	10,403
R-squared	0.03	0.84	0.96	0.03	0.88	0.94
Average outcome	0.71	0.71	0.71	0.70	0.70	0.70
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C8: Diff-in-disc estimates of minimum tenure requirement on confidence, local quadratic regressions.

	All			Majority party			Opposition party		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post*Tenure under 4.5 years	-0.018	0.048***	0.039***	0.032**	0.042***	0.035***	-0.040	0.041**	0.023*
	(0.027)	(0.018)	(0.007)	(0.014)	(0.010)	(0.009)	(0.025)	(0.016)	(0.012)
N	33,038	33,038	33,038	22,785	22,785	22,785	9,221	9,221	9,221
R-squared	0.03	0.83	0.95	0.01	0.78	0.78	0.05	0.89	0.90
Average outcome	0.70	0.70	0.70	0.96	0.96	0.96	0.10	0.10	0.10
MP FE	NO	YES	YES	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for a second-order polynomial in tenure which can differ on the two sides of the threshold, before and after the reform. In all regressions we control for the house of parliament of the MP.

Table C9: Diff-in-disc estimates of minimum tenure requirement on confidence, s.e. clustered at date-of-vote level

	(1)	(2)	(3)
Post*Tenure under 4.5 years	0.059	0.056***	0.032***
	(0.052)	(0.019)	(0.006)
N	33,038	33,038	33,038
R-squared	0.02	0.83	0.95
Average outcome	0.70	0.70	0.70
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at date-of-vote level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C10: Diff-in-disc estimates of minimum tenure requirement on confidence, s.e. clustered at first-day-as-MP level

	(1)	(2)	(3)
Post*Tenure under 4.5 years	0.059	0.056***	0.032***
	(0.047)	(0.021)	(0.009)
N	33,038	33,038	33,038
R-squared	0.02	0.83	0.95
Average outcome	0.70	0.70	0.70
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at first-day-as-MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C11: Diff-in-disc estimates of minimum tenure requirement on pre-determined variables, majority MPs.

	(1) Female	(2) Age	(3) High school	(4) Degree	(5) South	(6) Foreign	(7) Income (€)	(8) Private sector	(9) Self employed	(10) Out of labor force
Post*Tenure under 4.5 years	-0.020	-0.409	0.009	-0.001	0.019	0.004	-12881.782	0.040	0.019	-0.008
	(0.017)	(0.427)	(0.019)	(0.019)	(0.023)	(0.006)	(8974.773)	(0.026)	(0.015)	(0.006)
N	22,785	22,785	15,140	15,140	22,785	22,785	22,728	14,290	14,290	14,290
R-squared	0.04	0.10	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00
Average outcome	0.31	47.54	0.26	0.73	0.51	0.02	98716.98	0.55	0.10	0.02
MP FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Party-by-gov. FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Notes: The regression sample is restricted to votes of confidence in a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. In all regressions we control for the house of parliament of the MP. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Age indicates the age when entering parliament for the first time (in years). High school and Degree refer to the highest education level achieved. South and Foreign refer to the birthplace in Southern Italy and in a foreign country, respectively. Income refers to the private income (in 2005 Euros) in the year prior to entering Parliament and is available for MPs that enter Parliament later than 1981. Private sector, Self employed and Out of the labor force refer to the MP occupation prior to entering Parliament. Data on education levels and occupation are not available for Senators. Data on occupation is missing for some Deputies.

Table C12: Diff-in-disc estimates of minimum tenure requirement on pre-determined variables, opposition MPs.

	(1) Female	(2) Age	(3) High school	(4) Degree	(5) South	(6) Foreign	(7) Income (€)	(8) Private sector	(9) Self employed	(10) Out of labor force
Post*Tenure under	-0.003	-0.474	0.014	-0.015	0.021	-0.003	-8202.955	-0.029	-0.010	0.019
4.5 years	(0.029)	(0.594)	(0.033)	(0.036)	(0.036)	(0.009)	(5056.372)	(0.041)	(0.020)	(0.016)
N	9,221	9,221	5,970	5,970	9,221	9,221	9,193	5,492	5,492	5,492
R-squared	0.01	0.11	0.00	0.00	0.01	0.00	0.03	0.01	0.02	0.00
Average outcome	0.23	47.05	0.30	0.66	0.43	0.02	73767.88	0.50	0.12	0.02
MP FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Party-by-gov. FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Notes: The regression sample is restricted to votes of confidence in a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. In all regressions we control for the house of parliament of the MP. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Age indicates the age when entering parliament for the first time (in years). High school and Degree refer to the highest education level achieved. South and Foreign refer to the birthplace in Southern Italy and in a foreign country, respectively. Income refers to the private income (in 2005 Euros) in the year prior to entering Parliament and is available for MPs that enter Parliament later than 1981. Private sector, Self employed and Out of the labor force refer to the MP occupation prior to entering Parliament. Data on education levels and occupation are not available for Senators. Data on occupation is missing for some Deputies.

Table C13: Diff-in-disc estimates of minimum tenure requirement on types of confidence votes, majority MPs.

	Confirmation (1)	Motion of no confidence (2)	Government and public administration (3)	Foreign affairs (4)	Government budget (5)	Economy and finance (6)	Development, and environment (7)	Health (8)	Education (9)	Justice and law enforcement (10)
Post*Tenure under	-0.042	-0.023	-0.288	0.190**	-0.271	0.383	0.230	-0.063	-0.295	-0.295
4.5 years	(0.050)	(0.023)	(0.184)	(0.094)	(0.281)	(0.338)	(0.156)	(0.171)	(0.214)	(0.295)
N	22,785	22,785	22,785	22,785	22,785	22,785	22,785	22,785	22,785	22,785
R-squared	0.06	0.01	0.11	0.06	0.16	0.04	0.05	0.03	0.08	0.08
Average outcome	0.04	0.00	0.09	0.05	0.11	0.54	0.24	0.12	0.05	0.26
MP FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Party-by-gov. FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Notes: The regression sample is restricted to votes of confidence in a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at date-of-vote level. In all regressions we control for the house of parliament of the MP. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Confirmation refers to the first confidence vote faced by a government in each house of Parliament. Motion of no confidence is a confidence vote initiated by the opposition. The remaining categories in columns (3)-(10) represent confidence votes tied to laws or decrees on the subjects indicated in the column headings. Note that a single confidence vote may pertain to laws or decrees that span multiple subjects.

Table C14: Diff-in-disc estimates of minimum tenure requirement on types of confidence votes, opposition MPs.

	Confirmation (1)	Motion of no confidence (2)	Government and public administration (3)	Foreign affairs (4)	Government budget (5)	Economy and finance (6)	Development, and environment (7)	Health (8)	Education (9)	Justice and law enforcement (10)
Post*Tenure under	0.045	-0.070	-0.284	0.023	-0.362	0.156	0.232	-0.096	-0.130	-0.133
4.5 years	(0.084)	(0.067)	(0.189)	(0.077)	(0.269)	(0.353)	(0.152)	(0.165)	(0.215)	(0.299)
N	9,221	9,221	9,221	9,221	9,221	9,221	9,221	9,221	9,221	9,221
R-squared	0.09	0.05	0.09	0.02	0.12	0.01	0.05	0.03	0.06	0.04
Average outcome	0.06	0.01	0.12	0.03	0.14	0.52	0.19	0.07	0.03	0.25
MP FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Party-by-gov. FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Notes: The regression sample is restricted to votes of confidence in a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at date-of-vote level. In all regressions we control for the house of parliament of the MP. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Confirmation refers to the first confidence vote faced by a government in each house of Parliament. Motion of no confidence is a confidence vote initiated by the opposition. The remaining categories in columns (3)-(10) represent confidence votes tied to laws or decrees on the subjects indicated in the column headings. Note that a single confidence vote may pertain to laws or decrees that span multiple subjects.

Table C15: Diff-in-disc estimates of minimum tenure requirement on vote against party directives, local quadratic regressions.

	(1)	(2)	(3)
Post*Tenure under 4.5 years	-0.032*** (0.012)	-0.018** (0.008)	-0.021*** (0.007)
N	32,006	32,006	32,006
R-squared	0.02	0.81	0.84
Average outcome	0.06	0.06	0.06
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for a second-order polynomial in tenure which can differ on the two sides of the threshold, before and after the reform. In all regressions we control for the house of parliament of the MP.

Table C16: Diff-in-disc estimates of minimum tenure requirement on vote against party directives, s.e. clustered at date-of-vote level

	(1)	(2)	(3)
Post*Tenure under 4.5 years	-0.065*** (0.024)	-0.040*** (0.007)	-0.028*** (0.005)
N	32,006	32,006	32,006
R-squared	0.01	0.81	0.84
Average outcome	0.06	0.06	0.06
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at date-of-vote level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C17: Diff-in-disc estimates of minimum tenure requirement on vote against party directives, s.e. clustered at first-day-as-MP level

	(1)	(2)	(3)
Post*Tenure under 4.5 years	-0.065***	-0.040***	-0.028***
	(0.019)	(0.011)	(0.008)
N	32,006	32,006	32,006
R-squared	0.01	0.81	0.84
Average outcome	0.06	0.06	0.06
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at first-day-as-MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C18: Regression discontinuity estimates on votes against party directives, heterogeneity by majority margin

	(1)	(2)	(3)
Tenure under 4.5 years	-0.100***	-0.058***	-0.045***
	(0.017)	(0.012)	(0.012)
Tenure under 4.5 years*Majority margin ('00)	0.037***	0.008	0.017**
	(0.008)	(0.006)	(0.007)
N	26,184	26,184	26,184
R-squared	0.02	0.81	0.84
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Majority margin indicates the majority margin in the house in which the confidence vote took place measured in hundred MPs. In all regressions we control for the house of parliament of the MP.

Table C19: Regression discontinuity estimates on confidence, heterogeneity by majority margin *excluding confirmation votes*.

	Majority party			Opposition party		
	(1)	(2)	(3)	(4)	(5)	(6)
Tenure under 4.5	0.073***	0.073***	0.073***	-0.116***	-0.001	0.007
years	(0.020)	(0.016)	(0.016)	(0.030)	(0.019)	(0.019)
Tenure under 4.5	-0.023**	-0.026***	-0.025***	0.059***	0.001	-0.002
years*Majority margin ('00)	(0.010)	(0.008)	(0.008)	(0.016)	(0.008)	(0.008)
N	18,185	18,185	18,185	6,912	6,912	6,912
R-squared	0.01	0.79	0.79	0.04	0.91	0.91
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff and excludes confirmation votes. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Majority margin indicates the majority margin in the house in which the confidence vote took place measured in hundred MPs. In all regressions we control for the house of parliament of the MP.

Table C20: Regression discontinuity estimates on votes against party directives, heterogeneity by majority margin *excluding confirmation votes*.

	(1)	(2)	(3)
Tenure under 4.5	-0.087***	-0.046***	-0.044***
years	(0.017)	(0.012)	(0.012)
Tenure under 4.5	0.032***	0.014**	0.012**
years*Majority margin ('00)	(0.008)	(0.006)	(0.006)
N	25,097	25,097	25,097
R-squared	0.02	0.84	0.84
MP FE	NO	YES	YES
Party-by-gov. FE	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff and excludes confirmation votes. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Majority margin indicates the majority margin in the house in which the confidence vote took place measured in hundred MPs. In all regressions we control for the house of parliament of the MP.

Table C21: Regression discontinuity estimates on confidence, heterogeneity by age of first year in parliament.

	Majority party (1)	Opposition party (2)
Tenure under 4.5 years	-0.053	0.123
	(0.048)	(0.102)
Tenure under 4.5 years*age	0.002*	-0.005**
	(0.001)	(0.002)
N	18,939	7,245
R-squared	0.01	0.02
MP FE	NO	NO
Party-by-gov. FE	NO	NO

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Age is the age of MPs at the start of their parliamentary tenure (years). All regressions also control for a quadratic polynomial of age when entering parliament. In all regressions we control for the house of parliament of the MP.

Table C22: Regression discontinuity estimates on votes against party directives, heterogeneity by age of first year in parliament.

	(1)
Tenure under 4.5 years	0.061
	(0.043)
Tenure under 4.5 years*age	-0.002***
	(0.001)
N	26,184
R-squared	0.01
MP FE	NO
Party-by-gov. FE	NO

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Age is the age of MPs at the start of their parliamentary tenure (years). All regressions also control for a quadratic polynomial of age when entering parliament. In all regressions we control for the house of parliament of the MP.

Table C23: Regression discontinuity estimates on confidence, heterogeneity by residualized pre-parliament income.

	Majority party (1)	Opposition party (2)
Tenure under 4.5	0.041***	-0.091***
years	(0.010)	(0.017)
Tenure under 4.5	-0.014	0.012
years*income (million €)	(0.032)	(0.243)
N	18,886	7,222
R-squared	0.01	0.02
MP FE	NO	NO
Party-by-gov. FE	NO	NO

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Income is the real income (in million $euro$ at 2005 prices) of the MP in the year before entering parliament, residualized by age. All regressions also control for a quadratic polynomial of age when entering parliament. In all regressions we control for the house of parliament of the MP.

Table C24: Regression discontinuity estimates on votes against party directives, heterogeneity by residualized pre-parliament income.

	(1)
Tenure under 4.5	-0.056***
years	(0.009)
Tenure under 4.5	0.028
years*income (million €)	(0.028)
N	26,108
R-squared	0.01
MP FE	NO
Party-by-gov. FE	NO

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. Income is the real income (in million $euro$ at 2005 prices) of the MP in the year before entering parliament, residualized by age. All regressions also control for a quadratic polynomial of age when entering parliament. In all regressions we control for the house of parliament of the MP.

Table C25: Diff-in-disc estimates of minimum tenure requirement on party-switches, local quadratic regressions.

	Switch to any party			Switch to majority party			Switch to opposition party		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post*Tenure under	0.0002*	0.0002	0.0003**	0.0001	0.0001	0.0002**	0.0000	0.0000	0.0000
4.5 years	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0000)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.0001	0.0031	0.0033	0.0001	0.0021	0.0023	0.0001	0.0027	0.0031
Average outcome	0.0003	0.0003	0.0003	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
MP FE	NO	YES	YES	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for a second-order polynomial in tenure which can differ on the two sides of the threshold, before and after the reform. In all regressions we control for the house of parliament of the MP.

Table C26: Diff-in-disc estimates of minimum tenure requirement on party-switches, clustered at date level.

	Switch to any party			Switch to majority party			Switch to opposition party		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post*Tenure under	0.0005**	0.0004**	0.0005**	0.0004**	0.0004**	0.0004**	0.0000	0.0000	0.0000
4.5 years	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.0001	0.0030	0.0033	0.0001	0.0021	0.0023	0.0000	0.0027	0.0031
Average outcome	0.0003	0.0003	0.0003	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
MP FE	NO	YES	YES	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at date level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C27: Diff-in-disc estimates of minimum tenure requirement on party-switches, s.e. clustered at first-day-as-MP level

	Switch to any party			Switch to majority party			Switch to opposition party		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post*Tenure under	0.0005**	0.0004**	0.0005***	0.0004***	0.0004***	0.0004***	0.0000	0.0000	0.0000
4.5 years	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0000)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.0001	0.0030	0.0033	0.0001	0.0021	0.0023	0.0000	0.0027	0.0031
Average outcome	0.0003	0.0003	0.0003	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
MP FE	NO	YES	YES	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at first-day-as-MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C28: Diff-in-disc estimates of minimum tenure requirement on party-switches by party of origin and destination.

	From majority to majority			From opposition to majority		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.00023***	0.00021***	0.00021***	0.00001***	0.00002***	0.00002***
	(0.00003)	(0.00003)	(0.00003)	(0.00000)	(0.00001)	(0.00001)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.00009	0.00216	0.00219	0.00001	0.00182	0.00188
Average outcome	0.00006	0.00006	0.00006	0.00001	0.00001	0.00001
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C29: Diff-in-disc estimates of minimum tenure requirement on party-switches by party of origin and destination.

	From majority to opposition			From opposition to opposition		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.00002	0.00002*	0.00003*	-0.00001	-0.00001	0.00000
	(0.00001)	(0.00001)	(0.00001)	(0.00002)	(0.00002)	(0.00002)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.00001	0.00185	0.00216	0.00003	0.00172	0.00177
Average outcome	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C30: Diff-in-disc estimates of minimum tenure requirement on law proposed and approved, local quadratic regressions.

	Law proposed			Law proposed and approved		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.00280***	0.00467***	0.00514***	0.00019	0.00049***	0.00064***
	(0.00106)	(0.00112)	(0.00137)	(0.00013)	(0.00014)	(0.00015)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.001	0.006	0.008	0.000	0.007	0.007
Average outcome	0.0054	0.0054	0.0054	0.0003	0.0003	0.0003
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for a second-order polynomial in tenure which can differ on the two sides of the threshold, before and after the reform. In all regressions we control for the house of parliament of the MP.

Table C31: Diff-in-disc estimates of minimum tenure requirement on law proposed and approved, s.e. clustered at date level

	Law proposed			Law proposed and approved		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.00280	0.00467**	0.00514**	0.00019	0.00049**	0.00064***
	(0.00192)	(0.00199)	(0.00239)	(0.00019)	(0.00020)	(0.00021)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.001	0.006	0.008	0.000	0.007	0.007
Average outcome	0.0054	0.0054	0.0054	0.0003	0.0003	0.0003
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at date level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C32: Diff-in-disc estimates of minimum tenure requirement on law proposed and approved, s.e. clustered at first-day-as-MP level

	Law proposed			Law proposed and approved		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.00280*	0.00467**	0.00514***	0.00019	0.00049**	0.00064***
	(0.00143)	(0.00181)	(0.00178)	(0.00013)	(0.00021)	(0.00021)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.001	0.006	0.008	0.000	0.007	0.007
Average outcome	0.0054	0.0054	0.0054	0.0003	0.0003	0.0003
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at first-day-as-MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

Table C33: Diff-in-disc estimates of minimum tenure requirement on *ordinary* law proposed and approved.

	Ordinary law proposed			Ordinary law proposed and approved		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.00260**	0.00443***	0.00484***	0.00014	0.00044***	0.00057***
	(0.00104)	(0.00110)	(0.00134)	(0.00013)	(0.00014)	(0.00015)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.001	0.006	0.008	0.000	0.007	0.007
Average outcome	0.0052	0.0052	0.0052	0.0003	0.0003	0.0003
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

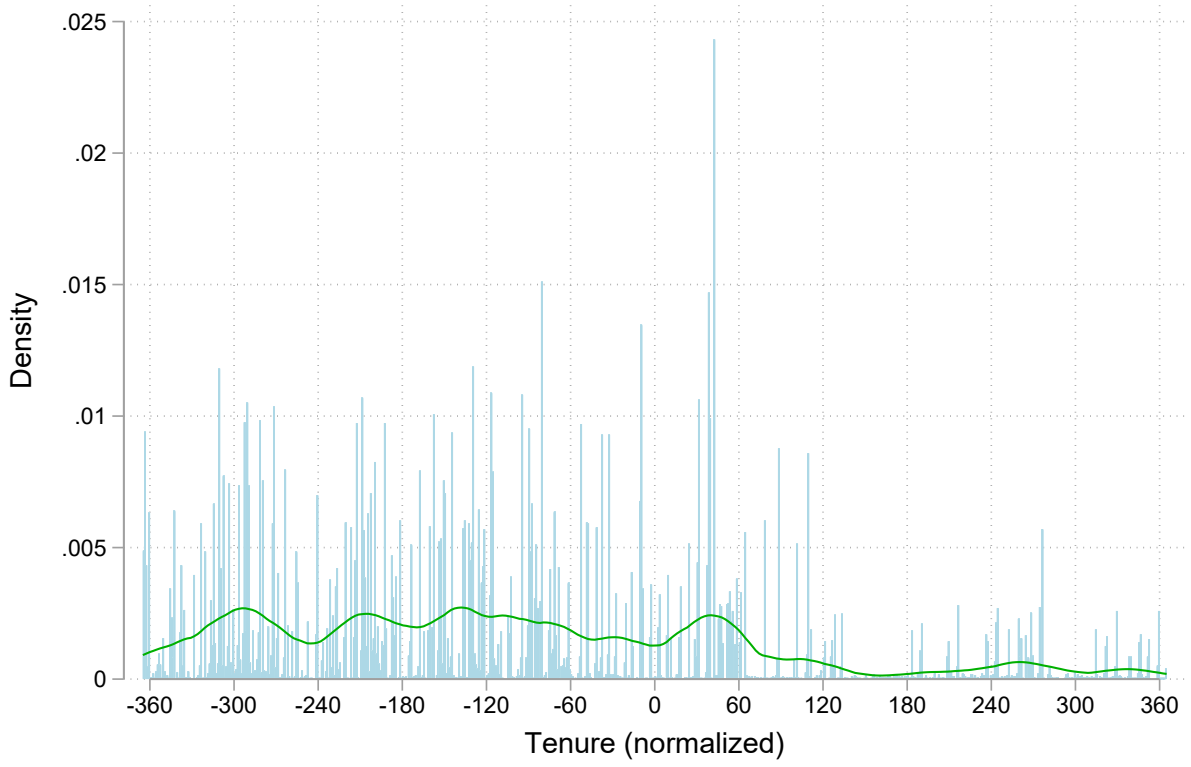
Table C34: Diff-in-disc estimates of minimum tenure requirement on *constitutional* law proposed and approved.

	Constitutional law proposed			Constitutional law proposed and approved		
	(1)	(2)	(3)	(4)	(5)	(6)
Post*Tenure under 4.5 years	0.00020** (0.00009)	0.00024*** (0.00009)	0.00030*** (0.00011)	0.00005** (0.00002)	0.00005** (0.00003)	0.00006** (0.00003)
N	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204	1,290,204
R-squared	0.000	0.004	0.004	0.000	0.004	0.004
Average outcome	0.0002	0.0002	0.0002	0.0000	0.0000	0.0000
MP FE	NO	YES	YES	NO	YES	YES
Party-by-gov. FE	NO	NO	YES	NO	NO	YES

Notes: The regression sample is restricted to a bandwidth of 12 months on each side of the cutoff. Standard errors are clustered at MP level. Average outcome is the average of the outcome variable within the bandwidth after reaching the tenure threshold. In all regressions we control for the house of parliament of the MP.

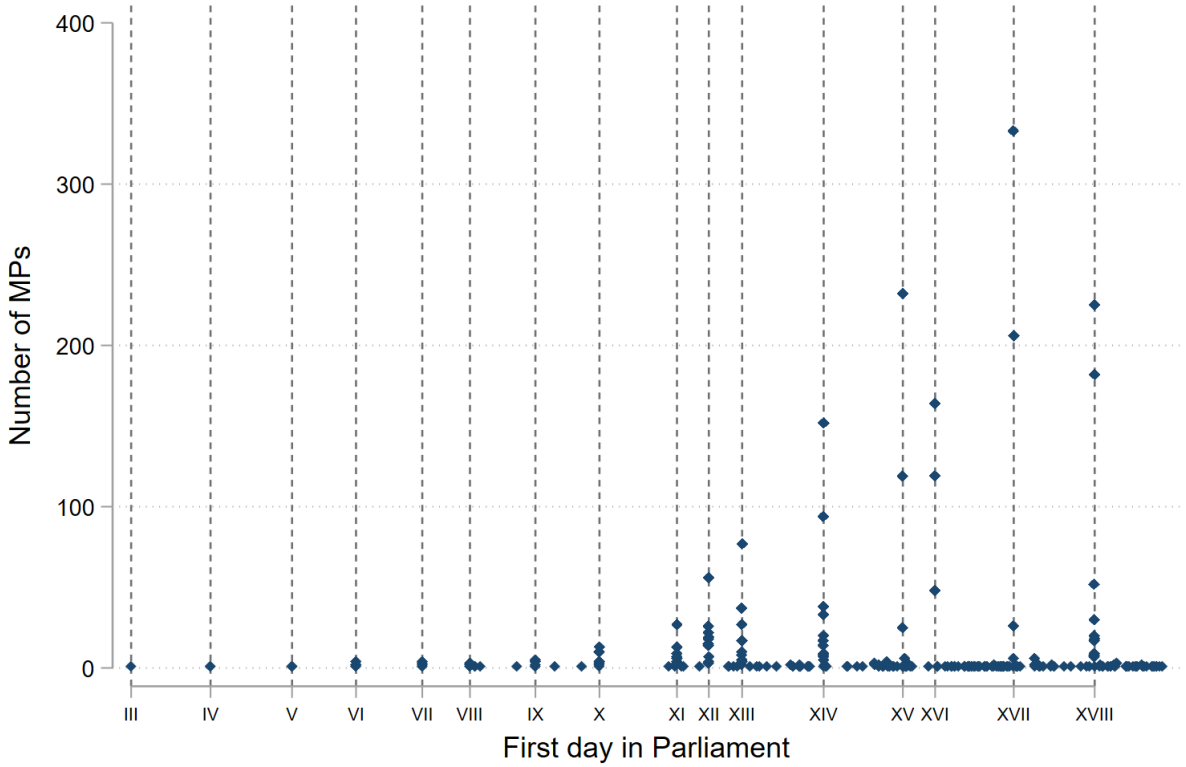
Appendix G Additional Figures

Figure D1: Density of confidence votes at MP-vote level in daily bins



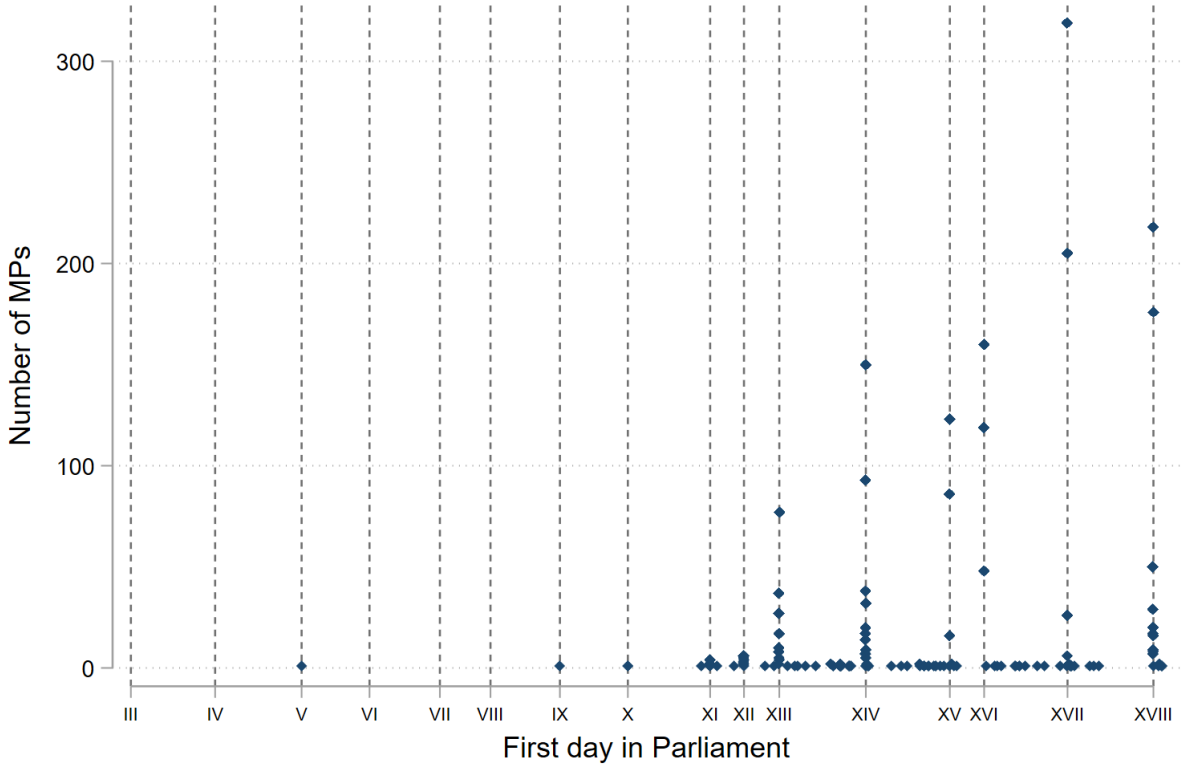
Notes: The light blue bars are the density of confidence votes at MP-vote level in daily bins for both houses over normalized tenure within one year from the 4.5-year cutoff. The green solid line is the kernel density estimated with Epanechnikov kernel and a kernel bandwidth of one month.

Figure D2: Number of MPS by first day in Parliament, entire dataset



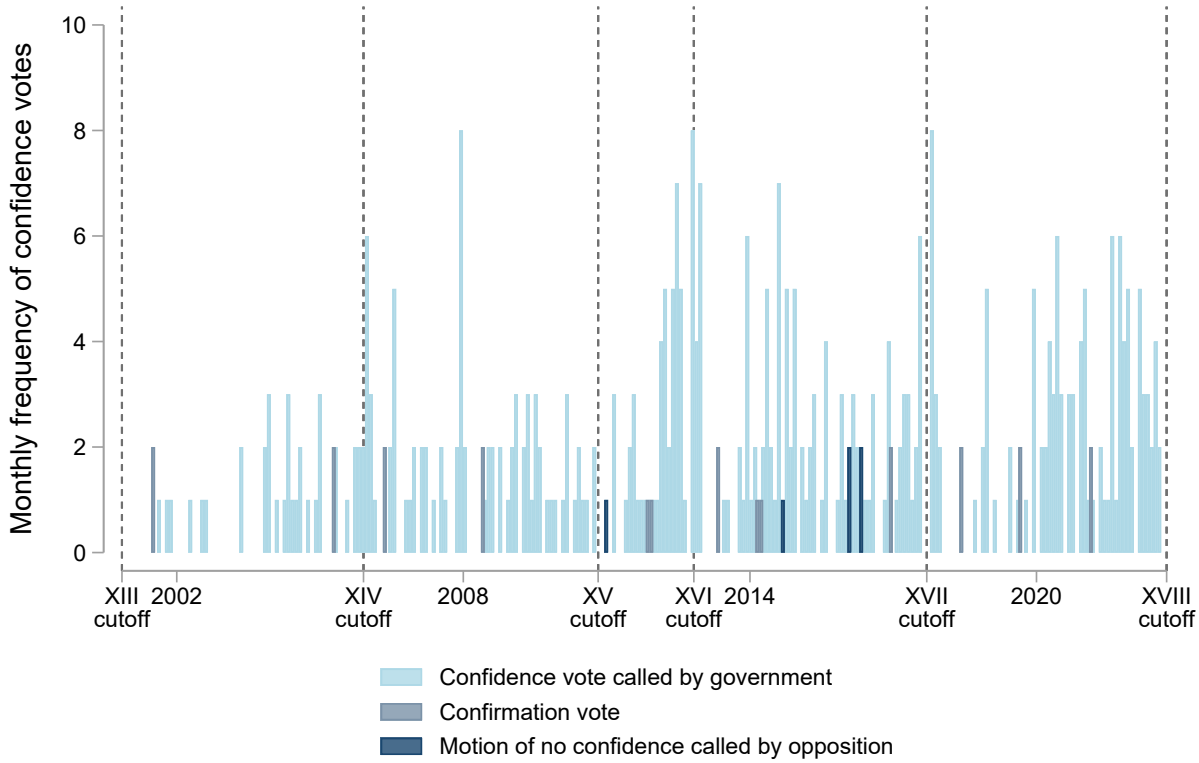
Notes: The diamonds are the daily frequency of MPs by their first day in Parliament. This figure includes all the MPs of legislatures XIV-XVIII, indendendently of their tenure. The dashed lines correspond to date of the beginning of each legislature.

Figure D3: Number of MPS by first day in Parliament, within one year from cutoff



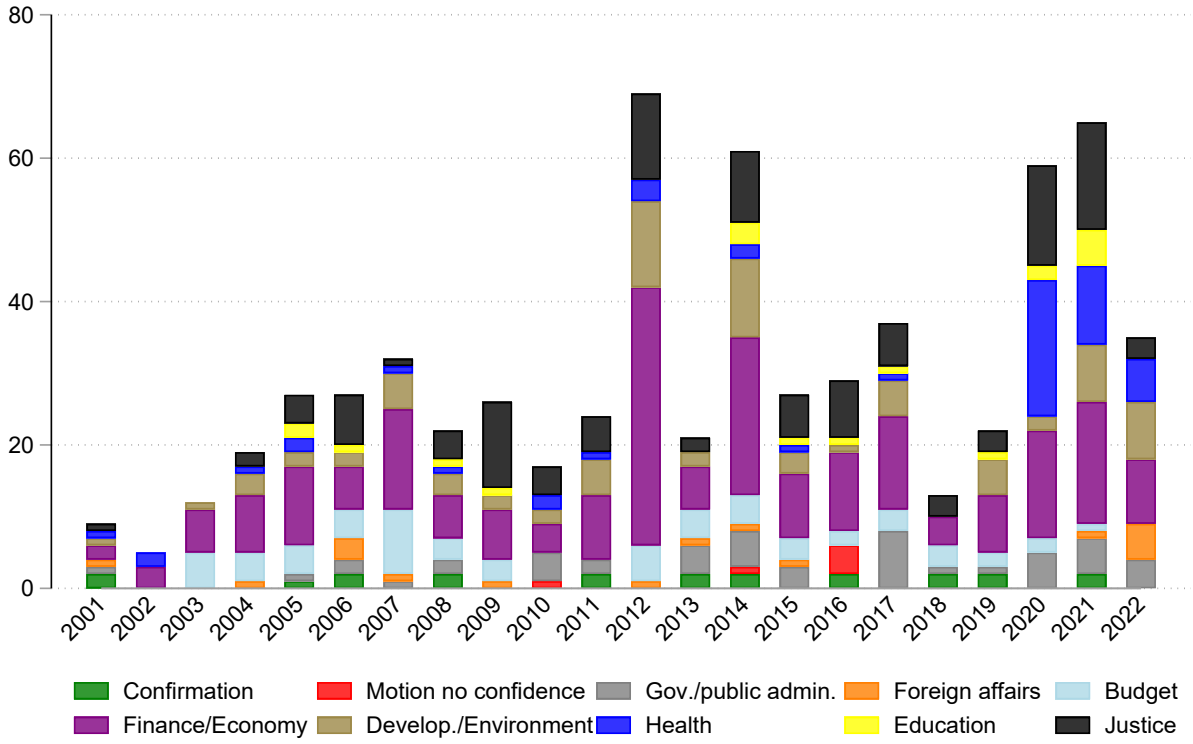
Notes: The diamonds are the daily frequency of MPs by their first day in Parliament. This figure includes the MPs present in Parliament in legislatures XIV-XVIII, with a parliamentary tenure between 3.5 and 5.5 years. The dashed lines correspond to the date of the beginning of each legislature.

Figure D4: Frequency of confidence votes at vote level in monthly bins



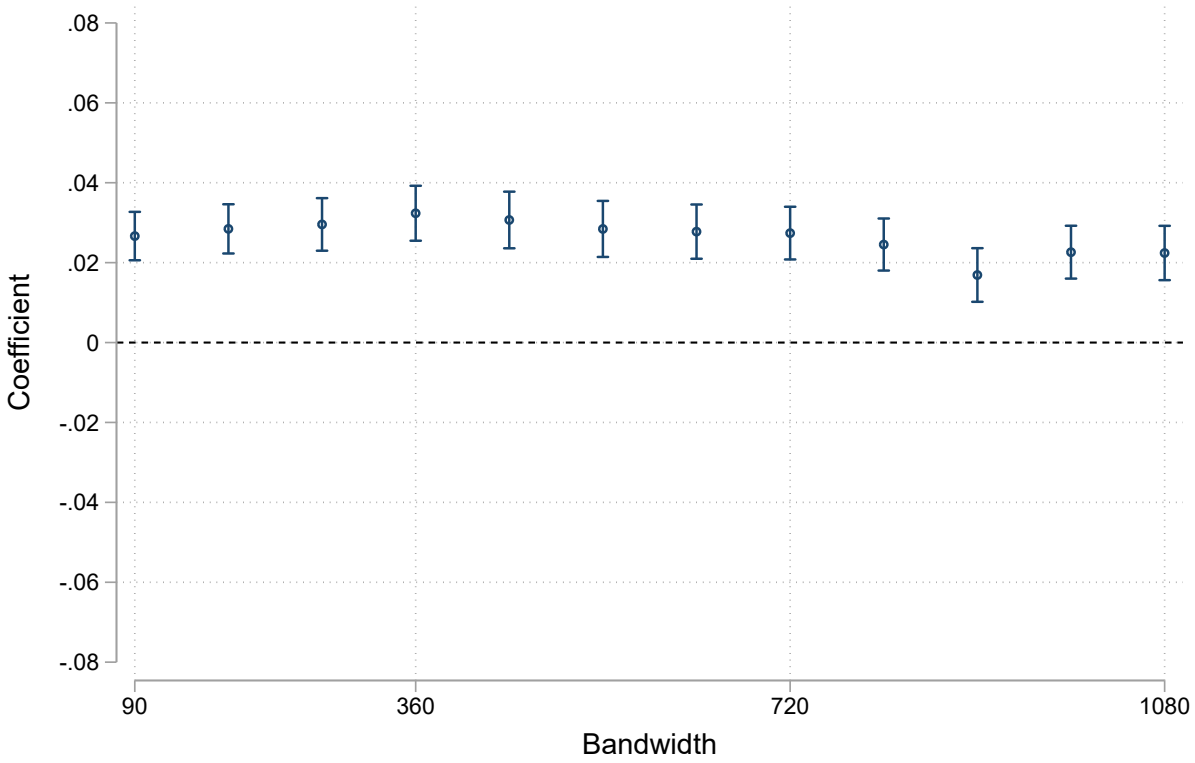
Notes: The light blue bars are the frequency of confidence votes called by the government at vote level in monthly bins. The navy blue bars are the frequency of motions of no confidence called by the opposition at vote level in monthly bins. The gray bars are the frequency of confirmation votes at vote level in monthly bins. The green solid line is the kernel density estimated with Epanechnikov kernel and a kernel bandwidth of one year. The dashed lines correspond to the 4.5-year cutoffs for MPs that are newly elected at the beginning of each legislature from legislature XIII to XVIII.

Figure D5: Frequency of confidence votes by type at vote level in yearly bins



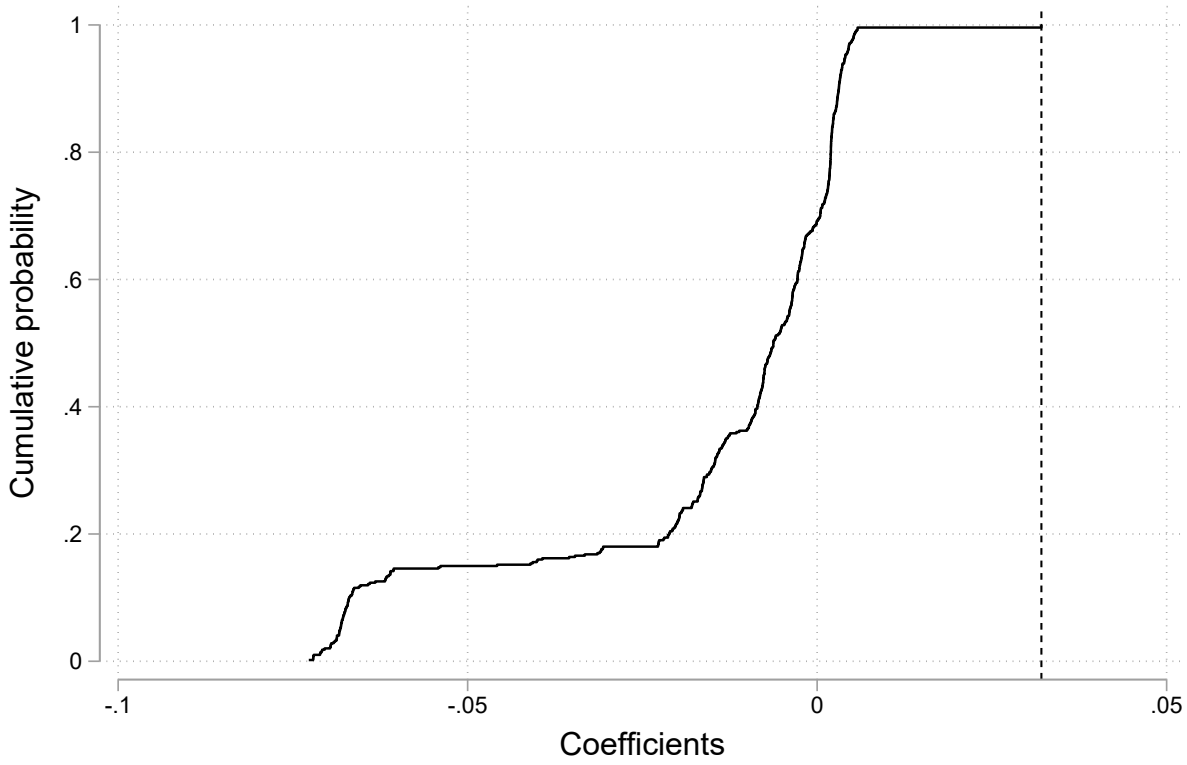
Notes: The bars are the frequency of confidence votes at vote-level in yearly bins for both houses. Confirmation refers to the first confidence vote faced by a government in each house of Parliament. Motion of no confidence is a confidence vote initiated by the opposition. The remaining categories represent confidence votes tied to laws or decrees on the subjects indicated in the row headings. Note that a single confidence vote may pertain to laws or decrees that span multiple subjects. In this case, the graph shows one confidence vote for each related subject.

Figure D6: Bandwidth sensitivity, voting confidence



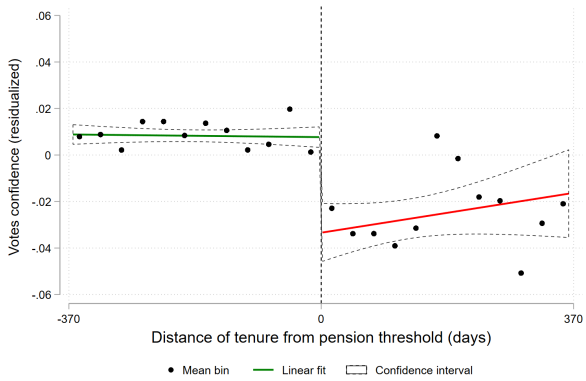
Notes: The figure shows the point estimate and the 95 percent confidence interval of the difference-in-discontinuities coefficients estimated within different bandwidths, from three months up to three years around the threshold. For the estimates in this figure, we use standard errors clustered at MP level. Voting confidence in the government is the dependent variable. The horizontal axis shows the number of tenure days from the 4.5-year-cutoff in each side of the bandwidth.

Figure D7: Placebo estimates

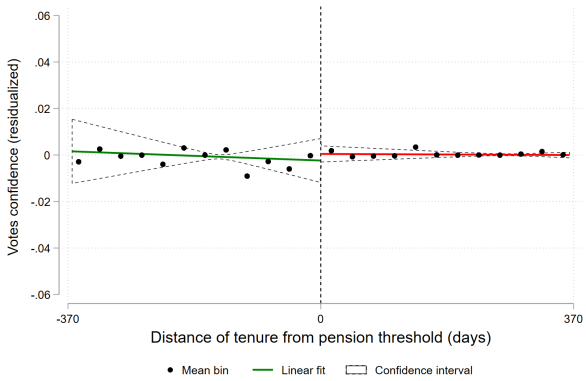


Notes: This figure shows the cumulative distribution of difference-in-discontinuities estimates on votes of confidence for both houses, from placebo local linear regressions in which the cutoff is set in different parts of the tenure distribution. Estimates are computed using the regression in Equation (4) within a 1-year bandwidth. Cutoffs are located at every day from 4 years and 8 months to 5 years and 4 months, in order to stay sufficiently away from the policy thresholds of 3.5, 4.5 and 5.5 years at which the severance payment, the pension age and the pension payment change discontinuously. The vertical dashed line shows the coefficient estimated using the true 4.5-year tenure threshold.

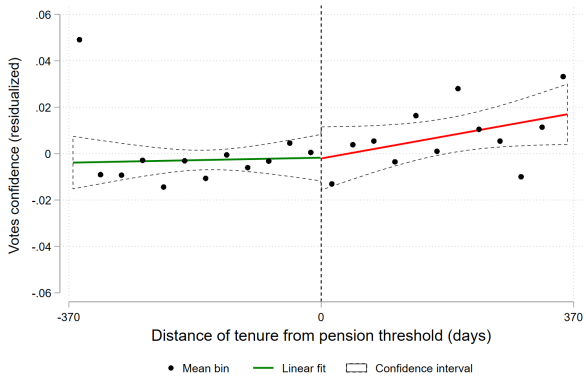
Figure D8: Voting confidence, by majority and opposition parties.



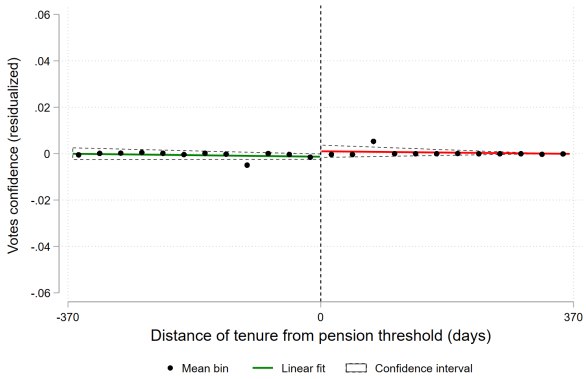
(a) Elected in majority party, post-treatment



(b) Elected in majority party, pre-treatment



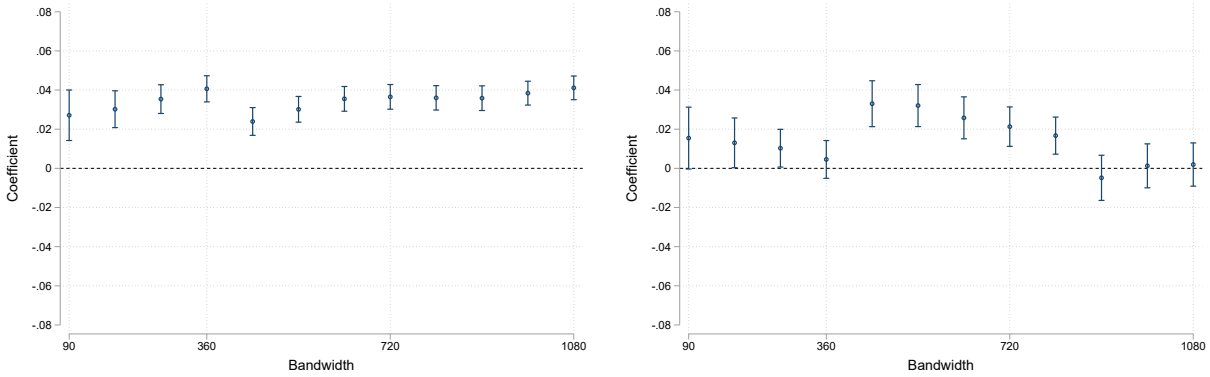
(c) Elected in opposition party, post-treatment



(d) Elected in opposition party, pre-treatment

Notes: These figures show the effect of the parliamentary tenure distance from the 4.5 year-cutoff on the MP's probability of voting confidence in the government. The circles are averages across monthly bins on either side of the threshold, while the solid and dashed lines represent the predicted values and confidence intervals of a local linear regression of the outcome on (days of tenure, normalized) and the fixed effects, separately for each side of the cutoff. The bandwidth includes observations within one year from the 4.5 year-cutoff.

Figure D9: Bandwidth sensitivity, voting confidence by majority and opposition parties.

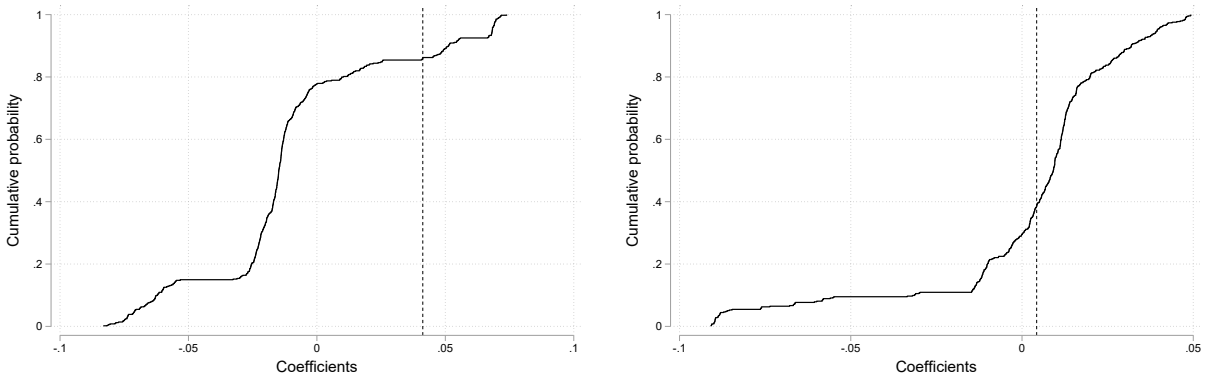


(a) Elected in majority party

(b) Elected in opposition party

Notes: The figure shows the point estimate and the 95 percent confidence interval of the difference-in-discontinuities coefficients estimated within different bandwidths, from three months up to three years around the threshold, separately for majority and opposition parties. For the estimates in this figure, we use heteroskedasticity-robust standard errors. The dependent variable is voting confidence in the government. The horizontal axis shows the number of tenure days from the 4.5-year-cutoff in each side of the bandwidth.

Figure D10: Placebo estimates, voting confidence by majority and opposition parties.

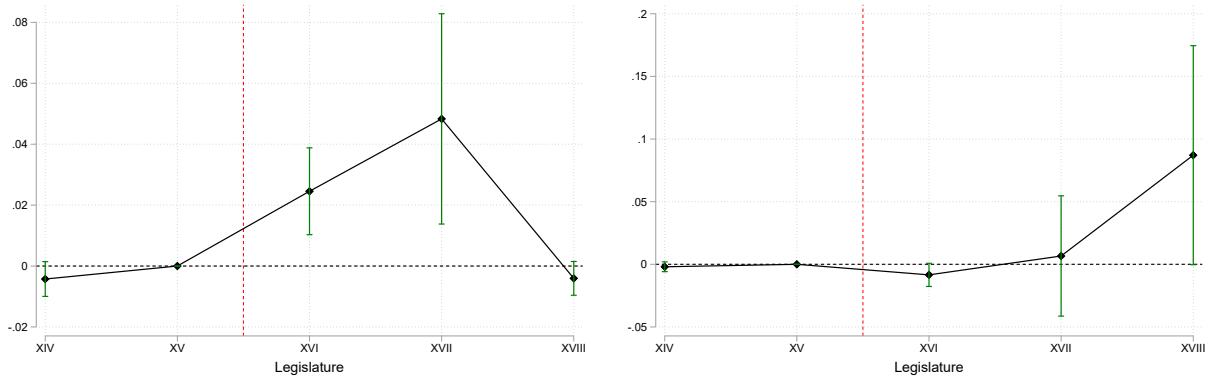


(a) Elected in majority party

(b) Elected in opposition party

Notes: This figure shows the cumulative distribution of difference-in-discontinuities estimates on votes of confidence for majority and opposition MPs separately, from placebo local linear regressions in which the cutoff is set in different parts of the tenure distribution. Estimates are computed using the regression in Equation (4) within a 1-year bandwidth. Cutoffs are located at every day from 3 years and 7 months to 4 years and 5 months and at every day from 4 years and 7 months to 5 years and 5 months, in order to stay sufficiently away from the policy thresholds of 3.5, 4.5 and 5.5 years at which the severance payment, the pension age and the pension payment change discontinuously. The vertical dashed line shows the coefficient estimated using the true 4.5-year tenure threshold.

Figure D11: Voting confidence, RD coefficients by legislature, majority and opposition parties.

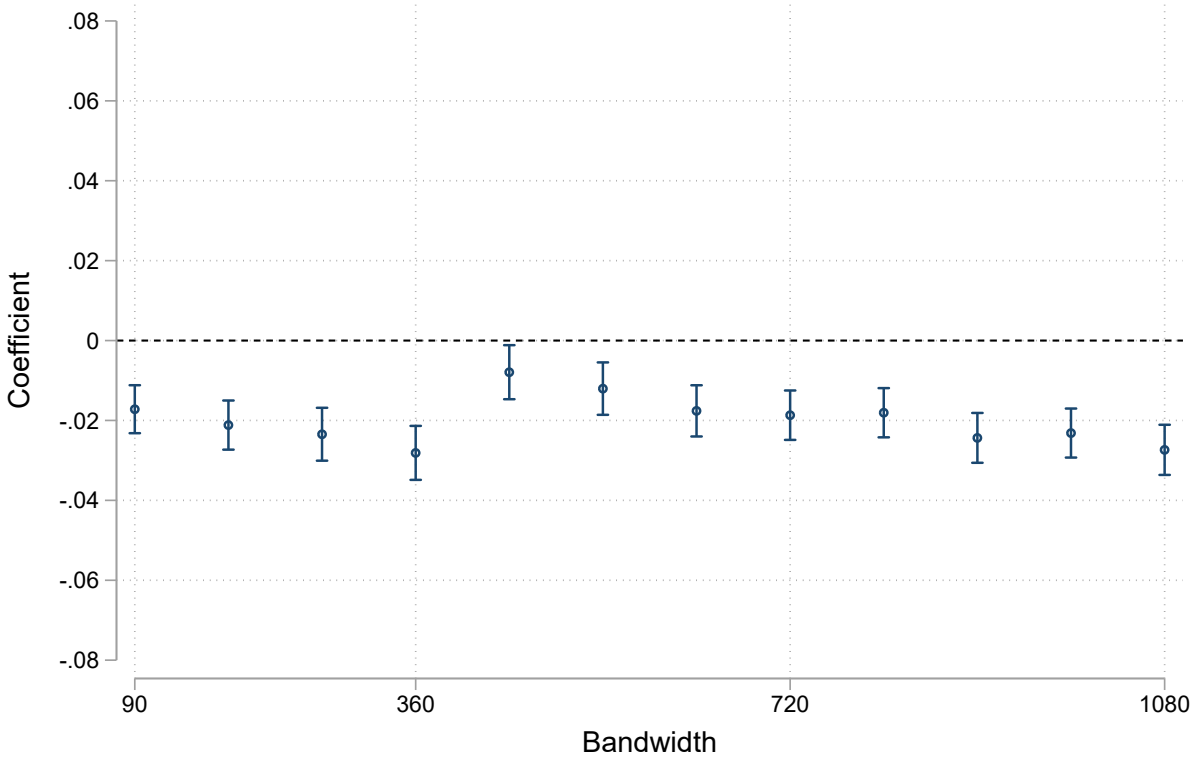


(a) Elected in majority party

(b) Elected in opposition party

Notes: These figures show the RD coefficient and its 95 percent confidence interval estimating regression Equation (3), separately for MPs elected in parties supporting the government and MPs elected in parties opposing the government.

Figure D12: Bandwidth sensitivity, voting against party directives



Notes: The figure shows the point estimate and the 95 percent confidence interval of the difference-in-discontinuities coefficients estimated within different bandwidths, from three months up to three years around the threshold. For the estimates in this figure, we use standard errors clustered at MP level. Voting against party directives is the dependent variable. The horizontal axis shows the number of tenure days from the 4.5-year-cutoff in each side of the bandwidth.

Figure D13: Cdfs of annual income in the year before becoming MP, by legislature

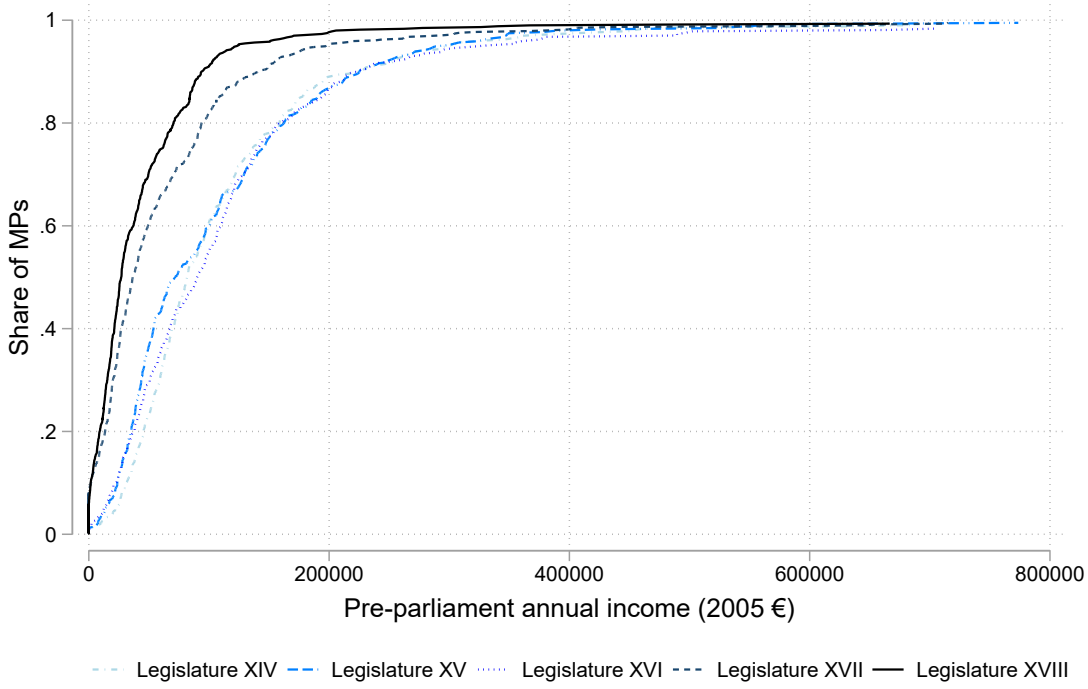
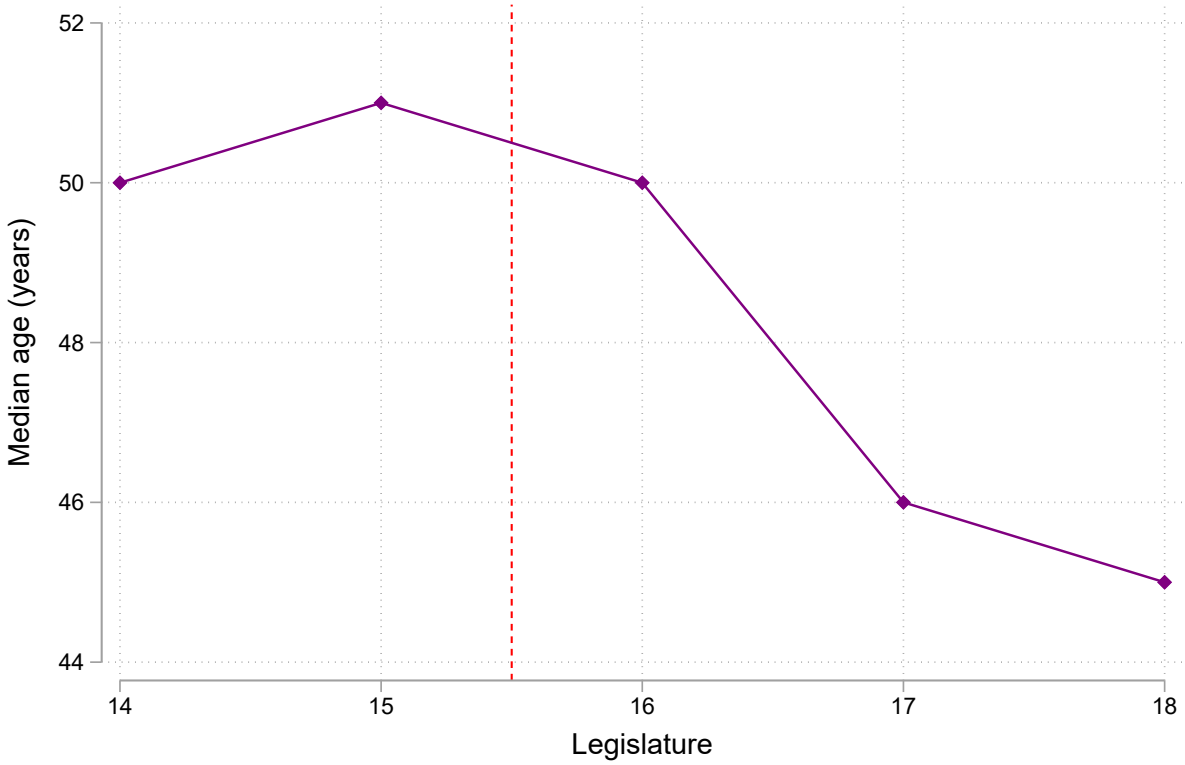
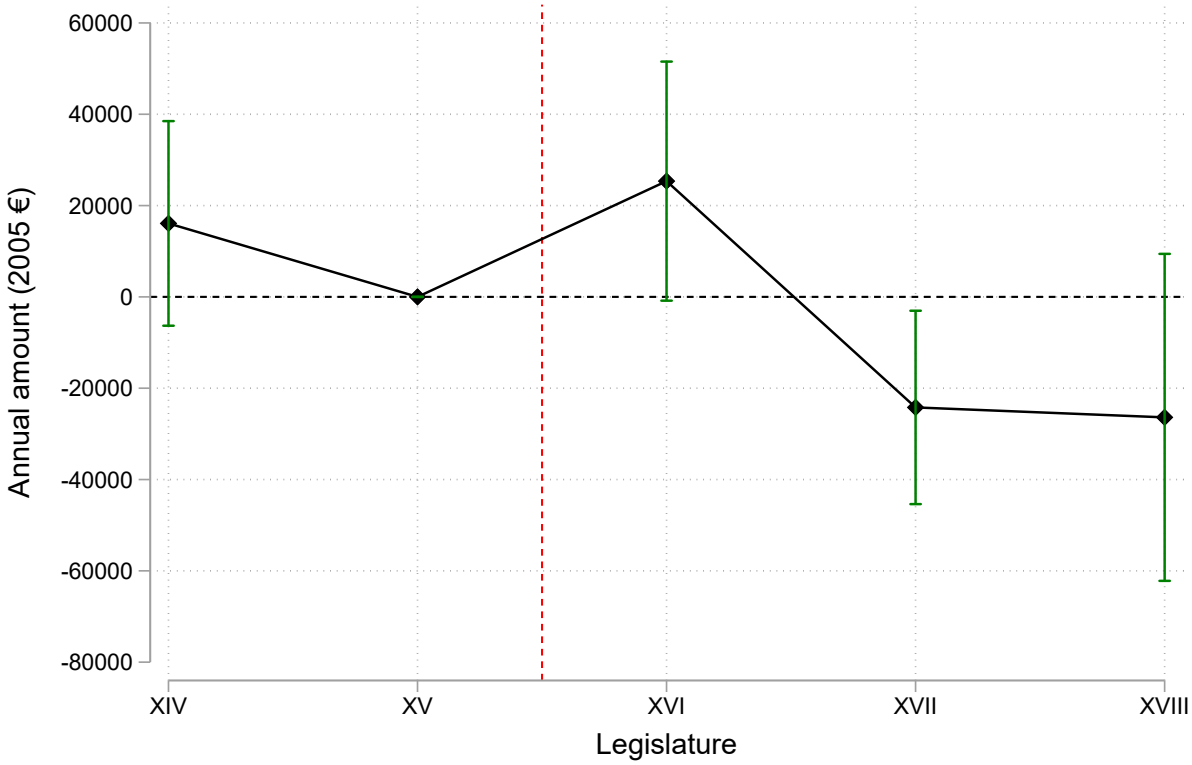


Figure D14: Median age, by legislature



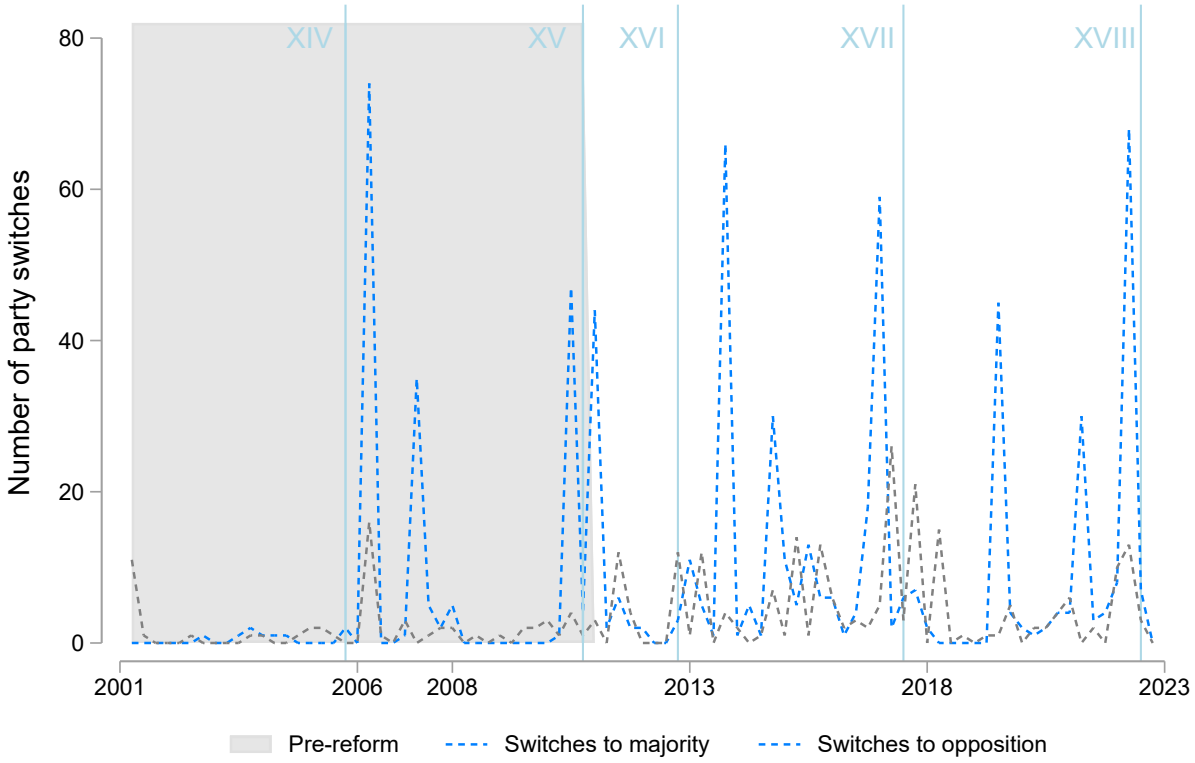
Notes: This figure shows the median age when entering parliament for newly-elected MPs in each legislature.

Figure D15: Pre-parliament income variation across legislatures controlling for age



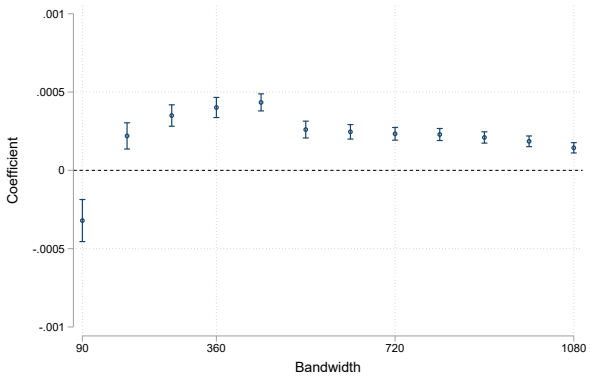
Notes: This figure shows the estimates for the coefficients λ_j and their 95 percent confidence interval in the regression $w_{ij} = \alpha_0 + \alpha_1 age_{ij} + \alpha_2 age_{ij}^2 + \sum_{j \neq XV} \lambda_j legislature_j + \epsilon_{ij}$.
w_{ij} is the pre-parliament wage of MP i elected for the first time in legislature j. age_{ij} is the age of MP i elected for the first time in legislature j when entering parliament. $legislature_j$ is a fixed effect for legislature j. ϵ_{ij} is the error term.

Figure D16: Party switches over time

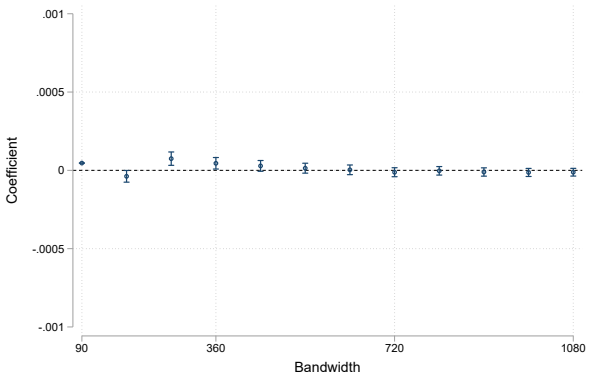


Notes: The figure shows the number of MPs' switches to majority parties (blue) and opposition parties (gray) in each quarter of legislature XIV-XVIII. The light blue lines are placed 4.5 years after the beginning of each legislature. The pre-reform period (gray area) represents the period up to 4.5 years after the beginning of last legislature before the introduction of the minimum tenure requirement (XV).

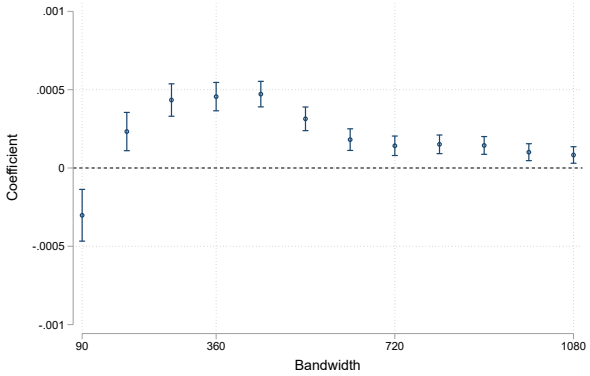
Figure D17: Bandwidth sensitivity, party switches



(a) Switches to majority



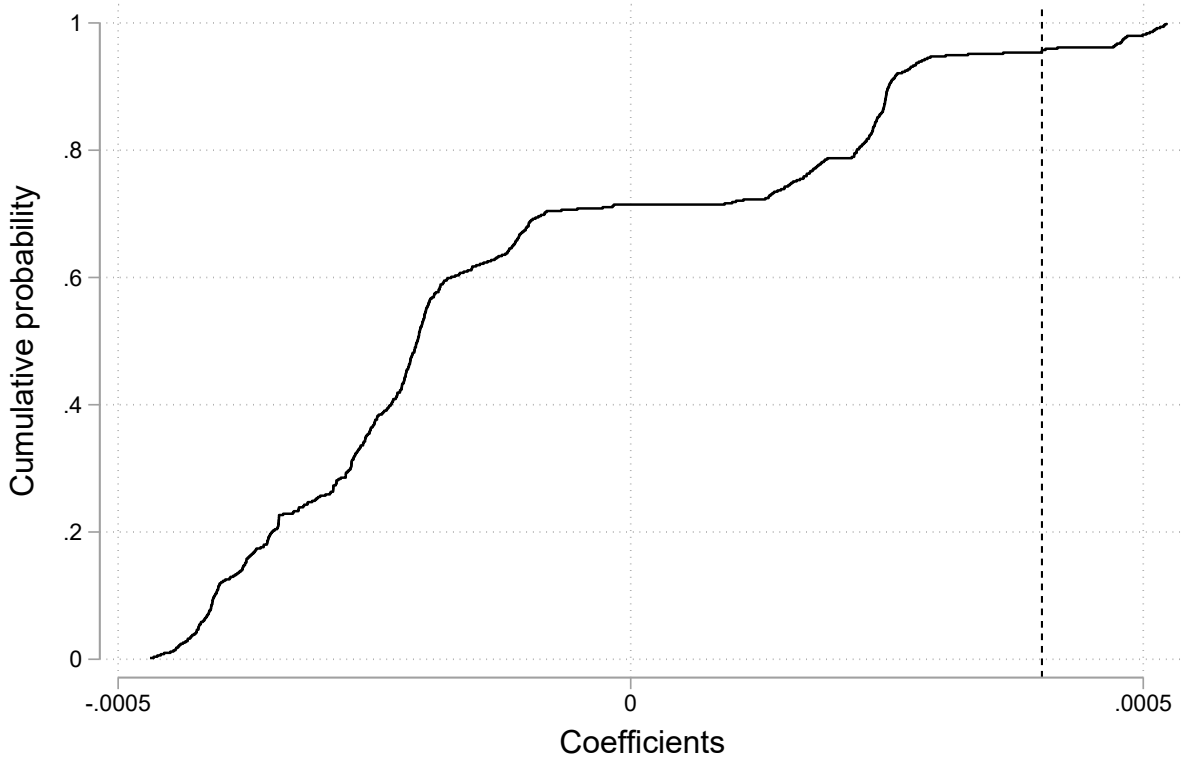
(b) Switches to opposition



(c) All switches

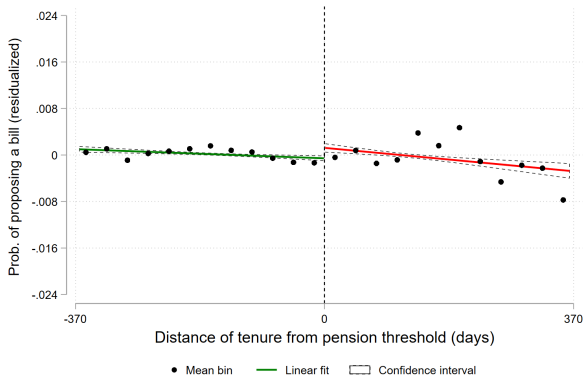
Notes: The figure shows the point estimate and the 95 percent confidence interval of the difference-in-discontinuities coefficients estimated within different bandwidths, from three months up to three years around the threshold. For the estimates in this figure, we use standard errors clustered at MP level. The dependent variable is a daily indicator for switching affiliation to majority (a), opposition (b) and all parties (c). The horizontal axis shows the number of tenure days from the 4.5-year-cutoff in each side of the bandwidth.

Figure D18: Placebo estimates, switches to majority parties

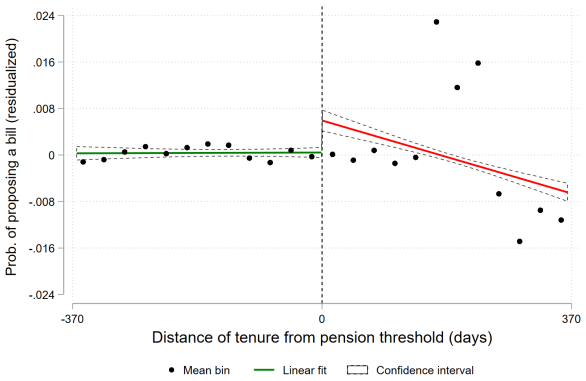


Notes: This figure shows the cumulative distribution of difference-in-discontinuities estimates on the daily probability of switching to a majority party, from placebo local linear regressions in which the cutoff is set in different parts of the tenure distribution. Estimates are computed using the regression in Equation (4) within a 1-year bandwidth. Cutoffs are located at every day from 4 years and 8 months to 5 years and 4 months, in order to stay sufficiently away from the policy thresholds of 3.5, 4.5 and 5.5 years at which the severance payment, the pension age and the pension payment change discontinuously. The vertical dashed line shows the coefficient estimated using the true 4.5-year tenure threshold.

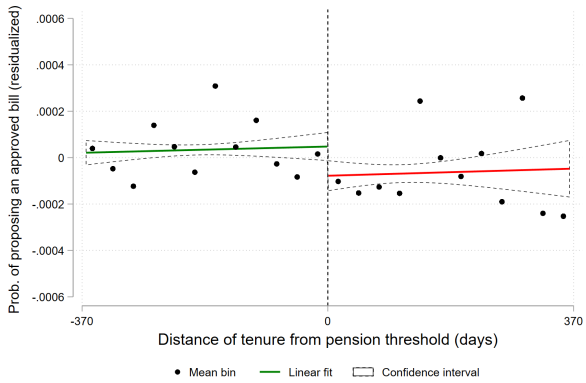
Figure D19: Legislative bill proposals a function of tenure, post- and pre-treatment



(a) Bill proposals, post-treatment



(b) Bill proposals, pre-treatment

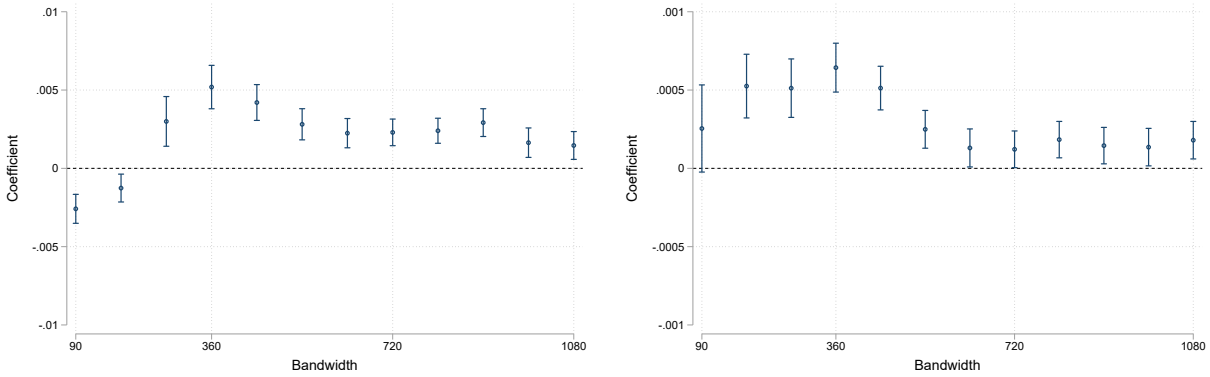


(c) Approved bill proposals, post-treatment

(d) Approved bill proposals, pre-treatment

Notes: These figures show the effect of the parliamentary tenure distance from the 4.5 year-cutoff on the MP's daily probabilities of proposing a bill and proposing a bill that is eventually approved. The circles are the average residualized outcome on either side of the threshold. The solid and dashed lines represent the predicted values and the 95-percent confidence intervals of a local linear regression of the residualized outcome on days of tenure centered at the cutoff. The bandwidth includes observations within one year from the 4.5 year-cutoff.

Figure D20: Bandwidth sensitivity, legislative bills

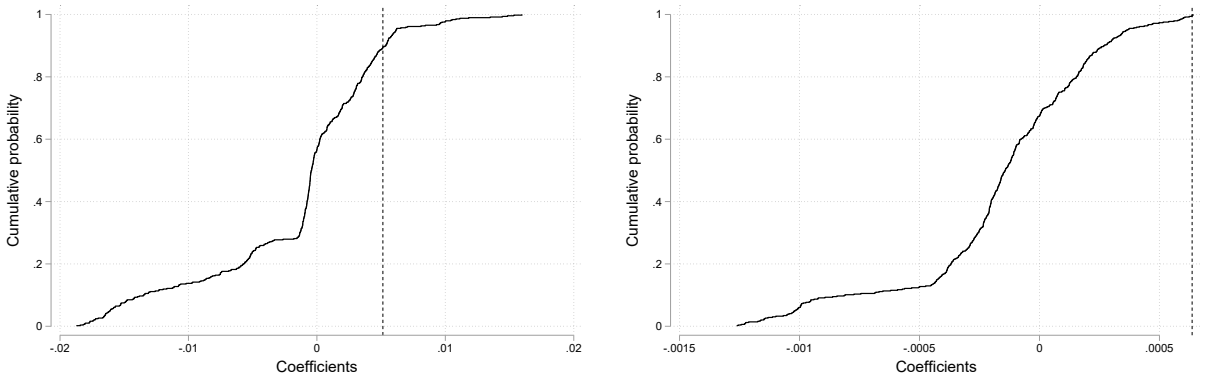


(a) Bills proposed

(b) Bills proposed and approved

Notes: The figure shows the point estimate and the 95 percent confidence interval of the difference-in-discontinuities coefficients estimated within different bandwidths, from three months up to three years around the threshold. For the estimates in this figure, we use standard errors clustered at MP level. In panel (a), a daily indicator for proposing a bill is the dependent variable. In panel (b), a daily indicator for proposing a bill that is eventually approved is the dependent variable. The horizontal axis shows the number of tenure days from the 4.5-year-cutoff in each side of the bandwidth.

Figure D21: Placebo estimates, legislative bills



(a) Bills proposed

(b) Bills proposed and approved

Notes: This figure shows the cumulative distribution of difference-in-discontinuities estimates from placebo local linear regressions in which the cutoff is set in different parts of the tenure distribution. In panel (a), a daily indicator for proposing a bill is the dependent variable. In panel (b), a daily indicator for proposing a bill that is eventually approved is the dependent variable. Estimates are computed using the regression in Equation (4) within a 1-year bandwidth. Cutoffs are located at every day from 4 years and 8 months to 5 years and 4 months, in order to stay sufficiently away from the policy thresholds of 3.5, 4.5 and 5.5 years at which the severance payment, the pension age and the pension payment change discontinuously. The vertical dashed line shows the coefficient estimated using the true 4.5-year tenure threshold.