Assessing the Mechanical and Psychological Effects of District Magnitude

Romain Lachat

Universitat Pompeu Fabra
Department of Political and Social Sciences
Ramon Trias Fargas 25-27
08005 Barcelona, Spain
romain.lachat@upf.edu

André Blais

Département de science politique
Université de Montréal
C.P. 6128, Succursale Centre-Ville
Montréal, Canada
H3C 3J7
andre.blais@umontreal.ca

Ignacio Lago

Universitat Pompeu Fabra
Department of Political and Social Sciences
Ramon Trias Fargas 25-27
08005 Barcelona, Spain
ignacio.lago@upf.edu

Assessing the Mechanical and Psychological Effects of District Magnitude

Abstract

District magnitude is a central aspect of the institutional context in PR elections and it influences parties' and voters' strategies. The incentives for strategic behaviour are stronger in smaller districts, as only large parties are likely to be viable. This article investigates how much the vote is affected by this characteristic of the electoral context, focusing on the 2005 and 2009 Portuguese elections. Portugal is one of the countries with the largest degree of variation in district magnitude and represents thus an ideal case for analysing district magnitude effects. Relying on data from the Comparative Study of Electoral Systems, this study shows a strong mechanical effect of district magnitude and a limited psychological effect.

Keywords

District magnitude, Electoral system, Strategic voting, Portugal, Comparative Study of Electoral Systems

1. Introduction

In Portugal, as in Spain, Switzerland and Finland, the number of MPs to be elected varies substantially across districts. In Portugal in 2005 that number ranged from 2 to 48.¹ This makes Portugal one of the countries with the largest degree of variation in district magnitude. The question that we address in this paper is simple and straightforward: How much are the vote and the final outcome affected by district magnitude? How different would things be if voters' behaviour was not constrained by strategic considerations in small districts?

District magnitude is an important aspect of the institutional context, influencing both party strategies and voters' decisions. In PR elections, district magnitude largely affects the degree of proportionality of the electoral outcome. The larger the number of seats to be allocated, the closer should be the correspondence between the distribution of votes and the distribution of seats. Following Duverger (1954), we would expect the potential for a large mechanical effect of the electoral system to be inversely related to district magnitude.

This implies that psychological effects on parties and voters should be stronger in smaller districts. When the number of seats to be allocated is small and the room for a

¹ In 2009, from 2 to 47.

mechanical effect is large, voters and parties should have stronger incentives to behave in a strategic way, anticipating the consequences of the mechanical effect. The crucial link between district magnitude and psychological effects is the viability of candidates and parties. The larger the number of seats is in a given district, the larger the number of candidates and parties with real electoral chances of winning at least one seat.

This paper analyses the relationship between district magnitude and electoral system effects, focusing mainly on the case of the 2005 Portuguese election. There are three main reasons for selecting that country and election. First, as mentioned above, Portugal is one of the countries with the largest degree of variation in district magnitude. Second, the five main parties have been presenting candidates in all districts, while the other parties only get few votes and zero seat. In other words, strategic entry and selection bias are issues we do not have to care about when simulating what the results would have been with a more permissive electoral system. Therefore, Portugal fits the ideal conditions for assessing the mechanical and psychological effects of district magnitude. Finally, the sample of the 2005 Portuguese election study was particularly large (2801 respondents). This is a crucial advantage as it means that there is a substantial number of respondents in most districts, even in the small ones, where the district magnitude effect is expected to be largest. Yet, in order to show that our results hold for other cases, we replicate our analysis with data from

the 2009 election study. It must however be emphasized that the conditions are not as ideal, as the sample was much smaller (1316 respondents). It implies that there are few respondents from small districts and sometimes not any supporter of small parties. This strongly limits our capacity to detect district magnitude effects. For that reason, we concentrate on the 2005 election and present the details of the 2009 analysis in an appendix.

The rest of the paper proceeds as follows. The second section presents the main characteristics of the party system and the electoral system in Portugal. Then the link between district magnitude and viability and the strategy to estimate the effect of district magnitude are explained. In sections four and five the effects of the Portuguese electoral system are decomposed and the size of the mechanical and psychological effects is estimated. The analysis focuses on the 2005 election. The main conclusions from the 2009 replication are presented, while the detailed results are available in an Appendix. Section six concludes.

2. Elections and Parties in Portugal

Elections in Portugal are held by the d'Hondt formula with closed party lists and no electoral threshold. Ignoring the two two-member districts for voters abroad, the 226 MPs in 2005 were elected in twenty districts with magnitudes ranging from 2 (Portalegre) to 48

(Lisbon). The mean district magnitude is 11.3, the median 7.0 and the standard deviation 11.9. In the sample of sixteen countries using districted proportional representation systems examined by Monroe and Rose (2002) to measure the “variance effect”, Portugal shows the highest district magnitude variation. As these 226 seats are allocated among districts in proportion to their population entitled to vote, the electoral system is almost perfectly apportioned (Samuels & Snyder, 2001).

The Portuguese party system consists of two major political parties, the centre-left Socialist Party (PS) and the centre-right Social Democratic Party (PPD/PSD), and two minor parties, the Communist Portuguese Party (PCP-PEV), and the conservative People’s Party (CDS-PP). Since 1999, a relatively new far left party, the Left Bloc (BE) has also entered Parliament (Lobo & Magalhaes, 2011). In the 2005 and 2009 elections, the five parties contested all the twenty resident electoral districts.

The results of the 2005 election are displayed in Table 1.² The PS won the election with 46% of the vote and 53% of the seats. The party won seats in every district. The PPD/PSD followed with 30% of the votes and 32% of the seats. Each of the three other parties received 7 or 8% of the votes and between 4 and 6% of the seats.

² The corresponding results for 2009 are in Table A2 in the Appendix.

[Table 1 about here]

The absence of significant regional parties, the high nationalization of the Portuguese party system (Caramani, 2004), combined with a substantial variation in district magnitude, create an ideal scenario for assessing the mechanical and psychological effects of district magnitude. In cross-national analyses of electoral systems district magnitude also significantly varies across and within countries. However, these cross-national studies face three severe problems. First, there is the possibility that their models are omitting some important factor that accounts for variation in party systems. The use of crude indicators such as the effective number of ethnic groups to control for cleavage structures, for instance, may not suffice. Second, as Monroe and Rose (2002) notice, when district magnitude varies within countries, as in most national legislatures, mean or median district magnitude may not adequately capture the strength of electoral systems. Finally, in countries such as Spain, Switzerland and even Finland, variation in district magnitude is accompanied by the concentration of minorities in some regions. Accordingly, district-level party systems differ even when district magnitude does not.

To the best of our knowledge, only Bourdain (2007), Gschwend (2007) and Vander Weyden and Meuleman (2008) have systematically examined the impact of district

magnitude on voters and party elites in Portuguese elections. Using district-level data from 1975 to 2002, Gschwend concludes that a party that is expected to win no seat will be strategically deserted on average by about 3 per cent of the voters.

The district level results in Table 1 give a first impression of the relation between district magnitude and parties' electoral success. Figure 1 shows the relation between district magnitude and party strength for the main five parties in the 2005 election. Not surprisingly, with the exception of the PCP-PEV, the two big parties, PS and PPD/PSD, receive a larger vote share in small districts than in large districts, while the two small parties, CDS-PP and BE, follow the inverse pattern.³ This does not prove the existence of strategic voting but the pattern is consistent with the hypothesis that small parties suffer from strategic desertion in small districts. In other words, these results point to a psychological effect of district magnitude. A mechanical effect can also be detected, as small parties obtain almost all of their seats in relatively large electoral districts.

³ The absence of a relation between district magnitude and votes for the PCP-PEV is largely due to its strong support in the small districts of Beja (29% for PCP-PEV, magnitude 3) and Évora (22%, magnitude 3), from the agricultural region of Alentejo in the South of the country, which is a traditional stronghold of the communist party. We thank one of the anonymous reviewers for emphasizing this point.

[Figure 1 about here]

3. District magnitude and viability

The purpose of the study is to ascertain the impact of district magnitude on the vote and the final outcome in the 2005 and 2009 Portuguese elections. Electoral system effects have been traditionally conceived as the difference between the outcome of a given system and what would happen in a perfectly proportional system. This type of comparison is virtually impossible to establish, as we cannot know how parties would then behave. In particular, we do not know which additional parties would compete for citizens' votes under perfectly proportional electoral rules. Blais et al. (2011) have suggested a way out of this problem by defining electoral system effects as the difference between the outcomes observed or simulated under two distinct electoral systems. We follow this logic here by comparing the existing electoral system, that comprises both small (some very small) and large districts, with a hypothetical one in which all districts would be as proportional as the largest Portuguese district (that is, as Lisbon, with a district magnitude of 48).

A crucial aspect of this comparison, and one of the main reasons for focusing on Portugal, is that we can be quite confident that this would not influence the number of

parties in competition. Under the current system, each of the five main parties ran in each district. In other words, the psychological effect on party entry appears to be limited in this case and we would not expect more parties to compete if smaller districts were more proportional.⁴ Of course, it does not mean that parties are not sensitive to variations in district magnitude. One could for instance expect small parties to invest fewer resources in mobilizing the vote in small districts where they have little chance of winning a seat (Gallego et al., 2012). The quality of candidates could also be higher in districts where parties have stronger chances. In the 2009 election, we can indirectly test whether parties invested more resources in districts in which they were viable. To that end, we focus on how many respondents reported being contacted by each of the parties. For four out of five parties included in our analysis, there is no relation between district magnitude and frequency of contacts. It is only in the case of the Left Bloc (BE) that voters report being

⁴ If districts were even more proportional than in Lisbon, it could be that additional parties would enter the race and try to gather some votes. But when making a comparison between the existing system and one in which all districts would be *as proportional as the Lisbon district*, we can consider that additional minor parties represent a negligible issue.

contacted somewhat less often in small districts than in large ones.⁵ While these data suggest that the issue might be more limited than expected, some variation in campaign quality or intensity is associated with party viability. Yet, this is not a fundamental problem for our analysis. As we explain in more detail below, it means that we cannot know for sure how much of the psychological effect is due to voters' or parties' behaviour. But this does not prevent us from estimating the size of the total psychological effect.

Our analysis will focus on the five major parties only (PS, PPD/PSD, CDU, CDS-PP, BE), which are the only ones to have received more than 1 per cent of the vote in the 2005 or 2009 election and all together 98 per cent of the vote (in 2009, 97 per cent) and 100 per cent of the seats. If having more proportional districts does not lead to the entry of additional parties, what else could or should change? The incentive for voters to strategically desert small parties would be weakened since it is relatively easy for even small parties to win seats in large districts, and since they may be perceived there as being more attractive given a possibly more active electoral campaign. What would change is that

⁵ We cannot test for this relation in 2005: Respondents were asked if they were contacted by parties during the campaign, but not by which parties.

all parties would be perceived to be viable, which would reduce or eliminate the strategic desertion of small non-viable parties that (presumably) takes place in small districts.⁶

From the voter's perspective, then, the most important change that occurs as she moves from a small to a large district is that more parties become viable. Following previous research (Gschwend, 2007; Lago, 2008), we define a party as viable if and only if the party won a seat in that district in the previous election. Figure 2 shows the relationship between district magnitude and the number of viable parties in the 2005 Portuguese election (note that the two-seat district of Portalegre and the non-continental districts of Açores and Madeira are excluded here and in the rest of analyses since we have no respondent from those districts in the survey that is used later on). There is a strong (logarithmic) relationship between district magnitude and the number of viable parties. District magnitude explains two-thirds of the variance in the number of viable parties. According to the estimated regression, we should expect only two viable parties when district magnitude is less than 7, three when district magnitude is between 7 and 15, four when district magnitude is between 16 and 40, and five when district magnitude is above 40. Most importantly, the relatively close relationship between district magnitude and the

⁶ Not voting for a non-viable party is one form of strategic voting, but not the only one (Cox, 1997). In this paper, however, we only focus on that type of strategic behaviour.

number of viable parties is consistent with our assumption that the district magnitude's psychological impact on the vote goes through its effect on party viability.

[Figure 2 about here]

In order to estimate the effects of district magnitude, we need to compare electoral outcomes under two scenarios. On the one hand, we have the current system in which district magnitude ranges from 3 to 48. On the other hand, we wish to simulate what the electoral results would have been if all districts had been as proportional as the largest district, that is, Lisbon with a magnitude of 48. For both scenarios, we keep the same aspects of the electoral system, that is, a PR system with d'Hondt rule.

Our reference point is the actual, less permissive system. We thus define the effects as the changes in the distribution of votes and seats resulting from using a more permissive system (i.e., proportional districts everywhere). In order to quantify this effect, we can focus on either the distribution of seats or the distribution of votes. We will summarize electoral system effects for each district with two indicators: changes in the degree of fragmentation of the electoral results, as measured by the Effective Number of Parties

(ENP), and changes in the proportion of votes or seats received by small parties (PCP-PEV, CDS-PP, and BE).

As mentioned above, all five major parties have been competing in all districts. This means that we can assume issues of strategic entry to be negligible. Our task is to quantify the psychological and mechanical effects. The psychological effect corresponds to the difference between the distribution of seats obtained when citizens' votes reflect their sincere preferences and the distribution of seats when they respond to candidates' viability. Both of these distributions of seats are computed with districts of varying magnitude, that is, with the actual electoral system. To simulate the effect of viability and how this affect citizens' vote, we estimate a model of vote choice, including indicators of citizens' political and partisan preferences, party viability, and interaction terms between viability and the preference indicators. This model allows us to predict both citizens' sincere vote (when all candidates are deemed viable) and their vote when some candidates are viable and others are not. Note that the estimated effect of viability can capture two different things: voters strategically deserting parties with weak chances, or these parties being considered less attractive, possibly because they campaigned less actively. That is, the "viability effect" can be due to both types of psychological effects (on voters and on parties) of the electoral system.

The mechanical effect of the electoral system in a given district is defined as the difference between the simulated effective number of parliamentary parties obtained when distributing citizens' sincere votes with 48 seats in each district, and distributing sincere votes with districts of varying magnitude. In other words, the mechanical effect reflects only the change in the distribution of seats due to applying a different electoral system, keeping votes constant. This procedure is similar to the one suggested by Blais et al. (2011), except that the point of reference in this study is the less permissive electoral system.

4. Viability and the vote: the psychological impact

The first step is to ascertain the impact of viability on vote choice, and for this we need to estimate a vote choice model. Data for the 2005 election are drawn from Module 2 of the Comparative Study of Electoral Systems (CSES). The two-seat district of Portalegre, the non-continental districts of Açores and Madeira, as well as the two districts for citizens living abroad, are not included in the CSES election survey. Thus, only 17 districts are considered in the analyses, corresponding to a total of 213 seats. The dependent variable is party choice and has five categories: PS, PPD/PSD, PCP-PEV, CDS-PP and BE. Because our measures of preferences concern only the five main parties, our analyses exclude the

other parties. However, as said before, this is not particularly problematic as their electoral support is tiny and they did not win any seat.

As our model will be used to simulate citizens' votes under a counterfactual scenario, it is important to try to explain individual choices as fully as possible. For that reason, we include several measures of partisan and political preferences, that are all expected to be strongly related to voting choice. These variables are: the voter-party ideological distance on an 11-point left-right scale ranging from 0 (identical position) to 10 (maximal distance); party sympathy on a scale ranging from 0 (strongly dislike) to 10 (strongly like); the evaluation of party leaders, measured as a dummy variable that equals 1 when the respondent declares that his/her views are best represented by the corresponding party leader and 0 otherwise;⁷ and party identification, measured as a dummy variable that

⁷ In 2005, this is the only available information on citizens' evaluations of party leaders. In 2009, respondents were also asked to rate party leaders on a like-dislike scale. For the 2009 replication, we rely on that second battery of questions, as it offers a more detailed assessment of leader sympathies and as it improves the predictive power of the voting choice model.

equals 1 when the respondent feels close to the corresponding party and 0 otherwise.⁸ As we expect the impact of voters' preferences on party choice to be influenced by parties' electoral chances, we include an indicator for the expected viability of parties. Following Gschwend (2007) and Lago (2008), we base our measure of viability on parties' electoral results in the previous election. This dummy variable equals 1 if the party won a seat in that district in the previous election and 0 otherwise.⁹ To capture the expected moderating effect of viability, which corresponds to the psychological effect, the model includes interaction terms between viability and each of the preference variables. A significant effect of one or several of these interaction terms would show that the impact of voter preferences differs between viable and non-viable parties.

⁸ For respondents who do not identify with any party, this dummy variable takes the value 0 for all choice alternatives.

⁹ We have performed a robustness test by replicating this analysis with a more fine-grained measure of viability, based on the additional share of votes a party would have needed in the previous election in order to win the last allocated seat. The corresponding results, presented in Table A1 in the Appendix, are consistent with those of the main model specification.

All our independent variables are alternative specific. That is, they express the relations between a respondent and a given party. The value of these variables can vary across parties for a given respondent. Accordingly, we estimate the model with a conditional logistic regression. Table 2 presents the results of our vote choice model. The effect of all four preference variables is significant and in the expected direction. Furthermore, viability moderates the impact of the evaluation of party leaders, and the interaction with party identification is substantially strong and close to being significant ($p=0.065$). The goodness-of-fit is excellent.

[Table 2 about here]

With this voting choice model, we can simulate the distribution of citizens' sincere vote. This corresponds to the predicted vote when all parties are deemed to be viable. This simulated distribution of votes is then compared to the distribution of the vote under the actual viability scores. The difference corresponds to the psychological effect of district magnitude. By definition, the vote distribution would remain the same in the two largest districts where each of the five parties is viable. The predicted vote differs sometime in the smaller districts where the viability scores change.

When predicting how voters would have behaved in a different scenario, we need to account for the uncertainty surrounding our estimated regression parameters. In order to do so, we have taken 1000 draws from the distribution of the estimated parameters. This allows us predicting for each respondent 1000 predicted vote choices with viability being allowed or not to play. Of the 1446 respondents who can be included in the regression model, the predicted vote choices differ only in 25 cases (median value of the 1000 simulations). The implication is that about 2% of the voters would vote differently if all parties were viable. The percentage is obviously nil in the two largest districts, but it gets higher in smaller districts. And as it only affects small parties, its impact is not negligible.

On the basis of these 1000 estimations, we can determine the median difference in the vote distribution depending on whether viability is allowed or not to play in each district. Figure 3 shows how much the effective number of electoral parties and the percentage of the vote for the small parties (i.e., PCP-PEV, CDS-PP, and BE) increase depending on district magnitude.¹⁰ Table 3 presents the same information differently by summarizing the changes for three types of districts: small, medium, and large. There

¹⁰ For each district, the point estimate is the median value from the 1000 simulations, while the lower and upper bounds of the confidence interval are the 2.5th and 97.5th percentiles of this distribution.

would be no change, of course, in the large districts. But in the small districts, support for the small parties would increase by more than one percentage point (a relative increase of 8%); the effective number of parties would increase by a value of 0.07. In the country as a whole, small parties would get 0.51 percentage point more. The distribution of the vote would thus change, but only slightly.

[Figure 3 about here]

[Table 3 about here]

We also establish what this psychological effect entails in terms of seats. Figure 4 shows how much the percentage of seats of small parties and how much the effective number of legislative parties would increase, comparing predicted votes with and without viability, and using in both cases the existing district magnitude. Again, the same information is shown in Table 3 for the three types of districts. We are then measuring only the psychological impact since we are contrasting predicted vote choices under two scenarios where viability does or does not come into play, while neutralizing the mechanical impact (using the same districts in both cases).

[Figure 4 about here]

We notice that the increase in the vote share of small parties in small and medium-sized districts is in most cases not sufficient to alter the distribution of seats. As shown by the left-hand panel of Figure 4, there is only one district in which the distribution of seats would change. This is the district of Faro, of magnitude 8. Small parties are thus penalized by the psychological effect, that is, by the parties' less active campaign and by citizens who avoid supporting non-viable parties. But the effect in terms of seats is very limited. The right-hand panel of Figure 4 shows the corresponding effect in terms of the effective number of parliamentary parties, which, logically, also varies in a single district.

In 2009, estimating the size of the psychological effect is more difficult, as the small sample size implies that we have very few or no supporters of small parties in small districts. We find a median psychological effect of 0, in terms of both votes and seats (Table A4 and Figures A1-A2). As the data are less well suited to our purpose than in 2005, we must be cautious when drawing conclusions from these results. But it seems that the small size of the psychological effect is not unique to the 2005 case.

5. The mechanical impact

The second stage is to estimate the mechanical effect. In this case we wish to neutralize the psychological effect, and we thus use the simulated vote under a scenario where all parties are viable. We compare the seat distribution that we would obtain with that vote distribution and all districts having the maximum size of 48 with the seat distribution with the same vote but the existing district magnitude.

[Figure 5 about here]

The results are presented in Figure 5 and Table 3. We see that an increase in district magnitude would result in substantial changes, and that, unsurprisingly, these changes are much larger in smaller districts. The effective number of parliamentary parties would increase in virtually all districts. As can be seen in Figure 5, this increase would be as high as one more effective party in some of the smallest districts. On average, the ENPP would increase by a value of 0.7 in small districts, and by a value of 0.3 in medium sized districts (Table 3). In small districts, the share of seats going to small parties would increase on average from 7.1% to 17.6%, a very substantial shift.

These changes in the distribution of seats are clearly larger than those resulting from the psychological effect. In terms of the seats share of small parties, the mechanical effect

of a larger district magnitude would again surpass those of the psychological effect. Altogether, the mechanical and psychological effects of district magnitude would lead to sizeable changes in the strength of small parties. Their percentage of seats would increase by 4.4 points (from 15.1 to 19.5%), a relative increase of almost 30%. The relative increase in the effective number of parties would be of 10%. In 2009, the size of the mechanical effect is comparable in small districts, with a very substantial increase in the number of votes and seats going to small parties (cf. Table A4). In medium-sized districts, in contrast, we observe a smaller overall and mechanical effect. But the dominance of the mechanical effect, and its negative relation with district magnitude, appear clearly in 2009, as in 2005.

6. Conclusion

Portugal fits the ideal conditions for assessing the mechanical and psychological effects of district magnitude better than any other case and cross-national analyses. In the terms of Monroe and Rose (2002), Portugal uses a pure “districted electoral system” in which MPs are elected in twenty districts with magnitudes ranging dramatically from 2 to 48 (resident, 2005) while significant sub-national parties are unknown.

The mechanism connecting district magnitude and the effect of district magnitude is the viability of candidates or parties. All else equal, the larger the district magnitude, the

larger the number of viable competitors. Therefore, both the mechanical and psychological effects tend to decrease as district magnitude increases.

We have proposed a methodology for estimating such effects in the 2005 Portuguese election based on a counterfactual simulation. What would change if all districts were large, i.e., if parties were viable in all districts as in the largest district, Lisbon? The psychological effect is estimated by comparing the electoral outcomes under the current electoral system with those resulting from citizens' sincere vote, that is, in a situation in which all parties are deemed viable. To assess the mechanical effect, we compare the effective number of parliamentary parties when sincere votes are distributed into seats with the actual electoral system and when they are distributed using districts with the same degree of proportionality as the largest Portuguese district.

According to the simulations, about 2% of voters cast a strategic vote in the 2005 Portuguese election (i.e., they would made a different party choice if all parties were viable in the district). This is a not an irrelevant amount of strategic behaviour on the part of voters if we take into account that only supporters of small (and non-viable) parties in small districts face an opportunity to behave strategically. But as such the psychological effect is not sufficiently large to have an independent impact on the outcome of the election. On the other hand, when the psychological effect is neutralized, changing the electoral system in

favour of a more proportional one increases the effective number of parliamentary parties by 0.7 in small districts and 0.3 in medium size districts. In sum, the mechanical effect is clearly larger than the psychological effect in the 2005 Portuguese election.

We replicated this analysis with data from the 2009 election. Unfortunately, the sample was much smaller, which makes it more difficult to capture the psychological effect. A smaller sample means that we lack supporters of small parties in many small districts, which are the voters expected to be most sensitive to an effect of district magnitude. This additional analysis is thus likely to underestimate the size of the psychological effect. Nonetheless, based on the available data, it appeared again that the mechanical effect is dominant.

7. References

Blais, A., Lachat, R., Hino, A. & Doray-Demers. P. (2011) The mechanical and psychological effects of electoral systems: A quasi-experimental study. *Comparative Political Studies*, 44, pp. 1599–1621.

Bourdain, J. (2007) *Voto Estratégico em Portugal nas Eleições Legislativas de 2005*. MA Master Thesis. Instituto de Ciências Sociais, Universidade de Lisboa.

Caramani, D. (2004) *The Nationalization of Politics. The Formation of National Electorates and Party Systems in Western Europe* (Cambridge: Cambridge University Press).

Cox, G. (1997) *Making Votes Count: Strategic Coordination in the World's Electoral Systems* (Cambridge: Cambridge University Press).

Duverger, M. (1954) *Political Parties* (New York: Wiley).

Gallego, A., Rico, G. & Anduiza, E. (2012) Disproportionality and voter turnout in old and new democracies. *Electoral Studies*, 31, pp. 159–169.

Gschwend, T. (2007) Institutional incentives for strategic voting and party system change in Portugal. *Portuguese Journal of Social Science*, 6, pp. 15–31.

Lago, I. (2008) Rational Expectations or Heuristics? Strategic Voting in Proportional Representation Systems. *Party Politics*, 14, pp. 31–49.

Lobo, M.C. & Magalhaes, P.C. (2011) Room for Manoeuvre: Euroscepticism in the Portuguese Parties and Electorate 1976-2005. *South European Society and Politics*, 16, pp. 81–104.

Monroe, B.L. & Rose, A.G. (2002) Electoral Systems and Unimagined Consequences. Partisan Effects of Districted Proportional Representation. *American Journal of Political Science*, 46, pp. 67–89.

Samuels, D. & Snyder, R. (2001) The Value of a Vote: Malapportionment in Comparative Perspective. *British Journal of Political Science*, 31, pp. 651–671.

Vander Weyden, P. & Meuleman, B. (2008) Electoral Systems and Strategic Learning in Spain and Portugal? The Use of Multilevel Models. *Acta Politica*, 43, pp. 93–117.

Table 1. 2005 Portuguese election (resident districts): Percentage of votes and number of seats received by the five main parties

	PS		PPD/PSD		PCP-PEV		CDS-PP		BE	
	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
Lisbon	44.1	23	23.7	12	9.8	5	8.2	4	8.8	4
Porto	48.5	20	27.8	12	5.4	2	6.9	2	6.7	2
Braga	45.4	9	32.9	7	4.8	1	7.8	1	4.6	0
Setúbal	43.6	8	16.1	3	20.0	3	5.1	1	10.3	2
Aveiro	41.1	8	35.7	6	3.5	0	9.8	1	5.1	0
Coimbra	45.4	6	31.9	4	5.5	0	5.5	0	6.3	0
Leiria	35.6	4	39.8	5	4.6	0	8.9	1	5.5	0
Santarém	46.1	6	26.4	3	8.6	1	6.9	0	6.5	0
Viseu	40.4	4	40.2	4	2.2	0	8.6	1	3.3	0
Faro	49.3	6	24.6	2	6.9	0	5.8	0	7.7	0
Madeira	35.0	3	45.2	3	3.6	0	6.6	0	3.8	0
Viana do Castelo	42.0	3	33.5	2	3.8	0	11.4	1	4.5	0
Azores	53.1	3	34.4	2	1.7	0	4.0	0	2.9	0
Castelo Branco	56.0	4	26.7	1	3.8	0	5.3	0	3.7	0
Vila Real	43.8	3	40.2	2	2.6	0	6.8	0	2.4	0
Bragança	42.1	2	39.0	2	2.0	0	9.7	0	2.5	0
Guarda	46.8	2	34.7	2	2.9	0	7.0	0	3.4	0
Beja	51.0	2	12.3	0	24.1	1	2.9	0	4.7	0
Évora	49.7	2	16.7	0	20.9	1	3.7	0	4.6	0
Portalegre	54.9	2	20.2	0	12.1	0	4.2	0	4.6	0
Total seats	120		72		14		12		8	
% votes	46.4		29.6		7.8		7.5		6.5	
% seats	53.1		31.9		6.2		5.3		3.5	
Districts with seats	20		17		7		8		3	

Note: The districts are ordered by decreasing magnitude. The results of the smaller parties, which received a total of 2.2 per cent of the votes and 0 seats, are not included.

Table 2. Model of vote choice (Conditional logit model)

Variable	Coef.	Std. Err.
Viability	0.52	0.49
Left-right distance	-0.21**	0.07
Left-right distance * Viability	0.09	0.07
Party sympathy	0.60***	0.06
Party sympathy * Viability	-0.11 [†]	0.06
Leader	0.92**	0.29
Leader * Viability	0.80*	0.36
Party identification	1.15**	0.40
Party id. * Viability	0.84 [†]	0.46
BE	-1.33***	0.19
CDS-PP	-0.79***	0.18
PCP-PEV	-0.85***	0.17
PPD/PSD	-0.33**	0.13
N (observations)	7122	
N (respondents)	1446	
Log likelihood	-659.95	
McFadden R ²	0.71	

[†] p<0.10; * p<0.05; ** p < 0.01; *** p < 0.001

Table 3. Summary of electoral system effects, by district magnitude

	All districts	By district magnitude		
		<8	8-21	>21
<i>Number of districts</i>	17	7	8	2
<i>Party system characteristics</i>				
% votes small parties	21.13	16.38	21.24	23.31
ENEP	3.25	2.88	3.27	3.39
% seats small parties	15.11	7.14	12.37	22.09
ENPP	2.53	2.04	2.41	2.91
<i>Psychological effect</i>				
Δ % votes small parties	0.51	1.26	0.74	0.00
Δ ENEP	0.03	0.07	0.05	0.00
Δ % seats small parties	0.47	0.00	1.03	0.00
Δ ENPP	0.02	0.00	0.05	0.00
<i>Mechanical effect</i>				
Δ % seats small parties	3.96	10.42	5.13	0.39
Δ ENPP	0.24	0.66	0.30	0.02
<i>Total effect</i>				
Δ % seats small parties	4.43	10.42	6.16	0.39
Δ ENPP	0.26	0.66	0.36	0.02

Figure 1. Vote shares of the five main parties in the 2005 election, by district magnitude, and linear prediction with 95% confidence interval

Figure 2. District magnitude and the number of viable parties

Figure 3. Psychological effect: Change in vote shares of small parties and in the ENEP when all parties are deemed to be viable, by district magnitude

Figure 4. Psychological effect: Change in percentage of seats of small parties and in the ENPP when all parties are deemed to be viable, by district magnitude

Figure 5. Mechanical effect: Change in percentage of seats of small parties and in the ENPP when all districts are as proportional as the largest one, by district magnitude