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Do Voters Affect Policies? Within-Coalition Competition in the Chilean Electoral System

Pablo Argote and Patricio Navia

Abstract: It has been argued that close elections lead to policy convergence, as legislators elected by a small margin are more likely to adopt moderate policy positions (Downs 1957). However, Lee, Moretti, and Butler (2004) find that electoral competition does not affect legislators' policy preferences in the United States, questioning the median voter paradigm. To help to discern this paradox, we estimate the effect of close elections on legislators' subsequent policy positions under different electoral rules. With Chile's two-seat open-list proportional representation system, we exploit the dynamics of within-coalition competition to test both hypotheses. Using the margin of victory in 383 races in four different parliamentary elections and 3,741 roll-call votes for the 120-seat Chamber of Deputies from 1998 to 2014, we find that electoral competition did not lead to policy convergence under either the center-left Concertación coalition or the rightist Alianza coalition. We contend that policy convergence responds to electoral incentives but is also conditioned by the nature of the political regime (presidential or parliamentary) and government–opposition dynamics.

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Keywords: Chile, regression discontinuity design, legislative preferences, electoral systems

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Introduction

Do voters affect or elect policies (Lee, Moretti, and Butler 2004)? Some argue that electoral competition can lead to policy convergence, as it compels politicians to adopt middle-ground positions in line with a district's median voter (Downs 1957). However, since politicians cannot make credible commitments toward a policy agenda, they also have incentives to pursue their preferred policies, which can result in policy divergence (Alesina 1988). The two hypotheses lead to different predictions regarding the effects of electoral competition. For instance, in the policy convergence hypothesis, a US Democratic candidate who wins by a small margin is more likely to compromise and adopt moderate policy positions. Concretely, the candidate's voting record would be similar to that of a US Republican candidate who also won by a slim margin. In contrast, the policy divergence hypothesis predicts that a legislator's roll-call voting will be independent of the margin of victory. By using a regression discontinuity design (RDD), Lee, Moretti, and Butler (2004) estimate the causal effect of close elections on subsequent roll-call voting records in the US House of Representative, finding strong evidence of policy divergence in these first-past-the-post (FPTP) electoral districts.

Chile offers a unique context for testing these two competing hypotheses under a presidential regime and different electoral rules. Following its transition to democracy in 1989 until 2013, Chile used an across-the-board two-seat proportional representation (PR) system for both chambers of its national legislature. To win both seats, a coalition needed to receive more than twice the vote of the second-largest coalition. Since that rarely happened, the most common seat distribution divided the two seats between the two largest electoral alliances. Thus, the Chilean electoral system created a within-coalition FPTP system, as candidates knew that their victory likely depended on getting more votes than their coalition partners.

Presumably, this would have encouraged candidates to adopt policy positions aligned with their coalition's median voter. Consequently, by exploiting within-coalition competition and partisan heterogeneity among coalitions partners, we¹ aim to extend the application of a RDD from single-member districts to PR systems with a district magnitude of 2. More specifically, our purpose is to address the following research

1 We would like to thank Hernán Campos, David Martínez and two anonymous reviewers, for their comments and suggestions. This article was partially funded by FONDECYT Regular (#1171051) and CONICYT/FONDAP (#15130 009).

questions: What was the effect of electoral competition on subsequent roll-call voting records within the two major coalitions in Chilean politics? Did electoral competition produce a high degree of policy convergence toward the median voter within the two major alliances? How did this effect differ between the center-left Concertación and the rightist Alianza? Which other intervening factors might have been at play? These four research questions will allow us to address how the dynamic of within-coalition competition affects legislators' policy positions in PR systems with small district magnitudes in the context of a presidential regime.

The paper continues as follows: First, we present our theory. We then describe the Chilean electoral and political systems before outlining our empirical strategy and the data. After that, we present the main results and robustness checks. Finally, we discuss the main conclusions.

Median Voter and Credibility

The classic median voter model states that in a majoritarian electoral system with single-member districts, if two candidates are only interested in winning elections, they will compete for votes by choosing the policy positions preferred by the median voter in a single dimensional space. As voters' preferences are known, politicians from different parties will adopt identical positions (Downs 1957). In real life, however, politicians do not always adopt identical positions, largely because elections are multidimensional and mandatory voting is never enforceable. Moreover, the assumptions of the median voter model do not hold when there is no mechanism to establish binding policy commitments and when politicians have strong policy preferences (Alesina 1988). Furthermore, politicians may also have electoral incentives to adopt more extreme positions – for instance, to attract a decisive amount of voters and generate more opportunities for campaign funding (Glaeser, Ponzetto, and Shapiro 2005). This effect could be intensified in a voluntary voting scheme, because people with stronger political preferences are more likely to turnout to vote. Indeed, Miller and Dassonneville (2016) find that left-of-center parties in the Netherlands benefited from a change from compulsory to voluntary voting.

Lee, Moretti, and Butler (2004) use a repeated game to show two possible scenarios. If politicians can enhance their credibility through their reputation, they have incentives to honor their moderate policy promises. Consequently, we would observe a high degree of policy convergence. Nevertheless, if the costs of deviating from a commitment are

sufficiently low, and if politicians have fixed policy positions, policy divergence is more likely to occur.

Gary Cox (1990) identifies additional factors that could affect a party's position-taking incentives. He argues that the combination of a small district magnitude and a large number of votes per voter encourage the adoption of moderate positions, while a high district magnitude plus few votes per voter promote ideological dispersion. Calvo and Hellwig (2011) provide us with new insights, arguing that electoral rules have differential effects based on party size. Indeed, for larger parties, majoritarian rules tend to encourage the adoption of moderate positions because they can use the vote–seat disproportion in their favor. The opposite is true for small parties: majoritarian rules incentivize them to take more extreme positions because moderate voters are likely to defect from parties that are expected to get less seats than their vote share.

Why Is Chile a Good Case Study?

Chile's so-called binominal electoral system (in place between 1989 and 2013) had unique features that make it suitable for testing the policy convergence hypothesis with a RDD. It was an open-list PR system but was often labeled as “semi-majoritarian” because of the small district magnitude (Nohlen and Fernández 1999). As in single-member districts, Chilean voters selected individual candidates from an open-list, but they did so within lists. To allocate seats, votes were tallied at the individual and list levels, and seats were assigned using the d'Hondt seat allocation formula. The first seat was awarded to the coalition with the largest vote share. To win both seats, the list with the most votes had to receive twice as many votes as the second-place list. In a two-list contest this meant that a coalition could secure one seat with one-third of the votes plus one. However, to obtain both seats, a coalition had to receive more than two-thirds of the vote. Given that this situation was quite unlikely (see table 1), the system encouraged, in practice, within-coalition competition. For instance, within each list, party A would be likely to secure the seat by obtaining one more vote than party B. In this sense the system created a FPTP scenario within each coalition of parties. As Bunker and Navia (2015) explain, a low district magnitude PR system could be treated similarly to an FPTP scheme in some dimensions.

In Chile's two-coalition contests the votes that the largest party received beyond the one-third threshold were useless unless the coalition reached the two-thirds threshold (Magar, Rosenblum, and Samuels 1998). As each of the 60 districts in the Chamber of Deputies and the 19

districts in the Senate elected two seats using open-list PR, the system induced the formation of two large coalitions. The prevalence of the two coalitions led some to treat Chile as a two-party system (Carey 2002; Alemán and Navia 2009; Alemán and Saiegh 2007).

The two coalitions formed around their support for and opposition to the Pinochet dictatorship before the 1988 plebiscite that sanctioned the transition to democracy. The center-left Concertación won the 1988 vote and ruled continuously from 1990 to 2010. In 2010 the Concertación comprised the centrist and confessional Christian Democracy (Partido Demócrata Cristiano, PDC) and several left leaning parties (LLPs) – namely, the Socialist Party (Partido Socialista de Chile, PS), Party for Democracy (Partido por la Democracia), and the Radical Party (Partido Radical)². The Concertación brought together leftists and centrist parties that were at odds before the authoritarian era. The PDC and the LLPs often differed on policy choices, both on economic and moral issues.

Originating in the 1950s, the centrist PDC was a faction of the traditional Chilean Conservative Party (Partido Conservador), which proposed an alternative to capitalism and communism – namely, a third way. The party won the presidency for the first time in 1964, when Eduardo Frei Montalva obtained 56.1 percent of the vote. In 1970–1973 the PDC opposed Allende’s government and formed a coalition with the conservative National Party (Partido Nacional). By contrast, the PS (the most significant LLP) was a traditional workers’ party that originally embraced Marxism. It was also the main party that supported Allende and was prosecuted by the military dictatorship that overthrew Allende in 1973. Despite their opposition in the 1970s, the PDC and PS (and other LLPs) formed a comprehensive center-left coalition to restore democracy. After defeating Pinochet in a 1988 plebiscite, the Concertación ruled uninterruptedly from 1990 to 2010. Because of their past differences, there was continued debate about the survival of ideological differences between the PDC and the LLPs.

The rightist Alianza was formed by National Renewal (Renovación Nacional, RN), a moderate center-right party, and the Independent Democratic Union (Unión Demócrata Independiente, UDI), a right-wing party most closely associated with the Pinochet legacy. Both parties have their roots in the National Party that opposed Allende and supported the military dictatorship. United in a single party until 1987, the UDI

2 Although the Communist Party (Partido Comunista) did not belong formally to the coalition, they competed within the list in the 2009 election. Thus, starting from 2009, we counted this party within the Concertación list.

and RN broke apart before the restoration of democracy but competed in elections as members of the same coalition after 1989. The Alianza first won a presidential election in 2010. Unlike the parties in the Concertación, those in the Alianza had been on the same ideological side for decades. After 1989, the two coalitions dominated legislative elections. As table 1 shows, the Concertación and the Alianza in total won more than 95 percent of the seats in the Chamber of Deputies between 1997 and 2013.

Table 1. Distribution of Coalition Level Results by Districts in Chile, 1997–2013

| Election year | Each coalition won one seat | One coalition won both seats | Third-party party won one seat | Total number of districts | Total number of elected legislators (Chamber of deputies) |
|---------------|-----------------------------|------------------------------|--------------------------------|---------------------------|-----------------------------------------------------------|
| 1997 | 45 | 11 | 4 | 60 | 120 |
| 2001 | 54 | 5 | 1 | 60 | 120 |
| 2005 | 52 | 7 | 1 | 60 | 120 |
| 2009 | 57 | 1 | 2 | 60 | 120 |
| 2013 | 45 | 11 | 4 | 60 | 120 |
| N | 253 | 35 | 12 | 300 | 600 |
| % | 84.33 | 11.67 | 4 | | |

Source: Authors with data from Servicio Electoral <www.servel.cl>. For 2009, the three legislators from the Communist Party are counted within the Concertación.

Another important institutional feature of the Chilean political regime is its presidential nature. As Siavelis (2002) points out, the president has co-legislative powers due to the president’s agenda-setting ability and exclusive prerogative for introducing bills that involve disbursement of fiscal resources. However, given that presidents are typically supported by a coalition of parties, strong presidents could also moderate their position in order to seek congressional approval. The 1980 Constitution inherited from the dictatorship was substantially reformed in 2005 under President Ricardo Lagos of the Concertación. This included modifying the faculty of the executive to control the legislative agenda, increasing the power of Congress to create investigative commissions, and creating a mechanism for Congress to summon cabinet members for inquiries (Fuentes 2010). Still, the reform did not alter the presidential nature of the political regime. For the purposes of this paper, the relevance of the presidential regime stems from legislators’ level of autonomy from the ruling coalition. Indeed, legislators from government coalition parties may have voted as a block in favor of bills introduced by the executive, attenuating their internal differences. If this did occur, we should observe more

policy convergence between the parties of the ruling coalition than between opposition parties.

Empirical Strategy

Since the probability of a coalition getting both seats was small, candidates competed against their coalition partners. That made competition within each coalition under the binominal system similar to that in the single-member district system of the US. Despite having a PR system, Chile lends itself to comparisons with the US because the electoral rules have a similar effect in the two countries – between parties in the US and within coalitions in Chile. Therefore, within each list, candidates could seek the support of the median voter in their ideological niche. Applying a RDD to close elections in Chile allows us to expand the scope of the model beyond single-member districts to PR arrangements, focusing on within-coalition competition rather than on between-party contests.

Within-list competition produces drastically different results if the candidates get more than 50 percent of the within-list vote. Thus, a party's within-list vote share constitutes a forcing variable that deterministically assigns treatment when passing the 50 percent threshold. By invoking the continuity assumption (De la Cuesta and Imai 2016), the only change that occurs at the within-coalition 50 percent vote-share threshold is a shift in the treatment status – in this case, getting elected for the Chilean Chamber of Deputies. Thus, we are able to estimate local average treatment effects (LATEs) using a RDD for both coalitions. Specifically, we aim to look at the within-list relationship between party vote share and legislators' latent ideology in roll-call voting at the 50 percent threshold. If the convergence hypothesis holds, legislators who barely outperform their coalition partners should attempt to represent the median voter within their coalitions. If the divergence hypothesis holds, these legislators should vote based on ideological and partisan motivations.

Following De la Cuesta and Imai (2016), we do not contend that close winners and losers have the same distribution in pretreatment covariates. In other words, we are not arguing for local randomization at the cutoff point. Rather, we assume the existence of continuity in the potential outcomes, an assumption that is much less stringent than “as if random” (in the results section, we test the continuity assumption with pretreatment covariates). Formally, the continuity assumption can be written as:

$$E[Y_i(1) | X_i = c] = \lim_{x \rightarrow +c} E[Y_i(1) | X_i = x] \tag{1}$$

$$E[Y_i(0) | X_i = c] = \lim_{x \rightarrow -c} E[Y_i(0) | X_i = x] \tag{2}$$

X_i represents the forcing variable, which deterministically assigns treatment. $Y(0)$ and $Y(1)$ represent the potential outcome of unit i under treatment and control conditions, respectively. In this case the treatment is to win the election within each coalition. More specifically, when X_i is greater than a cutoff point c , the unit is assigned to treatment. It is worth noting that the treatment assignment probability is either 0 or 1, conditional on X_i . Equation 1 and 2 imply that the conditional expectation of $Y(1)$ and $Y(0)$ at the cutoff point c can be approximated by taking the limit from above (below) when x approximates c . Therefore, the LATE could be written as follows:

$$E[Y_i(1) - Y_i(0) | X_i = c] = \lim_{x \rightarrow +c} E[Y_i(1) | X_i = x] - \lim_{x \rightarrow -c} E[Y_i(0) | X_i = x] \tag{3}$$

This means that the difference in the conditional expectation of $Y(1)$ and $Y(0)$ can be defined as the difference between the limits on both sides of the threshold. In other words, the LATE represents the predicted value of $Y(1)$ given the cutoff point $X_i=c$, minus the predicted value of $Y(0)$ when $X_i=c$.

We estimate the LATE of barely winning an election on the legislative behavior of the barely winners following Lee, Moretti, and Butler’s (2004) analysis of the US House of Representatives and several other papers that employ similar empirical strategies (e.g., Eggers and Hainmueller 2009; Galasso and Nannincini 2011; and, for an application to the Chilean context, Salas 2016). Moreover, we use the McCrary test in order to discard any possibility of electoral fraud. For both coalitions, there is no discontinuity in the density of the forcing variable (see appendix).

Our dependent variable is a latent ideology measure, estimated through the W-nominate package developed by Poole et al. (2011), which is typically used to build legislators’ ideal points in a yea/nay matrix of roll-call voting.³ Developed by MacRae (1958) and Cahoon,

3 Lee, Moretti, and Butler (2004) also used this package in one of their estimations.

Hinich, and Ordeshook (1976) the basic idea is that all legislators have an ideal point that represents their ideology. Legislators maximize utility by voting for the option that minimizes the distance between the yea/nay location and their ideal point, which is defined as an “error term” or a stochastic component.

The W-nominate package is the most popular method to recover legislators’ ideal points. The package estimates the underlying ideology for every legislator given a set of roll-call votes (the W-nominate package only considered roll-call votes where more than 2.5 percent of legislators voted with the minority side). We used the package to estimate a continuous measure of political ideology by using the matrix of roll-call votes, where higher scores mean a more conservative ideology. Indeed, table 2 shows the average W-nominate score for each party during all considered legislative periods. Clearly, both the LLPs and the PDC are closer to -1, while RN and the UDI are closer to 1.

Table 2. Mean and Median W-Nominate Index by Party in the Chamber of Deputies, 1998–2013

| Party | 1998–2002 | 2002–2006 | 2006–2010 | 2010–2014 |
|--------------------------------|-----------|-----------|-----------|-----------|
| LLP | -0.87 | -0.91 | -0.83 | -0.54 |
| PDC | -0.84 | -0.81 | -0.70 | -0.41 |
| RN | 0.55 | 0.64 | 0.61 | 0.66 |
| UDI | 0.83 | 0.88 | 0.85 | 0.84 |
| Average | -0.20 | 0.00 | 0.02 | 0.23 |
| # Nonunanimous roll-call votes | 685 | 793 | 890 | 1373 |

Source: Authors with data from Chilean Library of Congress <www.bcn.cl>. The total number of roll-call votes is 3,741. Each legislative period goes from 11 March to 10 March of the following year.

We aim to estimate the following equations:

$$RC_i = a + \beta_1(PDC\ share)_i + \beta_2(PDC)_i + \beta_3(cov)_i \tag{5}$$

$$RC_i = a + \beta_1(UDI\ share)_i + \beta_2(UDI)_i + \beta_3(cov)_i \tag{6}$$

In equations 5 and 6 the dependent variable is the latent ideology in roll-call voting (RC), measured through W-nominate; *PDC/UDI share* is a fourth-order polynomial of the within-coalition PDC/UDI vote share; *PDC/UDI* is an indicator variable equal to 1 if the PDC/UDI candidate was elected (obtained more than 50 percent within the coalition); and *cov*

is a set of district controls. The coefficient β_2 represents the LATE, meaning that the identified effect only applies to units close to the 50 percent threshold within the respective coalitions. We additionally estimate these parameters through bias-corrected local linear regression with optimal bandwidth, as developed by Calonico, Cattaneo, and Titiunik (2014).

Data

We used data from the Chilean Electoral Registry (Servicio Electoral, Servel) – which includes the vote share of every candidate by congressional district – for the 1997, 2001, 2005, and 2009 congressional elections. Two of those elections (2005 and 2009) were held concurrently with presidential elections. As shown above in table 1, between 1997 and 2013, a coalition secured both seats in only 35 (11.67 percent) of the 300 races. In the other 265 elections, seats were divided between the two leading coalitions or between one of the coalitions and a third-party candidate. In addition, we used roll-call data for all legislators in the four congressional periods. There were a total of 8,540 roll-call votes between 1998 and 2009, of which 3,741 were nonunanimous.⁴ The data is available at the Chilean Library of Congress; though we coded it ourselves. We used 383 legislator-level observations in all (184 for the Concertación and 199 for the Alianza), excluding districts where a coalition won both seats, a third-party candidate was victorious, two LLP members or an independent and an LLP competed within the Concertación, or an independent competed within the Alianza.

Finally, in order to check continuity at the 50 percent threshold, we added some pretreatment covariates, such as average years of schooling, average age, the log of the average household income, share of urban population, share of the population living in poverty, share of male population, share of people in the labor force, and share of married population. We obtained these pretreatment covariates from the Chilean Socio-economic Household Survey (CASEN) for the years 1998,⁵ 2001, 2003, and 2009. Table 3 displays the summary statistics for the pretreatment covariates.

4 We define a nonunanimous outcome as roll-call voting where at least more than 2.5 percent of legislators voted differently than the majority.

5 The data from CASEN 1998 was collected in 1997, concurrently with the election. Thus, I could not have been affected by the election.

Table 3. Summary Statistics Pretreatment Covariates

| Period | 1998–2002 | 2002–2006 | 2006–2010 | 2010–2014 | Total |
|----------------------------|-----------|-----------|-----------|-----------|-------|
| % Urban | 0.86 | 0.82 | 0.83 | 0.83 | 0.84 |
| Average age | 30 | 30.8 | 33.2 | 34.7 | 32.2 |
| % Married | 0.34 | 0.34 | 0.31 | 0.31 | 0.32 |
| Average years of schooling | 9.6 | 9.5 | 10 | 10.1 | 9.8 |
| % Labor participation | 0.47 | 0.45 | 0.48 | 0.45 | 0.46 |
| % Male | 0.49 | 0.49 | 0.49 | 0.48 | 0.49 |
| % Under poverty | 0.21 | 0.21 | 0.13 | 0.15 | 0.17 |
| Log household income | 12.9 | 12.9 | 13.3 | 13.4 | 13.2 |

Source: CASEN Survey for 1998, 2001, 2003, and 2009.

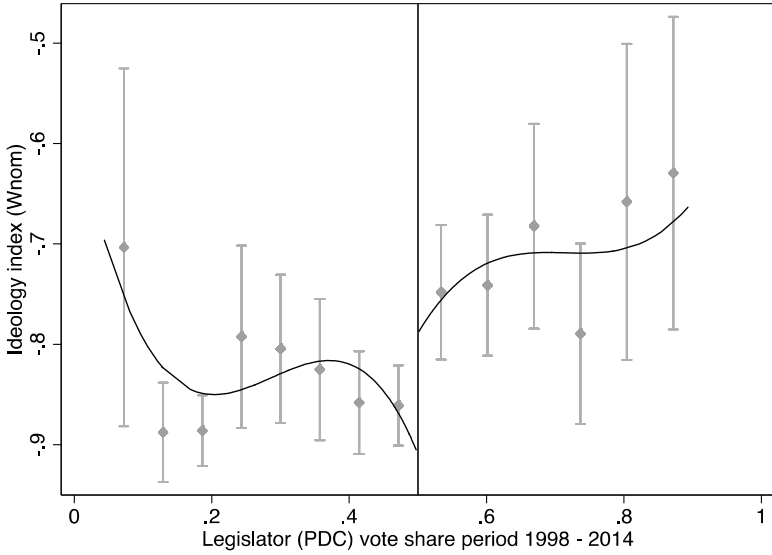
Results

Descriptive Analysis

As explained above, we aim to exploit the 50 percent threshold within the two dominant political coalitions: the center-left Concertación and the rightist Alianza. Thus, we present separate results for each coalition. Figures 1 and 2 show the relationships between the within-coalition vote shares obtained by the PDC and the UDI (x-axis), respectively, and latent ideology (y-axis) for the pooled data for the period 1998–2014. In the *W*-nominate index higher scores mean a more conservative ideology. To the right of the 50 percent threshold, the observed legislator belongs to the PDC (figure 1) or the UDI (figure 2). Below the cutoff point, the legislator belongs to the LLPs (figure 1) or the RN (figure 2). The line represents a local polynomial fit with confidence intervals.

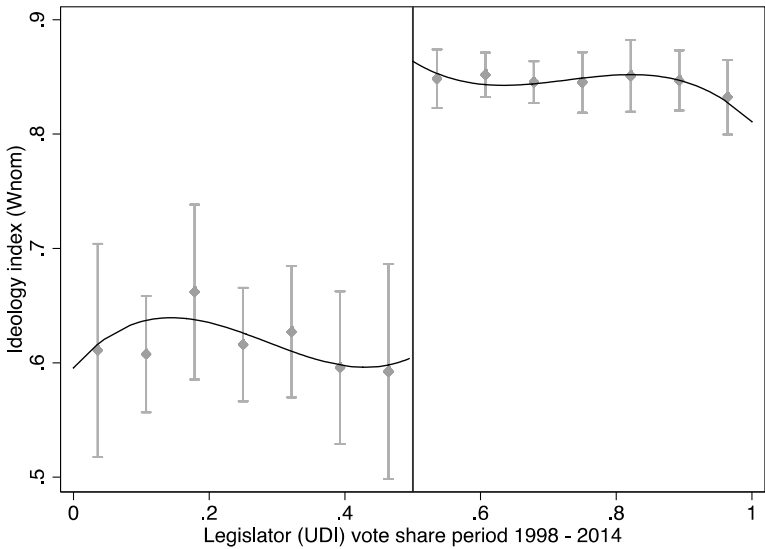
In figure 1 we observe a small but significant discontinuity at the 50 percent threshold, suggesting that the PDC legislators who barely won the election tended to vote in alignment with their party’s ideological preferences rather than with the preferences of the center-left median voter. In the Alianza the discontinuity is much more pronounced. As figure 2 shows, there is a large jump at the 50 percent threshold, suggesting that UDI legislators who barely won tended to vote much more conservatively than RN legislators who barely won. In this sense, the graphs prove the presence of discontinuities in both coalitions, although they are much greater within the Right than in the center-left.

Figure 1. Ideology Index and Legislator Vote Share within the Concertación



Source: Chilean Electoral Service and Library of Congress. The y-axis represents the ideology index built from the W-nominate package (Poole et al. 2011), where higher scores mean a more conservative ideology. The x-axis represents the PDC legislator vote share. We used 3,741 non-unanimous roll-call votes to estimate the ideology index and 215 races.

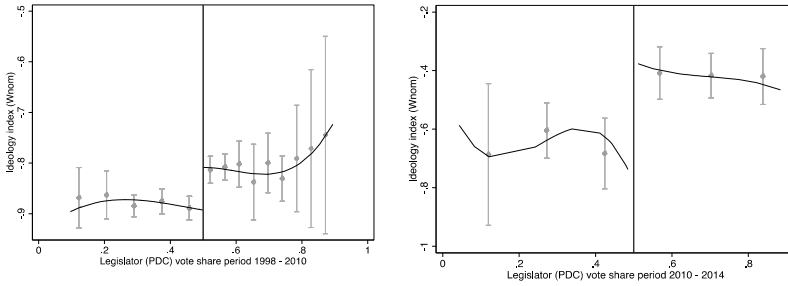
Figure 2. Ideology Index and Legislator Vote Share within the Alianza



Source: Chilean Electoral Service and Library of Congress. The y-axis represents the ideology index built from the package *W*-nominate (Poole et al. 2011), where higher scores mean a more conservative ideology. The x-axis represents the UDI legislator vote share.

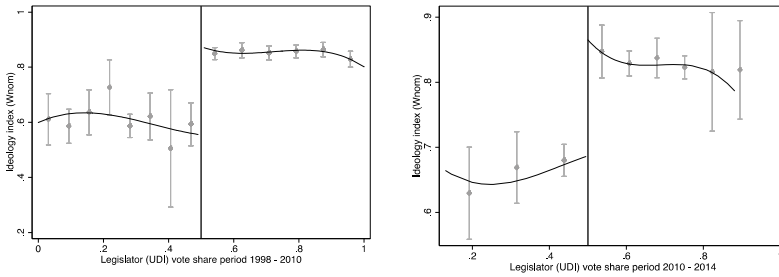
If we compare within the same coalition at two different periods, we observe an interesting pattern. As figure 3 shows, under the center-left Concertación governments (1998–2010), there is a small but significant discontinuity at the 50 percent threshold. This discontinuity widens significantly during the 2010–2014 period, which corresponds to the Alianza government. In the case of the Alianza legislators, we observe large discontinuities during both periods (figure 4), although it appears that the gap between barely winners from the UDI and RN is somewhat reduced in the 2010–2014 period. In this sense, it seems that for both coalitions, policy divergence was exacerbated when the parties were in opposition.

Figure 3. Ideology Index and Legislator Vote Share within the Concertación



Source: Chilean Electoral Service and Library of Congress.

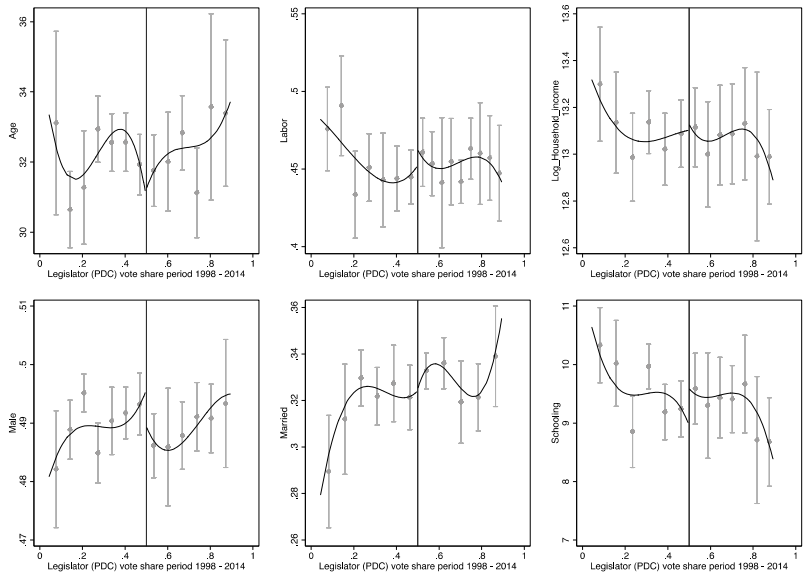
Figure 4. Ideology Index and Legislator Vote Share within the Alianza



Source: Chilean Electoral Service and Library of Congress.

To visually test the continuity assumption, we plot the relationship between six pretreatment covariates and both forcing variables. The covariates are the share of people in the labor force, average age, average years of schooling, the log of average household income, the share of male population, and the share of urban population. Figure 5 shows the analyses of these results, with the PDC vote share on the x-axis and the pretreatment covariates on the y-axis. Figure 6 replicates this analysis with the UDI vote share (x-axis). Figures 5 and 6 show that there is neither a significant nor substantive discontinuity in the predicted value at the respective thresholds.

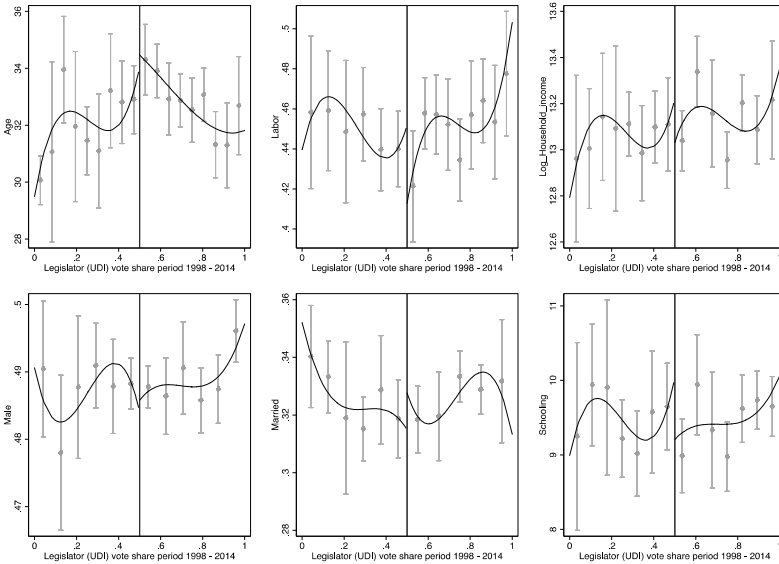
Figure 5. Six Pretreatment Covariates and Legislator Vote Share within the Concertación



Source: Chilean Electoral Service and CASEN survey.

Note: The y-axes represent eight different pretreatment covariates, such as average age, share of people in the labor force, the log of average household income, share of male population, share of married population, and average years of schooling. The x-axes represent the PDC legislator vote share.

Figure 6. Six Pretreatment Covariates and Legislator Vote Share within the Alianza



Source: Chilean Electoral Service and CASEN survey.

Note: The y-axes represent eight different pretreatment covariates, such as average age, share of people in the labor force, the log of average household income, share of male population, share of married population, and average years of schooling. The x-axes represent the UDI legislator vote share.

Inferential Analysis

Table 4 shows the results of the regression discontinuity estimation for the Concertación using different specifications. The first row represents the treatment effect, which is denoted by an indicator variable at the 50 percent threshold of the PDC vote share within the coalition. The first two columns show the coefficients of bias-corrected local polynomial regressions (Calonic, Cattaneo, and Titiunik 2014). The third and fourth columns show the estimated coefficients through a fourth-order polynomial. In both cases we estimated the reduced form and the covariate-adjusted model. Table 5 replicates the same estimation for the Alianza coalition.

Table 4. Regression Estimates within the Concertación, 1998–2013

| | RD robust | RD robust | 4th-order poly- nomial | 4th-order poly- nomial |
|------------------------|--------------|--------------|---------------------------|---------------------------|
| PDC 50 + | .097 | .155 | 0.99 | 0.172 |
| | .055 | 0.043*** | 0.035** | 0.024*** |
| Covariate- adjusted | No | Yes | No | Yes |

Note: The coefficient PDC 50 + represents a dummy variable equal to 1 if the PDC legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Table 5. Regression Estimates within the Alianza, 1998–2013

| | RD robust | RD robust | 4th-order poly- nomial | 4th-order poly- nomial |
|------------------------|--------------|--------------|---------------------------|---------------------------|
| UDI 50 + | 0.224 | 0.265 | 0.26 | 0.254 |
| | 0.055*** | 0.053*** | 0.048*** | 0.048*** |
| Covariate- adjusted | No | Yes | No | Yes |

Note: The coefficient UDI 50 + represents a dummy variable equal to 1 if the UDI legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Consistently, there is a statistically significant and small effect within the Concertación, which ranges from 0.097 to 0.176. The coefficient is statistically significant in three of the four specifications. This means that at the 50 percent threshold, a PDC legislator was around 0.1 units more conservative than an LLP legislator. This seems to be consistent with the distinct historical roots of the PDC and the LLPs. However, there is a much larger overall effect within the Alianza. Table 5 shows that the treatment effect fluctuates between 0.22 and 0.26 units in the ideological measure, meaning that UDI legislators elected by a slim margin were substantially more conservative than their RN counterparts.

Why was ideological divergence larger in the Alianza than in the Concertación, whose parties were at odds at crucial moments in recent history? A plausible explanation could be related to the presidential nature of the Chilean political regime. As mentioned above, the president has the exclusive right to introduce tax-related bills. Thus, the executive could exert pressure on legislators to support the president’s agenda. If this is the case, parties in government may have voted more as a block when supporting presidential policies, thus attenuating partisan differences; however, if these same parties were in opposition, legislators may have voted more in line with party preferences. In order to test this hy-

pothesis, we estimated the regression discontinuity separately for the Concertación and Alianza governments.

Table 6. Regression Estimates within the Concertación during Concertación Governments, 1998–2010

| | RD robust | RD robust | 4th-order polynomial | 4th-order polynomial |
|--------------------|------------------|------------------|-----------------------------|-----------------------------|
| PDC 50 + | 0.094 | 0.112 | 0.083 | 0.12 |
| | 0.030** | 0.021*** | 0.014*** | 0.015*** |
| Covariate-adjusted | No | Yes | No | Yes |

Note: The coefficient PDC 50 + represents a dummy variable equal to 1 if the UDI legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Table 7. Regression Estimates within the Concertación during Alianza Government, 2010–2014

| | RD robust | RD robust | 4th-order polynomial | 4th-order polynomial |
|--------------------|------------------|-----------------------------------------------|-----------------------------|-----------------------------|
| PDC 50 + | 0.249 | Not enough observations for local estimations | 0.311 | .398 |
| | .123* | | 0.115** | 0.096*** |
| Covariate-adjusted | No | Yes | No | Yes |

Note: The coefficient PDC 50 + represents a dummy variable equal to 1 if the UDI legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Table 6 shows the estimated coefficients for the Concertación period (1998–2010), when the PDC and LLPs held power. Table 7 displays the coefficients for the 2010–2014 period under the Alianza government. Clearly, the gap between the PDC and the LLP is much larger in the latter period, meaning that the ideological differences between the PDC and the LLPs were more pronounced when they were in opposition.

Table 8. Regression Estimates within the Alianza during Concertación Governments, 1998–2010

| | RD robust | RD robust | 4th-order polynomial | 4th-order polynomial |
|--------------------|-----------|-----------|----------------------|----------------------|
| UDI 50 + | 0.25 | 0.277 | 0.306 | 0.301 |
| | .081** | 0.098** | 0.061*** | 0.064*** |
| Covariate-adjusted | No | Yes | No | Yes |

Note: The coefficient UDI 50 + represents a dummy variable equal to 1 if the UDI legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Table 9. Regression Estimates within the Alianza during Concertación Governments, 2010–2014

| | RD robust | RD robust | 4th-order polynomial | 4th-order polynomial |
|--------------------|-----------|-----------|----------------------|----------------------|
| UDI 50 + | 0.192 | 0.219 | 0.164 | 0.149 |
| | 0.036*** | 0.36*** | 0.032*** | 0.035*** |
| Covariate-adjusted | No | Yes | No | Yes |

Note: The coefficient UDI 50 + represents a dummy variable equal to 1 if the UDI legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

A similar pattern is observed in the Alianza. When in opposition (table 8), the estimated ideological gap between the UDI and RN was between 0.24 and 0.3 units. However, when these parties became part of the ruling coalition (table 9), the gap reduced to 0.14–0.21. In this sense, for the parties of the two major political alliances, being in the ruling coalition induced them to vote more similarly to their list companions and closer to the preferences of their coalitions’ median voters. In this respect parties behave more like a unified block while they are in government.

To corroborate the previous hypothesis, we employ a RDD on a period-by-period basis, with each period corresponding to a different congressional session. For the Concertación coalition (table 10), we can clearly observe that the coefficient of a barely elected PDC legislator substantially increases for the 2010–2014 period. Moreover, we observe that the ideological gap was practically nonexistent for the 1998–2002 period; although it started to increase in the subsequent years. Indeed, in the last period under Concertación governments (2006–2010), the average difference between a PDC and a LLP legislator was 0.183. This suggests that the executive apparently lost some of its capacity to discipline the coalition parties.

Table 10. Regression Estimates within the Concertación by Congressional Term

| | 1998–2002 | 2002–2006 | 2006–2010 | 2010–2014 |
|--------------------|-----------|-----------|-----------|-----------|
| PDC 50 + | 0.027 | 0.101 | 0.183 | 0.311 |
| | 0.020 | 0.023*** | 0.025*** | 0.115** |
| Covariate adjusted | No | No | No | No |

Note: The coefficient PDC 50 + represents a dummy variable equal to 1 if the UDI legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Table 11. Regression Estimates within the Alianza by Congressional Term

| | 1998–2002 | 2002–2006 | 2006–2010 | 2010–2014 |
|--------------------|-----------|-----------|-----------|-----------|
| UDI 50 + | 0.298 | 0.368 | 0.26 | 0.164 |
| | 0.107* | 0.14* | 0.046*** | 0.032*** |
| Covariate adjusted | No | No | No | No |

Note: The coefficient UDI 50 + represents a dummy variable equal to 1 if the UDI legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

In the Alianza a similar pattern emerges (table 11). While in opposition (1998–2002, 2002–2005, and 2006–2010), there was a substantive gap between barely elected UDI and RN legislators, meaning that the legislative behavior of UDI legislators was consistently much more conservative than that of RN legislators. Indeed, the gap fluctuated between 0.26 and 0.36. However, this trend completely reversed in the 2010–2014 period and decreased to 0.16 – precisely when the UDI and RN were the two main government parties. Again, it seems like the presidential nature of the Chilean political institutions induced parties to act more as a block and target the median voter while serving as members of the ruling coalition.

Robustness Checks

Tables 12 and 13 show the placebo regressions used in order to test possible discontinuities at the 50 percent threshold. We used nine observed confounders as dependent variables in the Concertación and the Alianza. The coefficients were estimated through bias-corrected local polynomial regressions (Calonico, Cattaneo, and Titiunik 2014). As the tables show, there is not a significant discontinuity in either of the observed confounders. Thus, we are confident that our treatment effect estimates have been correctly identified and can be attributed to barely winning an election rather than any other factor.

Table 12. Placebo Regressions within the Concertación

| Dependent Variable | B / SE |
|------------------------------------------|--------|
| Log household income | -.089 |
| | .171 |
| Share of population living under poverty | -.018 |
| | .061 |
| Share of female population | .0066 |
| | .007 |
| Share of labor participation | .010 |
| | .022 |
| Average years of schooling | -.086 |
| | .722 |
| Share of married population | -.019 |
| | .018 |
| Average age | -.410 |
| | 1.051 |
| Share of urban population | .0073 |
| | .083 |

Note: Each coefficient represent a dummy variable equal to 1 if the DC legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Table 13. Placebo Regressions within the Alianza

| Placebo Estimates Alianza | B / SE |
|------------------------------------------|--------|
| Log household income | -.257 |
| | .25282 |
| Share of population living under poverty | .025 |
| | .054 |
| Share of female population | .0019 |
| | .0061 |
| Share of labor participation | -.054 |
| | .029 |
| Average years of schooling | -.869 |
| | .934 |
| Share of married population | .0202 |
| | .012 |
| Average age | .730 |
| | 1.30 |
| Share of urban population | -.177 |
| | .128 |

Note: Each coefficient represent a dummy variable equal to 1 if the UDI legislator obtained more than 50 percent of the vote within the coalition. Standard errors are clustered at the district level. * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Discussion and Conclusions

In this paper we demonstrated the applicability of RDDs in close elections in open-list PR systems with small district magnitudes. By exploiting the dynamic of internal competition in the Chilean electoral system, we estimated LATEs at the 50 percent threshold for the two major coalitions. Both the descriptive and inferential analyses showed that in both the Concertación and the Alianza, there is a substantive and significant discontinuity at the 50 percent threshold – though this tends to be higher in the Alianza. This implies that, overall, within-coalition competition with majoritarian rules does not have a significant effect on legislator’s policy positions in the four major parties in Chilean politics (i.e., the PDC, LLPs, UDI, and RN), since narrow winners tend to vote along partisan lines rather than according to the position of their coalition’s median voter. Thus, there is strong causal evidence in favor of the policy divergence hypothesis.

The extent of the divergence was not constant over time. We observed in both coalitions that within-coalition divergence was much lower when parties were in government than when they were in opposition. In fact, there was total convergence between the PDC and the LLPs during the 1998–2002 period. This intriguing result suggests that the presidential nature of the Chilean political system induces government parties to converge more on the median voter and push for the president’s platform. The evidence presented here strongly indicates that this dynamic is behind the higher degree of overall divergence observed in the Alianza compared to the Concertación. During the period considered in this paper, the Alianza was in opposition in three of the four legislative terms, meaning that they had fewer incentives to converge on a single policy position. In contrast, the Concertación was in power from 1998–2010, precisely the period when the PDC and the LLPs exhibited a higher degree of convergence.

Consistent with Lee, Moretti, and Butler’s (2004) results, we show that – generally speaking – legislators seem to pursue their own policy agenda, which is not really modified by the coalition’s median voter. In Chile’s presidential regime, however, the evidence shows that parties tended to converge more when they were part of the ruling coalition, probably because they were seeking to support the president’s agenda. In this sense our main substantive contribution is that we have introduced new variables that alter a legislator’s policy stance: the nature of the political regime and the government–opposition dynamic. More concretely, we have shown that in a presidential regime, parties from the ruling coalition have greater incentives to converge than do opposition parties.

To advance this research agenda, we propose five suggestions: First, we could expand the number of years of roll-call votes and estimate the overall effect for a larger time frame, including data points from the early 1990s. This would allow us to see whether the LLPs and PDC also converged during the first two legislative terms (1990–1998) under Concertación governments. Second, we could estimate the effects of within-coalition competition in Chile on different outcomes, such as the result in the next election (incumbency advantage) or the selection of future candidates. Third, we could explore specific policy areas and analyze the degree of policy convergence on, for example, economic versus moral issues. Fourth, we could apply the analysis to different electoral systems. Since we have demonstrated that RDDs can be applied to small magnitude open-list PR systems in the event of close elections, there might be other PR systems that can also be used to test the validity of the policy convergence hypothesis. Fifth, we could use another case study to test how generalizable the main results of this paper are. For example, we could explore the policy convergence hypothesis in a less presidential country, where legislators presumably face less pressure to support the president's agenda.

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Appendix

Table A.1. McCrary Test

| Category | McCrary test |
|---------------------------------------------------|--------------|
| Discontinuity estimate (log difference in height) | .076 |
| PDC vote share | (.297) |
| Discontinuity estimate (log difference in height) | -0.345 |
| UDI vote share | (.388) |

Note: P-values in parentheses.

¿Los votantes afectan las políticas públicas? Competencia intra-coalición en el sistema electoral chileno

Resumen: Las elecciones que se ganan por estrecho margen podrían llevar a convergencia en las políticas públicas en la medida que los legisladores electos por una estrecha votación tienen más probabilidades de adoptar posiciones moderadas (Downs 1957). No obstante, Lee, Moretti y Butler (2004) encontraron que la competencia electoral no afecta las preferencias de políticas públicas de los legisladores en los Estados Unidos, cuestionando así el paradigma del votante mediano. Para ayudar a discernir la paradoja, estimamos el efecto de elecciones con estrecho margen en las posiciones de políticas públicas que adoptan después los legisladores, bajo distintas reglas electorales. Con el sistema de representación proporcional de dos diputados por distrito de Chile, usamos las dinámicas de competencia intra-coalición para testear ambas hipótesis. Usando el margen de victoria en las 383 elecciones a nivel de distrito en 4 elecciones legislativas y los 3741 votos en sala de los 120 miembros de la Cámara de Diputados entre 1998 y 2014, reportamos que la competencia electoral no llevó a convergencia de políticas públicas, ni bajo el gobierno centroizquierdista Concertación ni bajo el mandato de la derecha Alianza. La convergencia en políticas públicas responde a incentivos electorales, pero también está condicionada por la naturaleza del régimen político (presidencial o parlamentario) y por las dinámicas entre el gobierno y la oposición.

Palabras clave: Chile, votante mediano, preferencias de los legisladores, sistema de representación proporcional, regresión discontinua