

The Impact of Electoral Rules on Political Particularism: Highlights from the Italian Chamber of Deputies

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Abstract

Candidate-centred electoral systems make it more convenient for politicians to cultivate a personal reputation. To develop personal followings, candidates provide goods and services to narrow segments of society in exchange for votes. While conventional wisdom in the literature of comparative electoral systems tells us there is a connection between candidate-centred electoral systems and political particularism, attempts to disclose a causal relationship are still rare. In this study, I employ regression-discontinuity design to analyse the causal mechanism linking electoral incentives to particularistic policymaking in the Italian political system. The analysis is performed on a newly generated dataset on the bill proposals of Italian individual members, covering the period from the 12th to the 14th legislative term. My findings show that the electoral system, per se, does not cause a higher propensity to serve parochial interests in national assemblies. A time-series cross-sectional analysis, as well as descriptive evidence, points to localness, incumbency advantage, and electoral competition as additional contributing factors.

1. Introduction

A broad strand of the literature on electoral incentives and legislative behaviour has proposed that the electoral system can significantly influence the willingness of elected representatives to engage in particularistic policymaking. Some electoral systems make it highly convenient for candidates to cultivate a personal reputation. The construction of a personal vote in turn incentivizes political particularism: candidates provide goods and services to narrow segments of society in exchange for votes. Conversely, if party reputation matters more for a politician, policy making should respond more effectively to general interests (Carey & Shugart 1995; Lancaster 1986; Shugart 2001). Scholars have studied political particularism at length, concentrating on the possible negative externalities that it can produce, from a non-equitable or Pareto-inefficient distribution of resources (Alesina & Perotti 1995; Battaglini & Coate 2008; Ferejohn 1974; Pennock 1970), to the construction of a political system that is focused on the provision of particularistic benefits instead of offering a selection from among alternative policy choices (Carey & Shugart 1995; Cox 1987, Lancaster 1986).

While the literature offers extensive empirical evidence and a solid theoretical background for a connection between the electoral rule and the tendency of elected representatives to serve parochial interests, ‘acid tests’ of a causal linkage are still quite



rare. This is mainly due to the difficulty in controlling for potential confounding factors connected to (1) the institutional environment – a strong committee system, or a presidential system of government, and to (2) political parties' internal organization – access to the party ballot. Furthermore, most of the extant work on local representation proposes a definition and operationalization of political particularism that only includes geographical instances thereof, usually equating particularism with pork-barrel spending.

To fill these gaps, I propose a quasi-experimental study of Italian legislators' behaviour. Starting with the 12th legislative term and up to the 14th term, members of the Italian Parliament were elected with a mixed-member system, Legge Mattarella, in which 25% of the seats were allocated through party lists in 26 multiple-member districts, while 75% were filled by plurality rule in 475 single-member districts. On election day, voters received two ballots: one to express their preference for a candidate running in their single-member electoral district (SMDs), and the other to cast a vote for a party list running in their larger proportional district. The two tiers of the Italian mixed-member electoral system produced opposing incentives for candidates seeking re-election: to serve parochial interests if elected in an SMD, and to pursue a national agenda if elected in their party list (Carey & Shugart 1995; Shugart 2001). The peculiar features of this electoral system thus create suitable prerequisites for a quasi-experiment that compares the behaviour of MPs elected in the SMDs to that of MPs elected in the closed-list PR tier.

Results from an RDD quasi-experiment challenge conventional wisdom on the effect of electoral rules on elected representatives' willingness to serve parochial interests. In my analysis, I employ the definition and operationalization of political particularism developed in Decadri (2021), which includes geographical and sectoral instances of particularism. When considering both these kinds of political particularism, I find no evidence to support the hypothesis that a candidate-centred electoral rule causes an MP to serve the interests of narrow segments of society. A time-series cross-sectional analysis, as well as descriptive evidence, points to localness, incumbency advantage, and electoral competition as additional contributing factors.

2. Electoral incentives to cultivate a personal vote and political particularism: where do we stand?

In 1995, Carey and Shugart kick-started a new strand of research in the field of comparative electoral studies by analysing the effect on legislators' behaviour of electoral mechanisms to distribute seats to candidates. In addition to producing a universal model that accounts for the importance of personal reputation in different electoral systems, Carey & Shugart (1995) sketch some potential policy outcomes arising from politicians' greater attention to personal reputation with respect to party reputation. Pork barrel, and more broadly political particularism, is among the most relevant. Along the same lines, many scholars have studied the variation in particularistic outputs produced by different electoral rules. Most of them focus on pork-barrel, which is measured by the distribution of infrastructure expenditures (Ames 1995; Ashworth & Mesquita 2006; Golden & Picci 2008; Lizzeri & Persico 2001; Milesi-Ferretti et al. 2002). Others analyse law making, calling attention to the fact that MPs can conveniently exploit the legislative

process to favour parochial interests (Crisp et al. 2004; Gagliarducci et al. 2011; Gamm & Kousser 2010; Mejía-Acosta et al. 2006).

While in the literature there is much work on the effect of electoral incentives to cultivate a personal vote and political particularism, significant limitations remain, especially regarding the isolation of relevant confounding factors. First, most of the scholarship does not take into proper consideration potential confounding factors connected to the institutional setting. Scholars have demonstrated that presidential systems (Cain et al., 1984; Ashworth & Mesquita, 2006), strong committees in national assemblies, and strong local roots (Lancaster, 1986) increase politicians' propensity to serve their constituencies regardless of the operating electoral rule. Still, most of the existing studies are not able to concurrently control for these confounding factors. For example, Crisp et al. (2004) control for the different effect of presidential systems with respect to parliamentary systems by studying only presidential democracies, but they do not control for the effect of the remaining confounding factors – strong committees, localism, local government experience, strong interest groups.¹ Second, confounding factors related to intraparty regulations are not always taken into proper account. Yet, scholars have shown that the level of ballot control affects candidates' propensity to cultivate a personal vote regardless of the electoral rule (Bawn & Thies, 2003; Mejía-Acosta et al., 2006), and that ballot control, district magnitude, party-based voting, and vote pooling exert a joint effect on politicians' propensity to engage in distributive policymaking (Franchino & Mainenti, 2013). Third, while most studies consider only geographical instances of political particularism (e.g. Lizzeri & Persico 2001; Milesi-Ferretti et al. 2002), scholars have pointed out that legislators can be incentivized to serve parochial interests that do not coincide with those of the entire constituency, but instead are targeted to specific clientelistic groups inside the constituency (e.g. Eulau & Karps, 1977; Mayhew, 2004; Golden, 2003; Di Palma, 1977). However, examples of studies that analyse electoral incentives to serve this kind of parochial interest are still quite rare (with exceptions: e.g., Mejía-Acosta et al., 2006; Decadri, 2021).

To fill these gaps, I propose a quasi-experimental study of Italian legislators' behaviour, which employs regression-discontinuity design (RDD) to analyse the causal mechanism linking electoral incentives to particularistic policymaking. The objective is twofold: (1) to study the effect of the electoral system on legislators' propensity to engage in particularistic policymaking, in search of empirical evidence of a causal linkage; (2) to explore elected representatives' willingness to provide benefits that are not only intended for the whole constituency but are also targeted to clientelistic groups linked to specific sectors of the economy.

¹ Another example is Milesi-Ferretti et al. (2002), who select OECD and Latin American countries with different electoral systems and control for GDP and the number of parties in the system but do not isolate institutional factors like the difference between parliamentary and presidential systems.

3. The causal linkage between electoral rules and particularism: a study of Italy

3.1. Why Italy?

Why is a case study, based on the Italian political scenario, a valid option for studying the relationship between electoral incentives and political particularism? First, the choice of a one-country case study enables an individual-level analysis. The electoral connection is a phenomenon that works at the individual level, by linking a candidate in search of a vote to a constituent. An individual level analysis thus appears as the most suitable option to study such a relationship.

Second, a one-country case study makes it possible to control for confounding factors connected to the institutional framework.² Disentangling the effect of the electoral system from that of the institutional environment, when performing cross-country studies, could prove to be non-trivial. In this case, one-country studies can be more effective in addressing country-level endogeneity by keeping all the mentioned institutional factors fixed. More precisely, the Italian case offers the opportunity to analyse the behaviour of individuals who operate in the same institutional environment, but have been elected with a different electoral rule. Differences in the legislative behaviour of SMD and PR candidates should not be produced by the interaction of institutional factors with the effect of the electoral system.

Third, a one-country case study makes it possible to disentangle the effect of the electoral system *per se* from that of electoral regulations. While the electoral system concerns the rules that determine how votes are cast and converted into seats, 'electoral regulations' concern the right to vote in free, fair and transparent elections and, most importantly for our purpose, ease of access to the ballot (Gallagher & Mitchell 2005). Researchers have shown that ballot control and the electoral rule, strictly speaking, can have conflicting effects on legislators' willingness to engage in particularistic policymaking (Carey & Shugart, 1995; Franchino & Mainenti 2013; Shugart, 2001). This happens, for example, when we consider candidates who are running under a party-centred electoral rule but are also members of a party which grants access to its label through primaries (Bawn & Thies 2003; Mejía-Acosta et al. 2006). Here again, the choice of a one-country case study offers a good opportunity to simplify things. In the period considered, all relevant political parties in Italy had a highly-centralized nomination system (Ferrara 2004b; Verzichelli 2002). This allows the study of the electoral system's effect on particularistic policymaking, while keeping the level of ballot control fixed.

3.2. Electoral incentives and dual candidates' strategy

As previously explained, the two tiers of the Italian mixed-member electoral system in 1994-2001 produced opposing incentives for candidates seeking re-election: to serve parochial interests in the majoritarian tier, and to pursue a broader agenda in the

² Given, of course, that such an institutional framework does not significantly change in the period considered. In the case of Italy, there was no significant change in the form of government, the parliamentary committees' system, or electoral regulations in the period from the legislative 12th term up to the 14th term.

proportional tier. This set of tier-dependent incentives is further complicated by the fact that all MPs considered in this analysis are *dual candidates*. Dual candidates could run in one single-member district, while at the same time being inserted into one or more party-lists presented for the proportional districts. However, if elected in both tiers, they had to accept the majoritarian seat. On the one hand, a personalized campaign strategy would help them gain consensus in their single-member district. However, a personalized campaign strategy would not be particularly helpful for winning in the proportional districts. Given this set of conflicting incentives, I argue that candidates will be unlikely to have a ‘pure’, either personalized or party-centred, campaign strategy. Candidates will be more likely to have a ‘mixed’ strategy, whereby they campaign to earn personalized support in the single-member districts, while also advertising the party label in the proportional districts. This strategy should guarantee approval from the party leaders since candidates would still campaign for their party in the proportional districts. At the same time, a mixed campaign strategy would still help maximize a candidate’s chance of winning the single-member seat, since they could still cultivate a personal vote in their single-member district.

When campaigning, dual candidates concurrently operate in two different environments characterized by opposing incentives. Candidates will then be elected either in the proportional or in the majoritarian tier. I argue that, at this stage, their behaviour will no longer be influenced by the necessity to cope with the conflicting incentives typical of a dual candidacy. Instead, elected officials’ behaviour in parliament will be determined by their tier of election. Why should an MP switch from a ‘mixed strategy’ to a ‘pure tier-dependent strategy’, once elected? Because of re-election incentives. During the election campaign, dual candidates make different promises to electors in the proportional and in the single-member districts. In the proportional districts, running candidates commit themselves to pursuing the party agenda. In the single-member districts, candidates commit themselves to favouring the district’s parochial interests. If a candidate is elected in the majoritarian tier, voters will recognize the candidate as the representative of the district and will therefore expect them to maintain their electoral promise to favour the district’s interests. On the other hand, if an MP is elected in the proportional tier, voters will recognize the MP as a representative of the party, and they will therefore expect them to maintain their electoral promise to pursue the party agenda. To defend their credibility with the electorate and maximize their chances of being re-elected, MPs will need to act in accordance with their – tier-dependent – electoral promises.

Clearly, re-election incentives can produce a ‘candidates’ specialization’ only if, at large, candidates stick with their first-won tier of election. Previous analyses back this assumption, showing that once candidates have been assigned to a given electoral tier, they tend to persist there. Among the MPs re-elected in the next term, the probability of being re-elected in an SMD is about 87% for politicians elected in the majoritarian tier, versus 57% for politicians elected in the proportional (see Gagliarducci et al. 2011, p. 164).³ Instead, empirical evidence in support of ‘contamination effects’ reducing candidates’ propensity

³ This difference is significant at the 1% level.

to specialize relates primarily to MPs' uniform voting behaviour across tiers, and not to their propensity to engage in particularistic policymaking (Ferrara 2004b).⁴

Candidates' specialization should be further boosted by the absence of a direct seat linkage between the two tiers of election. Indeed, in the mixed-member system in force in Italy, differently from what happens in Germany or New Zealand, the total number of seats won by a party did not depend on its vote share in the PR tier. Instead, the system was a 'partially compensatory' one, which provided that for each SMD won by a candidate connected to a party list in the PR tier, the votes received by the best loser (plus one) were subtracted from the total list vote. Moreover, parties who decided to coordinate in the majoritarian tier were not required to also coalesce in the PR system. This electoral rule created the perfect conditions for the formation of two broad centre-left and centre-right coalitions in the SMDs tier, while in the PR tier parties forming each coalition run independent lists (Ferrara 2004a). Coordination in the SMDs, where single candidates run under a large coalition banner, and an independently run electoral race in the PR districts, where party lists campaign under their own party label, should further increase the diversification between the two tiers in the eyes of voters.

Still, we might wonder if such evidence holds for dual candidates, who constitute our study group. Indeed, for re-election incentives to produce a tier-dependent behaviour for dual candidates, they should not expect to get a dual candidacy in the very next electoral race. If dual candidates are expected to always get another dual candidacy from their party leadership, they would have fewer incentives to cultivate a personal vote and many more incentives to please their party leaders regardless of their actual tier of election. In fact, dual candidacies were usually granted as a form of compensatory system, to help candidates obtain a seat in parliament even if they lost in their single-member district. Again, the peculiarities of the Italian electoral system work in our favour. The number of dual candidacies was not sufficient to guarantee that every dual candidate losing in an SMD could still get elected in the proportional tier, let alone receive the 'dual-candidacy parachute' in the next electoral race (Gagliarducci et al., 2011). Persistence in the 'dual candidate status' is, in fact, low: only 27% of all dual candidates received a dual candidacy more than once, a percentage that drops to 17% if we exclude national leaders (Gagliarducci et al., 2011).⁵ Empirical evidence and theoretical reasoning thus suggest that MPs, whether they are dual candidates or not, should specialize in serving localities if they are elected in the majoritarian tier, and in representing their party label if they are elected in the proportional tier. Accordingly, I posit:

H1: Deputies elected in the majoritarian tier will engage in particularistic policymaking to a greater extent than deputies elected in the proportional tier.

⁴ While a uniform voting behaviour in parliament signals a uniformly high party loyalty, this does not exclude the possibility that PR legislators specialize in safeguarding broader interests, while SMD legislators specialize in serving localities through constituency service or proposed legislation.

⁵ They are also much more likely to run in non-competitive districts (see Gagliarducci et al., 2011) and thus are not part of our study group, which only considers candidates running in competitive districts.

4. Data and variables operationalization

4.1. A novel dataset on Italian individual members' bill proposals

To analyse particularistic law making in Italy, I employ a newly collected dataset on Italian individual members' bill proposals (IMBPs). I have automatically retrieved texts of bills in PDF format from the Italian Parliament website, and I have converted the scanned images into machine-encoded text using a set of Optical Character Recognition (OCR) scripts written in Python. The final corpus contains every bill proposed as a first signatory by all Italian MPs in the period from the 12th legislative term to the 14th term. The dataset also includes data on MPs' demographics – date and place of birth, district, and region of election, political party or list of election, parliamentary group, education, profession, age, and gender – which I have taken from their personal page on the Italian Parliament website. In the final dataset used for this analysis, every bill is categorized as either particularistic – geographically- or sector-targeted – or non-particularistic according to the dictionary-based classification proposed by Decadri (2021). Data on dual candidacies are from the historical archives retained by the Italian ministry of interior and from the study by Gagliarducci et al. (2011).⁶ The final sample consists of 1700 political candidates, of which 361 are *dual candidates*, elected in the 1994, 1996 and 2001 elections.

4.2. Why individual members' bill proposals?

Why use individual members' bill proposals and not actual legislation passed by parliament? An analysis of bills passed by parliament would not only include the effect of electoral rules on the willingness of parliamentarians to propose particularistic laws, but also the impact of potential confounding factors that influence the chances of a bill becoming law. Political party affiliation, committee leadership, and majority status in parliament can influence an MPs' legislative productivity, i.e. the proportion of bill proposals that actually become law (Anderson et al., 2003; Cox & Terry, 2008). On the contrary, analysing IMBPs allows us to dismiss the whole approval process that comes after the proposal has been presented in parliament. Accordingly, IMBPs should constitute a more direct and transparent measure of candidates' willingness to serve parochial interests.

Moreover, IMBPs fulfil many critical functions (Mattson, 1995). First, they have an instrumental function. MPs can influence the legislative process simply by getting individual bills to the floor, since these proposals become part of the ongoing bargaining process that takes place in national assemblies. Second, IMBPs constitute an effective electoral propaganda instrument, especially when they aim to favour the interests of a small clientele. In addition, MPs can communicate their opinion to their voters, and to the public at large, through legislative proposals, and thus IMBPs also fulfil an expressive function. In sum, IMBPs are relevant to the legislative and electoral process, even when they do not become law, and they constitute a clear and transparent proxy of candidates' propensity to serve parochial interests.

⁶ See also <https://elezionistorico.interno.gov.it/>.

4.3. Geographical and sectoral instances of particularistic policy-making

In my analysis, I follow closely the theoretical framework offered by Decadri (2021), thus considering two kinds of political particularism: geographic particularism and sectoral particularism. Geographic particularism is the act of distributing goods and services to a geographic entity, i.e., an MP's constituency. An example of geographic particularism would be an infrastructural intervention targeting the constituency. Sectoral particularism is the act of distributing goods and services to functional groups determined by specific economic sectors that find representation in a candidate's constituency. An example of sectoral particularism would be the distribution of subsidies to the tourism sector, or the institution of an award for the urban and architectural sector.

Still following Decadri's (2021) approach, I operationalize political particularism as an MP's act of serving parochial interests through ad hoc legislation (IMBPs). Geographical particularism is operationalized as a bill proposal that distributes goods and services to a candidate's constituency. An example of geographically-targeted legislation would be a bill that requires the construction of a bridge in a municipality that is part of a candidate's constituency. Sectoral particularism is operationalized as a bill that distributes goods and services to a whole sector of the economy, a professional category, or a company/firm active in that economic sector present in an MP's constituency. An example of sector-targeted legislation would be one that institutes an award to Sardinia's tourism sector.

To classify a bill as particularistic⁷ or non-particularistic, I employ the four new dictionaries of Italian political particularism constructed and validated by Decadri (2021). Geographically-targeted bills are those containing references to the distribution of a benefit intended for the MP's whole constituency, while sector-targeted bills are those containing references to the distribution of benefits for a sector of the economy, professional category, or enterprise/firm present in the MP's constituency. Non-particularistic bills are those which contain no reference to the distribution of a benefit to an MP's constituency or to a sector of the economy. Following the typical approach of Italian politics scholars (Gagliarducci et al. 2011, Marangoni & Tronconi 2011), I use an MP's region of election as a proxy for their constituency. In Italy, the size of constituencies varies over time and throughout the country, but their size is never larger than that of a region. The use of the region of election as a proxy for the constituency thus allows a comparison of legislators' behaviour over time and space. For each MP, their propensity to engage in particularistic policymaking is measured by the total number of particularistic bills they propose. The variable called *geo* measures the number of geographic-based bills proposed by an MP, while *sector* measures the number of sector-targeted bills.

5. Methodology

5.1. Regression discontinuity design: an overview

To estimate the electoral system's effect on legislators' willingness to serve parochial interests, I employ a quasi-experiment based on regression discontinuity design technique (RDD). Social scientists have successfully used RDD to study the socio-economic impact of policy interventions assigned to some geographic units but not to others, or to analyse

⁷ Geographically- or sector-targeted.

the effect that winning office in close elections has on legislators' behaviour (e.g. Brollo & Nannicini 2012; Brollo et al. 2013; Lee 2008).⁸ In all of these circumstances, a political process assigns individuals to one or the other category of an independent variable, based on whether they are above or below a certain threshold on some co-variate. All these analyses take advantage of the fact that the assignment to one or the other category of an independent is as good as random for individuals right above or right below the threshold. When that is the case, RDD can be used to obtain analytic leverage on the impact of the treatment (independent) variable on the dependent variable (Dunning 2012).

5.2. Statistical framework

As previously illustrated, to elect parliamentarians in the 12th-14th legislative terms, Italy employed a mixed-member system where a portion of the candidates could run in both tiers. Dual candidates could compete for a seat in one single-member district and be inserted in one or more of their party's lists running in the PR districts. However, if elected in both tiers, they had to accept the majoritarian seat. Accordingly, all the dual candidates elected in the proportional tier are those who lost in their single-member district, while all the dual candidates elected in the majoritarian tier are those who won in their single-member district. The peculiar characteristics of the Italian mixed-member system can be used to estimate the causal effect of the treatment 'being elected in the majoritarian tier', as opposed to 'being elected in the proportional tier', for near-winners and near-losers (for a similar approach see Brollo & Nannicini 2012; Gagliarducci et al. 2011).⁹

In general, candidates who gained a very large share of votes should be different from candidates who gained a very narrow share of votes. For example, they could have been able to win by a large margin because they are well known in the district, or differently, because they are national leaders. Consequently, their behaviour in parliament could be mainly determined by their idiosyncratic characteristics and preferences, rather than by the electoral system. Candidates with strong local ties could be more willing to initiate particularistic legislation, irrespective of their tier of election. National leaders should have a higher probability of receiving government appointments, which would leave them with less time to draw up bill proposals; or they could simply be less willing to propose particularistic legislation because they need to show their electorate that they are pursuing the party agenda. Conversely, on average, candidates who barely won will be very similar to candidates who barely lost. Consequently, given the role that random factors play in determining electoral outcomes, their chance of being elected in the majoritarian or in the proportional tier could be considered as good as random.

Near-winners and near-losers are candidates running in close elections. In these electoral races, the difference in the percentage of votes won by the candidate who secures the SMD seat, and the next best candidate should be very narrow. But what percentage exactly constitutes a narrow margin of victory? Previous studies have proposed values ranging from 5% to 15% (Eggers & Hainmueller 2009; Gagliarducci et al. 2011; Titunik 2009). Of course, the closeness of a particular electoral race will also depend on the electoral context. An electoral race won by a 10% margin could be considered

⁸ For further examples, see Dunning (2012), p. 71.

⁹ For a general discussion on the use of RDD analysis to study close elections see also Dunning (2012), p. 77-79.

as a close victory in an electoral context where the mean winning margin is higher than that value, but in a different context it could be in line with the average. In the case considered here, the average margin of victory is 13%, with a median value of 10%. I would thus consider close elections all those electoral races where the margin of victory is lower or equal to 10%.

When choosing the scope of the study group, particular attention should be paid to the trade-off between the gain in precision from choosing a wider study group, and the risk of producing biased results when including units that are not valid counterfactuals for each other (Dunning 2012). With a larger study group, the treatment effect estimator will have a lower variance, hence the gain in precision. At the same time, including units that are located too far from the key discontinuity threshold could produce biased results. As a rule of thumb, researchers usually perform analyses that consider different choices of bandwidths (Dunning, 2012; Valentim et al., 2021). For strong quasi-experiments, the results should be consistent across smaller and larger study groups. Moreover, in cases where the number of observations could potentially be too small to detect an effect, showing results for larger study groups should address potential concerns that the results are simply an artefact of the data. In my analysis, I will thus provide results for four different bandwidths – 13%, 10%, 5% and 3% – even though close elections are only those included in the 3%-10% bandwidths.

Treatment assignment for dual candidates can be specified as:

$$T(MV_c) = \begin{cases} 1, & \text{if } MV_c \geq 0 \\ 0, & \text{if } MV_c < 0 \end{cases} \quad (1)$$

where MV_c is the margin of victory, i.e. the difference between the votes earned by candidate c , and the votes earned by the next-best candidate. The margin of victory for candidates elected in the proportional tier will be lower than 0, while the margin of victory for candidates elected in the majoritarian tier will be greater than 0. In accordance with Equation 1, members elected in the majoritarian tier constitute the treatment group, while members elected in the proportional tier constitute the control group. Moreover, we can assume that each candidate's chance of winning does not depend exclusively on their personal characteristics, but instead includes some random component, such that the probability of winning for a candidate c is never equal to 1 or to 0. More precisely, for dual candidates running in close election, the assignment to the proportional or majoritarian tier is as good as random.

Given these assumptions, we can estimate the effect that being elected in the majoritarian tier, with respect to being elected in the proportional one, has on candidates' propensity to propose particularistic legislation. Said effect is defined as the average treatment effect, AT , and it is calculated as the difference between the average number of particularistic bills proposed by dual candidates elected in the majoritarian tier, and the average number of particularistic bills proposed by candidates elected in the proportional tier:

$$AT = \bar{T} - \bar{C}$$

where \bar{T} is the average value of the potential outcomes under the treatment, while \bar{C} is the average value of the potential outcomes for all the candidates in the control group.

6. Analysis

6.1. Electoral incentives in the majoritarian and in the proportional tier

Following best practices in the literature (Dunning 2012; Valentim et al., 2021), I first propose an RDD analysis of the whole population under study. This preliminary evidence serves to demonstrate the presence of a strong, albeit correlational, link between the two phenomena under scrutiny. The correlational link between the dependent and the independent variable then constitutes the starting point on which the subsequent causal-analysis can be built. I thus provide empirical evidence on the different set of incentives relative to the two tiers of election for the whole sample of elected representatives – dual and non-dual candidates – elected in the 1994, 1996 and 2001 elections.

Table 1. RDD Analysis—full sample

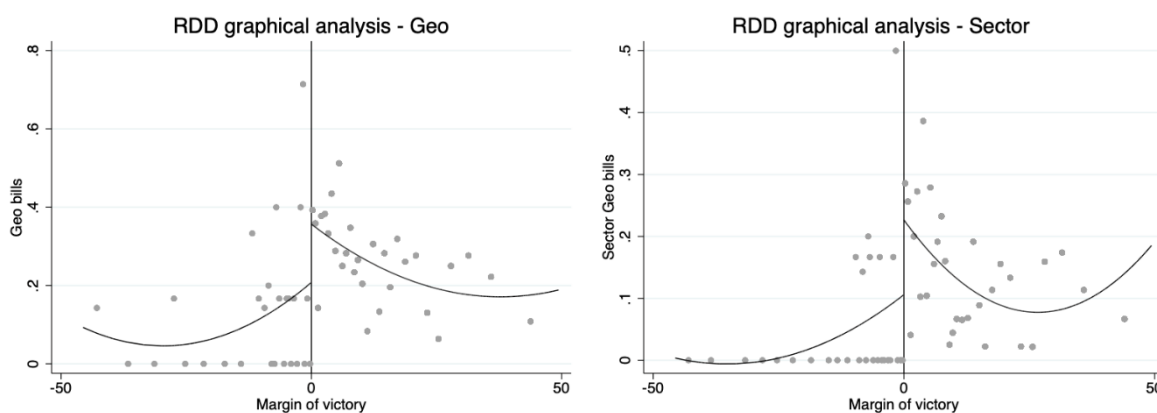
	Jump at the threshold
Geo	0.142** (0.0257)
Sector	0.0744** (0.0171)
Observations	1869
Majoritarian	1392
Proportional	447

Notes: standard errors in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. The table reports t-tests that compare the average number of geographically-targeted (geo) and sector-targeted bills (sector) proposed by MPs elected in the majoritarian tier with those proposed by MPs elected in the proportional tier.

Table 1 shows the results of t-tests comparing the average number of particularistic bills proposed by MPs elected in the majoritarian tier to the average number of particularistic bills proposed by MPs elected in the proportional tier. T-tests show a statistically significant difference: on average, representatives elected in the majoritarian tier propose more particularistic bills. Figure 1 reports RDD plots for geographically- (panel a) and sector-targeted (panel b) legislation. The RDD plots present two summaries: (i) a global polynomial fit,¹⁰ represented by the black solid line, and (ii) local sample means, represented by the grey dots. The graphs show a positive discontinuity at the threshold, consistent across higher-order polynomials (see Appendix A), which corroborates the evidence provided by the t-tests. Majoritarian MPs appear to be more likely to engage in particularistic policymaking. In addition, previous studies applying an RDD analysis to a similar sample of Italian MPs found analogous results (Gagliarducci et al. 2011).

¹⁰ The polynomial fit is a smooth approximation of the unknown regression function based on a second-order polynomial regression. The local sample means are non-smooth approximations of the unknown local regression functions (see Cattaneo et al. 2018, p. 20).

Figure 1. RDD Analysis—full sample



Notes: the figure shows RDD plots for geographic (panel a) and sector-targeted (panel b) legislation. The dots represent local sample means of the number of particularistic bills proposed by each MP, while the solid line is a second-order polynomial fit. Bins are non-overlapping partitions all containing the same number of observations, i.e. quantile-spaced bins. The total number of bins has been determined using the mimicking variance method.

Can this empirical evidence be considered enough to support the validity of H1? Hardly. This preliminary analysis, like previous contributions,¹¹ does not consider exclusively MPs who are valid counterfactuals of each other. The observed differences could be produced by MPs’ idiosyncratic characteristics that increase their chances of running, and thus being elected, in one of the two tiers. That is why a more compelling analysis should only consider MPs who are valid counterfactuals. To this aim, the next section proposes an RDD analysis which includes only dual-near winners and dual-near losers.

6.2. How plausible is ‘as-if random’? Information, incentives, and abilities

In line with best practices in the literature (Dunning 2012; Valentim et al., 2021), I present qualitative and quantitative evidence in support of the as-if-random condition that justifies the choice of an RDD framework. The most common qualitative diagnostics discuss the *information*, *incentives*, and *abilities* of the units under study. First, we should ask ourselves if the units have information about the fact that they will receive a certain treatment, or not. Second, we should inquire if the units have an incentive to self-select into the control or the treatment group, or if other actors have an incentive to allocate units to either of the two groups. Finally, it is important to understand if the units in the study group can self-select into the control or treatment group, or if other relevant actors can allocate units to either of the two groups. The three conditions of information, incentives, and abilities should not be considered as mere elements of a checklist to be completed, whereby satisfaction of each criterion is necessary for the as-if random condition to hold. Qualitative evaluation of the as-if random condition should instead be

¹¹ Gagliarducci et al. (2011) propose an RDD analysis that should include only MPs who are valid counterfactuals. However, while the authors propose valid thresholds in order to select near-winners and near-losers in their analysis, they include in their study group both dual and non-dual candidates. This hinders the RDD design’s ability to effectively control for MPs’ idiosyncratic characteristics.

based on a case-by-case analysis, which provides a critical examination of the conditions under which the treatment is administered (Dunning, 2012).

As explained in Section 4.2, candidates with strong local support could have an incentive to self-select in the majoritarian tier. Similarly, party leaders could have an incentive to allocate candidates with strong local ties in the majoritarian tier. Nevertheless, the fundamental question is whether they have the ability and information to do so. Neither candidates nor party leaders know for certain who will be elected in the majoritarian tier, as they cannot know for certain who will win in their SMD. Furthermore, when a candidate wins both in his single-member district and in one or more PR districts, he must accept the majoritarian seat. This means that neither the candidates nor the party leaders can allocate units to the control or to the treatment group. To conclude, candidates' *incentives* and *abilities*, as well as actors' *information* on the electoral outcome, suggest that it is plausible to retain the assignment of candidates to either tier of election as good as random.

6.3. How plausible is 'as-if random'? Balance and placebo tests

As a complement to qualitative diagnostics, I perform balance and placebo tests to provide further evidence in support of the as-if random condition (Dunning 2012).¹² Balance tests are used to evaluate if there is a systematic difference in relevant 'pre-treatment covariates' across the treatment and control group. Pre-treatment covariates are all those factors whose value has been determined before the treatment takes place. If the as-if random condition holds, assignment to the control and treatment group should be statistically independent of such pre-treatment covariates. Balance tests consist in difference of mean tests that compare the average value of pre-treatment covariates across the treatment and control group, or in z-tests that investigate for the presence of a significantly different proportion of individuals with certain characteristics across the treatment and control group.

The balance tests that I propose include thirteen covariates that convey information on candidates' demographics, political experience, and district of election (see Table 2). Of the thirteen pre-treatment variables considered, only the dummy variable physician has a statistically significant coefficient. Apart from this single imbalance, in general the tests show that candidates' assignment to either the control or the treatment group seems to be independent of pre-treatment covariates.¹³

¹² In general, researchers should also perform conditional density tests to provide empirical evidence against units' ability to sort at the threshold. However, in the case of RDD analyses that consider near-winners and near-losers of elections, conditional density tests will be automatically satisfied (see Dunning, 2012).

¹³ See also Dunning 2012, p. 241 on balance tests, and acceptable imbalances. One imbalanced variable out of 20 should be the target, when demonstrating that pre-treatment variables are balanced in the vicinity of the treatment threshold. Unfortunately, there are no other pre-treatment covariates available, that I know of, to perform balance tests. Still, one imbalanced factor over thirteen seems to suggest that there should not be consistent imbalances around the threshold able to undermine the validity of the as-if-random condition.

Table 2. Balance tests

	Jump at the threshold
Local	-0.00646 (0.0341)
Previous local appointment	0.0560 (0.0665)
Clerk	0.0125 (0.0200)
Entrepreneur	0.0359 (0.0317)
Lawyer	0.000631 (0.0426)
Physician	0.0619* (0.0309)
Self-employed	-0.00646 (0.0341)
Teacher	0.0662* (0.0369)
Female	-0.0653* (0.0375)
Graduate	0.0999* (0.0580)
South	-0.0159 (0.0634)
North	0.0104 (0.0654)
Age	1.972 (1.222)
Observations	226
Majoritarian	122
Proportional	104

Notes: standard errors in parentheses. * $p < 0.10$, + $p < 0.05$, ** $p < 0.01$. The table reports balance tests for pre-treatment covariates. Local is a dummy variable that indicates if an MP has been elected in the same region where they reside. Previous local appointment is a dummy that indicates if an MP had previous local government experience – mayor, president of a regional government. Clerk, Entrepreneur, Lawyer, Physician, Self-employed and Teacher are dummy variables for a candidate’s profession (from Gagliarducci et al., 2011). Female is a dummy for gender. Graduate is a dummy for graduate level education. South (North) is a dummy variable that indicates if a candidate ran in a southern (northern) district. Age measures the age of candidates in years.

Placebo tests check for the presence of apparent causal effects at points different from the key discontinuity threshold (see Dunning 2012). RDD is based on the idea that relevant differences in the observed outcomes, for units in the treatment and control group, should be induced only by the treatment itself. Accordingly, units in the study group should not display large differences in observed outcomes at points other than the discontinuity determining treatment/control assignment. Placebo tests consist of difference of means tests at ‘fake thresholds’, i.e., at points different from the relevant threshold. The results of placebo tests are reported in Table 3. The tests show there are no statistically significant discontinuities in the propensity to propose particularistic legislation for units close to the two ‘fake thresholds’ considered – median to the left, and median to the right of the discontinuity threshold.

Table 3. Placebo tests

	50 th left Jump at the threshold	50 th right Jump at the threshold
Geo	-0.0837 (0.101)	-0.0164 (0.103)
Sector	-0.0326 (0.0586)	-0.0656 (0.0752)
Observations	104	122
Treatment	50	54
Control	61	61

Notes: standard errors in parentheses. + p<0.10, * p<0.05, ** p<0.01. The table reports placebo tests that compare the average number of particularistic bills proposed by dual MPs to the left and to the right of two ‘fake thresholds’. Such thresholds are represented by the empirical median of observations to the left and to the right of the regression-discontinuity cut-off – 50th percentile to the left and 50th percentile to the right of 0.

The empirical evidence provided by balance and placebo tests thus gives further support to the qualitative analysis of relevant actors’ incentives, abilities, and information. To conclude, a substantive analysis of the Italian electoral context, as well as the evidence provided by balance and placebo tests, suggests that the peculiar characteristics of the Italian mixed-member system allow a quasi-experimental study of the causal mechanism linking electoral incentives to legislators’ willingness to engage in particularistic policymaking.

6.4. Results

Building on the statistical framework proposed in Section 4.1 and on the qualitative and quantitative evidence provided in Sections 5.2 and 5.3, I perform an RDD analysis to evaluate the causal effect of the treatment ‘being elected in the majoritarian tier’, as opposed to ‘being elected in the proportional tier’, for dual candidates running in the 1994, 1996 and 2001 elections. To estimate the average causal effect (AVE), I perform a difference of means test for geographically- and sector-targeted legislation (see Table 4). As explained in Section 4.2, I present results for four different bandwidths. The t-tests fail to detect any significant difference between the mean number of particularistic bills proposed in the treatment groups and the mean number of particularistic bills proposed in the control group.

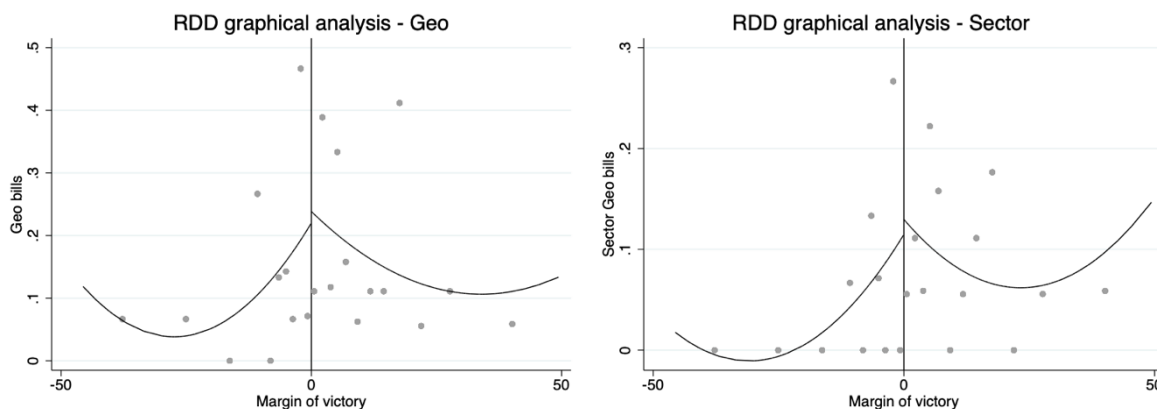
Table 4. RDD Analysis—study group

	Jump at the threshold			
	13% bandwidth	10% bandwidth	5% bandwidth	3% bandwidth
Geo	0.0251 (0.0729)	0.0497 (0.0787)	-0.0107 (0.112)	-0.000922 (0.176)
Sector	0.0214 (0.0490)	0.0188 (0.0555)	-0.0224 (0.0637)	-0.0433 (0.0986)
Observations	226	196	111	66
Majoritarian	122	104	57	35
Proportional	104	92	54	31

Notes: standard errors in parentheses. + p<0.10, * p<0.05, ** p<0.01. The table reports the results of t-tests that compare the average number of particularistic bills proposed by dual MPs elected in the majoritarian tier (treatment group), with the average number of particularistic bills proposed by dual MPs elected in the proportional tier (control group). Results are reported for all the relevant bandwidths – 13%, 10%, 5%, 2%.

Moreover, I report RDD plots that fit a second-order polynomial to local sample means, to investigate the presence of a discontinuity at the threshold (see Figure 2). The graphs corroborate the results of the t-tests. The discontinuity shown, much smaller than the one observed in Figure 1, is almost imperceptible. This graphical evidence is robust to the choice of higher-order polynomials (see Appendix B).

Figure 2. RDD Analysis—study group



Notes: the figure shows RDD plots for geographic (panel a) and sector-targeted (panel b) legislation. The dots represent local sample means of the number of particularistic bills proposed by each MP, while the solid line is a second-order polynomial fit. Bins are non-overlapping partitions all containing the same number of observations, i.e., quantile-spaced bins. The total number of bins has been determined using the mimicking variance method.

These results are very different from those obtained in Section 5.1, and from those proposed by previous studies that did not restrict their analysis to dual MPs (Gagliarducci et al. 2011). When we consider MPs who are valid counterfactuals of each other, but have been elected under different electoral rules, we are not able to find any relevant difference in their propensity to propose particularistic legislation. Robustness checks employing local-linear regressions (Appendix C), and separate analyses for each of the three legislatures (Appendix D), further corroborate the evidence provided in Table 4 and Figure 2. This suggests that the relationship between the electoral system and candidates’ propensity to serve parochial interests could be correlational rather than causal. Given the rationale of the analysis so far performed, it is not feasible to further investigate the role of confounding factors connected to MPs’ personal characteristics. RDD quasi-experiments are used exactly to control for the action of observable and unobservable confounders. In the next section, I therefore propose robustness checks to 1) enhance the credibility of the RDD findings, 2) offer further hints as to the action of MPs’ idiosyncratic characteristics.

6.5. Alternative explanations

How can we reconcile the evidence found in this study with conventional wisdom on the effect of electoral rules on elected representatives’ willingness to serve parochial interests? The culprits behind this contradictory evidence could be MPs’ personal characteristics connected to their political experience or to the strength of their local connections. Incumbents and locals usually have greater familiarity with the

constituency's interests and are more willing to serve them (Marangoni & Tronconi 2011). At the same time, MPs who are party leaders or had appointments in party at national level usually want to safeguard their national profile, and thus are less willing to propose particularistic legislation (Gagliarducci et al. 2011, Marangoni & Tronconi 2011). Table 5 shows that locals and incumbents are more likely to be elected in the majoritarian tier, while national politicians and party leaders are more likely to be elected through party lists (although differences are not always statistically significant). These idiosyncratic characteristics could be relevant factors responsible for the different propensity to favour parochial interests that we observe across the two tiers of election but that disappear once we compare counterfactual MPs.

Table 5. Alternative explanations – descriptive evidence

	Proportion in PR tier – Proportion in SMDs tier
National	0.0375 (1.72)
Incumbent	-0.0391 (-1.52)
Local	-0.0446*** (-3.44)
Leader	0.00306 (0.43)
Observations	1869
Proportional	477
Majoritarian	1392

Notes: standard errors in parentheses. + p<0.10, * p<0.05, ** p<0.01. The table reports two-sample test of proportions investigating the presence of a different proportion of party leaders, candidates running inside their region of residence, national politicians and incumbents.

To get a better sense of the different factors involved, I propose a time-series cross-sectional analysis that follows the whole sample of MPs throughout the 12th, 13th and 14th legislative terms. Clearly, not all the MPs were able to get elected in every subsequent electoral race, which means we are dealing with an unbalanced panel where attrition rate is influenced by MPs' observable and unobservable abilities that influence their probability of being re-elected. Evidence derived from such an analysis must therefore be taken with caution and should in no way be interpreted as causal. Still, following MPs throughout their career can provide useful hints as to what could be the observable factors influencing a candidate's propensity to serve particularistic interests. Table 6 shows the results of a panel fixed-effect model that inspects the effect of the electoral rule, electoral competition, incumbency, leadership, localness and electoral geography. In line with the RDD results, a model with individual fixed-effects fails to find a statistically significant impact of the electoral rule. As expected, incumbents propose particularistic legislation to a greater extent, although the difference with non-incumbents is statistically significant only for geographically-targeted legislation. Localness, leadership, and electoral geography, instead, do not seem to have a significant effect. Interestingly, electoral competition seems to diminish candidates' propensity to serve parochial interests.

This could be explained by the desire of the most at-risk candidates to raise their national profile and to please their party's leadership, in order to obtain a more secure candidature in the next elections.

Table 6. Alternative explanations

	Geo	Sector
Majoritarian	0.0273 (0.139)	0.0100 (0.0908)
Close elections	-0.298* (0.133)	-0.165+ (0.0866)
Incumbent	0.215* (0.0874)	0.0625 (0.0569)
Leader	0.163 (0.468)	0.0718 (0.305)
Local	-0.0873 (0.284)	0.197 (0.185)
National	-0.190 (0.172)	-0.0508 (0.112)
North-East districts	0.0741 (0.258)	0.0925 (0.168)
South districts	-0.0418 (0.499)	0.0106 (0.325)
Island districts	0.164 (0.414)	-0.0587 (0.270)
Constant	0.318 (0.236)	0.197 (0.154)
Observations	1651	1651

Notes: standard errors in parentheses. * $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. The table reports the results of a time-series cross-sectional analysis with individuals' fixed-effects. The analysis includes the whole sample of political candidates elected in the 12th, 13th and 14th. *Close elections* is a dummy for highly-competitive districts, i.e., those where the margin of victory was lower than or equal to 10%.

7. Conclusions

A vast literature on legislative behaviour shows that candidate-centred electoral systems should increase elected representatives' propensity to serve parochial interests. While previous studies offer extensive empirical evidence and a solid theoretical background for a connection between the electoral rule and the elected representatives' tendency to engage in particularistic policymaking, attempts to disclose a causal relationship are still rare. This is mainly due to the difficulty in simultaneously controlling for determinants connected to the institutional environment, electoral regulations at large, and candidates' self-selection. This study has proposed a quasi-experiment as a convenient solution to controlling for confounding factors and increasing our understanding of the causal mechanism linking the electoral system to political particularism.

Notwithstanding the relevance of electoral rules in influencing elected officials' behaviour, my findings show that the electoral system, *per se*, does not seem to cause a

higher propensity to serve parochial interests in national assemblies. When comparing the propensity to engage in the particularistic policymaking of deputies who are valid counterfactuals for each other, but have been elected under different electoral rules, t-tests, RDD plots and local-linear regressions fail to find significant differences. Still, deputies elected in the majoritarian tier do propose more geographic and sector-targeted legislation than MPs elected in the proportional tier (see Table 1 and Figure 1). These results call for further explanation.

Such counterintuitive evidence could be produced by MPs' observed or unobserved – time-fixed – personal characteristics that influence their likelihood of being elected in the majoritarian tier, as well as their willingness to engage in particularistic law-making. For instance, legislators with strong personal ties to some constituents, or that are part of specific professional categories, could be more incentivized to favour such individuals, or professional categories, at the expense of citizens at large. Similarly, cultural factors connected to *familism* and social capital could be relevant in determining politicians' propensity to engage in particularistic policy-making (Putnam et al., 1993). Indeed, a panel analysis with individual fixed-effects – which removes the effect of such idiosyncratic characteristics – fails to find a significant impact of the electoral rule. This evidence is consistent with the quasi-experiment findings: once we try and remove the impact of politicians' idiosyncratic characteristics, the electoral system of election does not seem to produce relevant incentives to engage in particularistic law-making. This makes us even more suspicious that the effect of the electoral system on clientelistic and particularistic behaviours is merely correlational, given the confounding effect of observable and unobservable factors. As for the unobservable factors, clearly not much can be said. My analysis though, offers interesting hints as to the role of some observable factors: incumbency advantage and electoral competition. Results show that incumbents, who are most likely to be elected in the SMDs districts, are more willing to serve parochial interests. This suggests that candidates' ties with their own district develop and reinforce themselves overtime, increasing the candidates' ability and willingness to please their constituency regardless of the electoral rule. Furthermore, politicians running in highly competitive districts, who are more likely to lose in highly competitive SMDs and thus (if they are) be elected in the party lists, are less willing to propose particularistic legislation. Such behaviour could be incentivized by the candidates' desire to please their party leadership by boosting their national profile, to get a safer candidacy in the next electoral race.

Another relevant factor to be considered is ballot control. Since in my analysis I compare MPs who are all subject to similar electoral regulations, I cannot show empirical evidence of an effect of ballot control. Still, previous studies have shown that 'electoral institutions'¹⁴ have a relevant impact on distributive policymaking only when they boost each other in inhibiting the incentives to cultivate a personal vote (see Franchino & Mainenti 2013, p. 511). This suggests that the effect of electoral rules could become relevant only if accompanied by a reinforcing effect of congruent electoral regulations. The empirical evidence of a non-significant difference in legislative behaviour between MPs elected in different tiers could thus be produced by the dampening effect of a strong ballot control on the propensity of majoritarian MPs to serve parochial interests.

¹⁴ Understood as the combination of electoral rules and electoral regulation.

In conclusion, more compelling evidence should be provided to deliver a final verdict on the effect of electoral systems on political particularism. Since my analysis aimed to control for MPs' idiosyncratic characteristics and electoral regulations at large, it cannot provide insights into the effect of such factors on MPs' propensity to engage in particularistic policymaking. Still, preliminary statistical evidence and theoretical reasoning suggest that if we want to understand how to impact elected representatives' propensity to safeguard broader interests rather than specializing in serving localities, we might need to look at something different from the electoral rule. Policymakers aiming to respond more effectively to general interests should give serious consideration to candidates' political experience, the level of electoral competition, and the interaction between electoral rules and electoral regulations.

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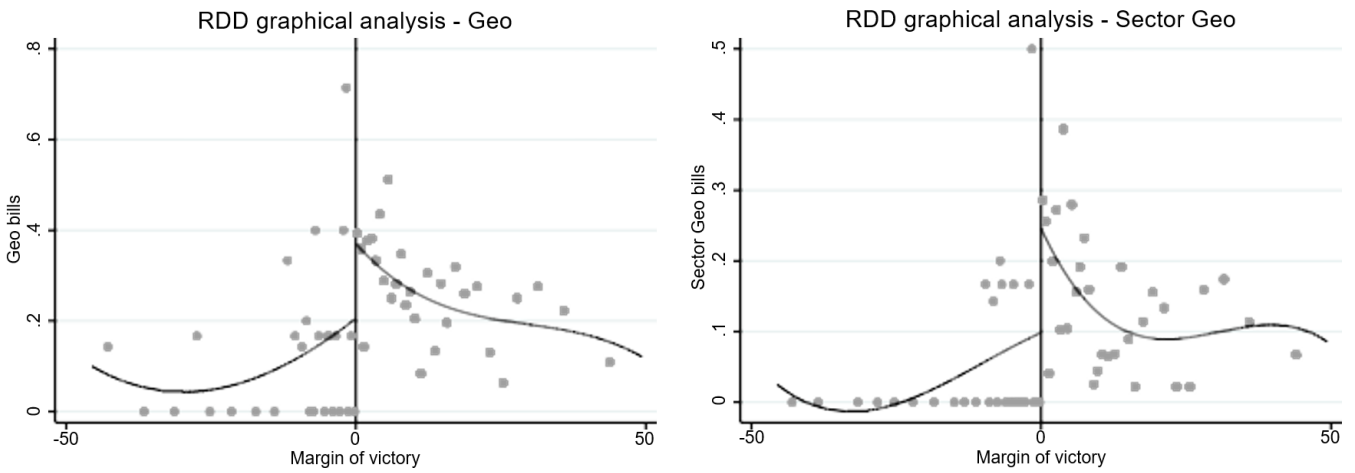
Appendixes

A. RDD Analysis - Complete sample - Robustness checks

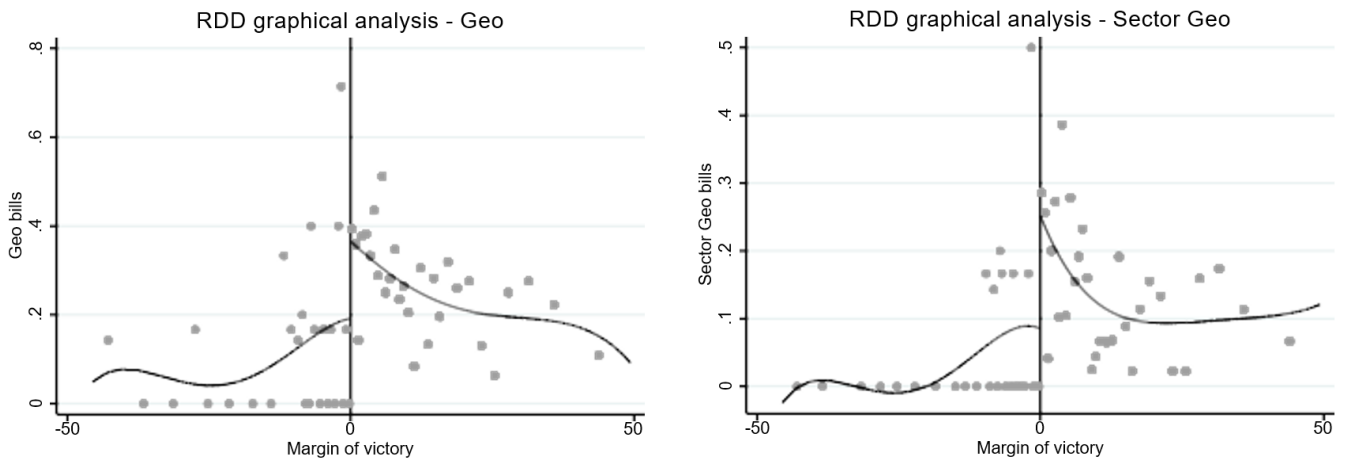
Figure A-1 reports RDD plots for geographically- and sector-targeted legislation. The plots show that the positive discontinuity detected in Section 7.1 is robust across third, fourth, and fifth order polynomials.

Figure A-1. RDD Analysis - full sample

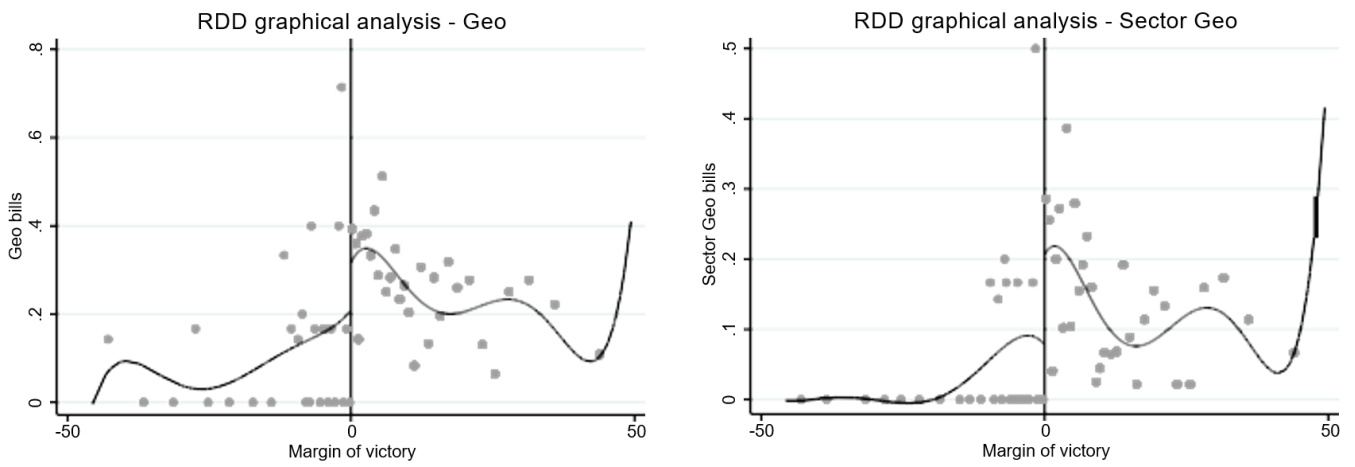
Third-order polynomials (panels **a** and **b**)



Fourth-order polynomials (panels **c** and **d**)



Fifth-order polynomials (panels **e** and **f**)



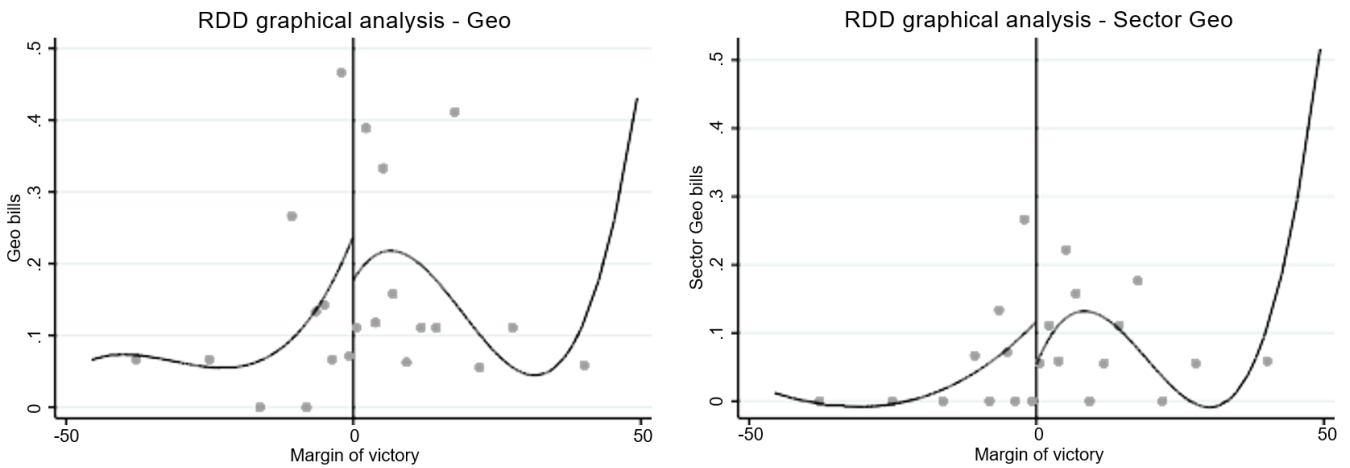
The figure shows RDD plots for particularistic legislation. The dots represent local sample means of the number of particularistic bills proposed by each MP, while the solid line is a third order (panel a and b), a fourth-order polynomial (panel c and d), or a fifth order (panel e and f) polynomial fit. Bins are non-overlapping partitions all containing the same number of observations. The total number of bins has been determined using the mimicking variance method.

B. Electoral incentives - Study group - Robustness checks

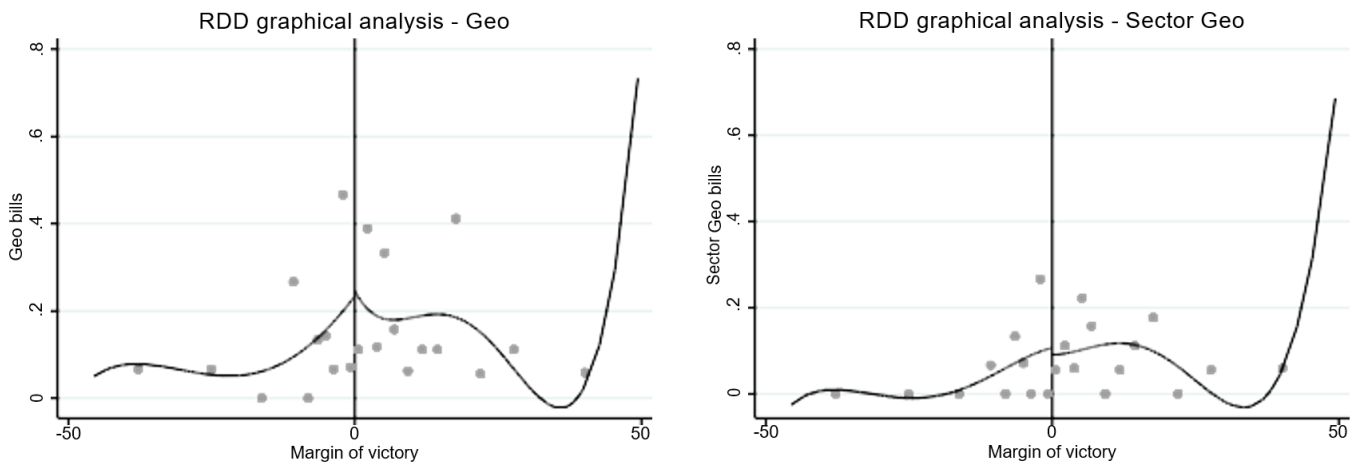
Figure B-1 reports RDD plots for geographically- (panel a, c, and e) and sector-targeted (panel b, d, and f) legislation. The plots show that the absence of a relevant discontinuity detected in Section 7.4 is robust across third (panel a and b), fourth (panel c and d), and fifth order polynomials (panel e and f).

Figure B-1. RDD Analysis - study group

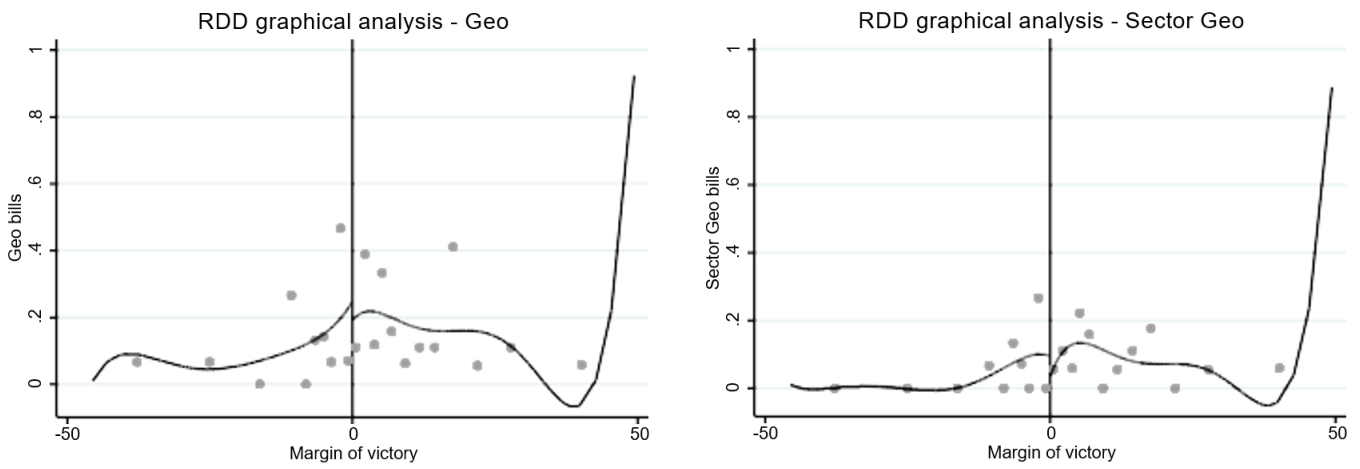
Third-order polynomials (panels **a** and **b**)



Fourth-order polynomials (panels **c** and **d**)



Fifth-order polynomials (panels **e** and **f**)



The figure shows RDD plots for particularistic legislation. The dots represent local sample means of the number of particularistic bills proposed by each MP, while the solid line is a third order (panel a and b), a fourth-order polynomial (panel c and d), or a fifth order (panel e and f) polynomial fit. Bins are non-overlapping partitions, all containing the same number of observations. The total number of bins has been determined using the mimicking variance method.

C. Local linear regression

This appendix reports local linear regressions (LLR) that estimate the causal effect of the treatment ‘being elected in the majoritarian tier’ as opposed to ‘being elected in the proportional tier’. Local-linear regressions are widely used in studies that perform RDD analysis (see Dunning 2012, p. 128). However, opinions on the validity of LLR estimators are mixed. Some argue that, since these regressions draw power from observations further from the threshold, they end up estimating a model that is a less credible description of the data generating process (Green *et al.* 2009). Others consider LLR estimators to be a better option when performing RDD analysis (Hahn *et al.* 2001, Imbens & Lemieux 2008). Building on Dunning (2012), I have opted for what I consider to be a more transparent approach, and I have proposed difference of means tests in my analysis (see Section 7.4). For the sake of completeness, in this appendix I propose an LLR analysis. The results are in line with the quasi-experiment in Section 7.4. The local-linear regressions fail to detect any significant effect of the treatment ‘being elected in the majoritarian tier’ on parliamentarians’ propensity to propose particularistic legislation – geographically- and sector-targeted.

Table C-1. Local linear regressions

	Geo Bills				Sector Bills			
	13% bandwidth	10% bandwidth	5% bandwidth	3% bandwidth	13% bandwidth	10% bandwidth	5% bandwidth	3% bandwidth
Elected in majoritarian tier	0.0439 (0.155)	-0.00976 (0.167)	-0.0331 (0.206)	-0.123 (0.170)	-0.00398 (0.0860)	-0.00179 (0.0945)	-0.0400 (0.114)	-0.0347 (0.103)
Observations	226	196	111	66	226	196	111	66
Majoritarian	122	104	57	35	122	104	57	35
Proportional	104	92	54	31	104	92	54	31

Notes: standard errors in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. The table reports the results of a local-linear regression estimating the effect of the treatment ‘being elected in the majoritarian tier’, on candidates’ propensity to propose geographically-targeted legislation. Results are reported for all the relevant bandwidths: 13%, 10%, 5%, and 2%.

D. Analysis of the 12th, 13th, and 14th legislature

This appendix reports difference of means tests that compare the average number of particularistic bills proposed by dual MPs elected in the majoritarian tier to the average number of particularistic bills proposed by dual MPs elected in the proportional tier. The analysis is analogous to that of Section 7.4, but it is performed separately for each legislature. Table D-1 reports t-tests for the 12th legislature, Table D-2 for the 13th, and Table D-3 for the 14th legislature. In each legislative term, t-tests fail to detect any significant difference in the number of particularistic bill proposals, between parliamentarians elected in the majoritarian tier and parliamentarians elected in the proportional tier.

Table D-1. RDD Analysis - 12th legislature

	Jump at the threshold			
	13% bandwidth	10% bandwidth	5% bandwidth	3% bandwidth
Geo Bills	0.0923 (0.151)	0.127 (0.163)	-0.0195 (0.114)	0.100 (0.131)
Sector Bills	0.0610 (0.147)	0.0899 (0.160)	-0.0909 (0.0801)	0 (0)
Observations	53	48	25	16
Majoritarian	32	27	14	10
Proportional	21	21	11	6

Notes: standard errors in parentheses. + p<0.10, * p<0.05, ** p<0.01. The table reports the results of t-tests that compare the average number of particularistic bills proposed by dual MPs elected in the majoritarian tier – treatment group – to the average number of particularistic bills proposed by dual MPs elected in the proportional tier – control group. Results are reported for all the relevant bandwidths: 13%, 10%, 5% and 3%. The analysis includes only MPs elected in the 12th legislature.

Table D-2. RDD Analysis - 13th legislature

	Jump at the threshold			
	13% bandwidth	10% bandwidth	5% bandwidth	3% bandwidth
Geo Bills	0.109 (0.0944)	0.112 (0.098)	0.0201 (0.108)	0.0476 (0.143)
Sector Bills	0.0439 (0.0648)	0.0311 (0.0724)	-0.0334 (0.0699)	-0.111 (0.0867)
Observations	95	81	49	32
Majoritarian	47	39	23	14
Proportional	48	42	26	18

Notes: standard errors in parentheses. + p<0.10, * p<0.05, ** p<0.01. The table reports the results of t-tests that compare the average number of particularistic bills proposed by dual MPs elected in the majoritarian tier – treatment group – to the average number of particularistic bills proposed by dual MPs elected in the proportional tier – control group. Results are reported for all the relevant bandwidths: 13%, 10%, 5% and 3%. The analysis includes only MPs elected in the 13th legislature.

Table D-3. RDD Analysis - 14th legislature

	Jump at the threshold			
	13% bandwidth	10% bandwidth	5% bandwidth	3% bandwidth
Geo Bills	0.0285 (0.226)	0.0725 (0.251)	0.282 (0.486)	0.200 (0.921)
Sector Bills	0.0270 (0.120)	0.0124 (0.141)	0.179 (0.269)	0.100 (0.522)
Observations	52	44	22	11
Majoritarian	23	21	9	6
Proportional	29	23	13	5

Notes: standard errors in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. The table reports the results of t-tests that compare the average number of particularistic bills proposed by dual MPs elected in the majoritarian tier – treatment group – to the average number of particularistic bills proposed by dual MPs elected in the proportional tier – control group. Results are reported for all the relevant bandwidths: 13%, 10%, 5% and 3%. The analysis includes only MPs elected in the 14th legislature.

E. Robustness checks

This appendix reports robustness checks for the higher presence of ministers in the majoritarian tier. Ministers, who are engaged with government business, usually have less time to draw up bill proposals. Can this act as a confounding factor in the RDD analysis presented in Section 7.4? More precisely, if ministers turn out to be overly represented in the majoritarian tier, and if they are less likely to propose legislation with respect to all the other MPs, they could average down the number of particularistic bills proposed in the treatment group. If that were the case, the results of a non-significant difference between the number of particularistic bills proposed by MPs in the majoritarian tier, and the number of particularistic bills proposed by MPs in the proportional tier, could be driven by the predominance of ministers in the majoritarian tier. Table E-1 reports z-tests that investigate for the presence of a higher proportion of ministers in the majoritarian tier with respect to the proportional tier. The results show that there is a statistically significant higher proportion of ministers in the majoritarian tier. According to these results, the predominance of ministers in the majoritarian tier could act as a confounding factor. What matters, however, is if ministers are less willing to propose particularistic legislation with respect to parliamentarians that did not receive a government appointment. Table E-2 provides the results of t-tests that compare the mean number of particularistic bills proposed by ministers to the mean number of particularistic bills proposed by parliamentarians who did not receive a government appointment. The tests fail to find any statistically significant difference. Notwithstanding the fact that ministers are usually said to propose less legislation with respect to parliamentarians without a government appointment, they do not appear less willing to propose particularistic legislation, at least in the study group employed in this analysis. It thus seems unlikely that the higher presence of ministers in the majoritarian tier could act as a confounding factor and bias the results of the quasi-experiment.

Table E-1. Tests for proportions - Ministers

	Difference in proportions Proportional - Majoritarian
Minister	0.0805** (0.0276)
Observations	226
Majoritarian	104
Proportional	122

Notes: standard errors in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. The table reports the results of z-tests that investigate the presence of a higher proportion of ministers in the majoritarian tier.

Table E-2. Difference in means tests - Ministers

	Difference in proportions Proportional - Majoritarian
Geo	0.187 (0.162)
Sector	0.0935 (0.109)
Observations	226
Majoritarian	104
Proportional	122

Notes: standard errors in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. The table reports the results of t-tests that compare the average number of particularistic bills proposed by dual MPs who have received a government appointment to the average number of particularistic bills proposed by MPs who did not receive a government appointment.