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The effect of campaign spending, district magnitude and incumbency when electoral rules create districts with old and new voters: the case of Chile in 2017

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Abstract

The impact of campaign spending, generally greater for challengers than for incumbents, is conditioned by electoral rules and incumbency—normally seen as a dichotomous condition. But when an electoral reform changes the composition of districts, a legislator is an incumbent only in the section of the new district. In Chile, the 60 open-list proportional representation 2-member districts used until 2013 were combined to create 28 open-list PR districts for the 2017 election, thus making some legislators enjoy a higher degree of incumbency. With data from 1430 candidates in the 2013 and 2017 legislative elections, we report a nonlinear positive effect of campaign spending on electoral success in all district magnitudes. Campaign spending has a higher impact as the number of open seats increases and a stronger effect for incumbents whose old districts comprise a larger share of the new districts. Campaign spending matters differently for challengers and incumbents given the moderating effect of district magnitude, the number of open seats and the percentage of incumbency.

Introduction

There is consensus that campaign spending matters more for challengers than for incumbents and that electoral rules affect the impact of spending (Samuels 2001b; Benoit and Marsh 2010). The incumbency advantage is based on stronger name recognition enjoyed by elected officials and on their ability to tap on public funds for constituency service purposes (Green and Krasno 1988; Ansolabehere and Gerber 1994). When an electoral reform modifies district boundaries and district magnitude (DM), districts have old and new voters. In those cases, incumbency is not a dichotomous condition, and the impact of campaign spending can be assessed for different degrees or levels of incumbency. Similarly, when the size of the

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assembly increases, changes in DM alter the availability of open seats. The number of open seats depend on whether incumbents run for re-election and on how many new seats are in the redrawn district. If campaign spending matters more for challengers than for incumbents, districts with more open seats should see a bigger impact of campaign spending on electoral success.

Until 2013, Chile used an open-list proportional representation (OLPR) system for legislative elections. In 2017, an electoral system reform increased the number of seats in the Chamber to 155. Old districts were merged into 28 new districts for the Chamber. No old district was split into different new districts. Thus, most legislators who sought reelection were incumbents only in a portion of the new district. As the size of both chambers increased, there was a varying number of new open seats in some districts. We use data for 470 candidates to the Chamber of Deputies in 2013 and 960 in 2017—to assess the effect of campaign spending on electoral success—measured as individual vote share and an indicator for winning candidates—under different degrees of incumbency and different availability of open seats.

The effect of campaign spending

Campaign spending impacts electoral success. As incumbents have access to tools other than campaign funds to build constituency support and name recognition (Cain, Ferejohn, and Fiorina 1987), campaign spending has a stronger impact on challengers than on incumbents (Jacobson 1978). Because of the incumbent advantage, challengers find it more difficult to raise funds. That limits their electability, but also produces a higher impact of campaign spending for challengers than for incumbents (Abramowitz 1991). As a result, campaign spending by incumbents is often reactive to the spending of challengers (Jacobson 1985), though as incumbents accumulate longer tenures, the impact of their spending declines (Erikson and Palfrey 1998).

When challengers actively spend in their campaigns, campaign spending by incumbents increasingly affects their electoral success (Green and Krasno 1988). The difficult relationship between campaign spending and electoral performance stems from the fact that though electoral performance may depend on campaign spending, the money spent in campaigns might depend on expected performance—as campaign donations and funding tend to flow to candidates who are expected to do well (Cox and Thies 2000). As there is uncertainty on the electoral support they will receive, candidates often end up spending more than the optimal amount (Alexander and Federman 1989).

In addition, candidate attributes, electoral rules, district-specific dynamics and the electoral and political cycles also affect the impact of campaign spending (Levitt 1994). The campaign spending effect might be higher for candidates from a popular ruling party than for candidates from the

unpopular opposition. Likewise, the effect of campaign spending is more limited under mandatory voting, as campaigns do not need to engage in get-out-the-vote efforts (Ben-Bassat, Dahan, and Klor 2015) or in negative campaigning to decrease turnout among those who are more likely to vote against the candidate (Lau and Rovner 2009). The abilities and appeal of candidates—especially challengers—also impact campaign spending effectiveness as charismatic candidates or those with special abilities will see a higher return on their spending (Green and Krasno 1988). In short, there are things that money can't buy.

In democracies with OLPR rules—where voters can choose candidates, not just a party list—campaign spending is more efficient for challengers than for incumbents (Benoit and Marsh 2010). For example, in Brazil, campaign spending helps both challengers and incumbents, since many incumbents enjoy less name recognition in larger magnitude PR districts (Samuels 2001b). Though studies on the impact of campaign spending in emerging democracies report contradictory findings—largely due to different electoral rules and district magnitudes (Treisman 1998; Samuels 2001a), given that campaigns matter (Jacobson 2015) and campaigns are costly, higher campaign spending, should *ceteris paribus*, give an advantage to candidates who share similar traits.

Changes in the electoral system and in campaign spending rules should impact the effect of campaign spending on electoral success. The mechanical effect of DM is a strong determinant of the type of competition (Duverger 1954). Cox (1997) synthesized Duverger's law (Riker 1982) by claiming that the DM constitutes an upper bound limit (DM+1) on the number of competitive candidates in every district. Thus, "the vote share required for very small parties to gain representation will for the same reason fall lower and lower as magnitudes increase" (Rae 1995, 69).

DM impacts campaign fundraising. In OLPR systems, when DM increases, candidates raise less money and need to broaden their base of funders (Curry, Herrnson, and Taylor 2013). DM also affects the behavior of voters (Lachat, Blais, and Lago 2015) and legislators (Taylor, Herrnson, and Curry 2018), with more strategic behavior opportunities for voters and candidates as the DM increases. The effect of campaign spending on electoral success is moderated by DM. As DM increases, the effect of campaign spending levels off for incumbents and challengers (Maddens et al. 2006). As DM increases, candidates react by spending more when they perceive competition from within their lists more so than perceived competition from candidates in other lists (Samuels 2001c).

When the DM increases, the vote threshold required to win a seat decreases and, consequently, the effect of campaign spending on electoral performance should decrease—at least when measured as the percentage of votes received by each candidate. In closed-list systems, the party vote

shares matters. But in OLPR systems, both the individual and party vote shares determine the likelihood of winning a seat. Candidates with sufficiently large vote shares might win a seat regardless of their party vote shares, but many candidates with lower vote shares win seats because of the combined votes of all the candidates from their party. Thus, as seats are assigned to parties first and to candidates within parties later, a less popular candidate in a district with a larger magnitude might end up winning on the coattails of more popular list partners. As a result, the impact of individual campaign spending should decrease as the DM increases. Thus, our first hypothesis is that:

H1: As the district magnitude increases, the effect of campaign spending for individual candidates in an OLPR system decreases.

It has been well-established that incumbents enjoy an electoral advantage due to their higher name recognition, constituency service and their overall ability to deter strong challengers (Erikson 1971; Cox and Katz 1996). The presence of incumbents makes it more difficult for challengers to get a higher vote share and win a seat. Incumbents normally enjoy more and better media coverage which increases the likelihood of winning votes among the lesser informed and less ideological individuals (Prior 2006). Though name recognition might help well-known challengers, the incumbency advantage has a stronger effect than mere name recognition (Cam and Zeichmeister 2013).

The effect of the incumbency advantage is less clear in OLPR systems, with some studies finding a negative or no impact (Golden and Picci 2015) and others—like in Chile—showing a positive impact of incumbency (Salas 2016). The dynamics that account for winning a seat in OLPR systems are associated to the DM. The more open seats, the fewer the hurdles for challengers to win a seat. As a result, the return of campaign spending should be higher when the number of open seats increase. When the assembly size increases and the electoral map changes, there are more open seats. As the number of open seats increases, there are more “free” seats for challengers. Thus, our second hypothesis states that:

H2: The effect of campaign spending is bigger in districts where there are more open seats.

When the electoral map is redrawn, incumbents have new and old voters in their districts (Ansolabehere, Snyder and Stewart, 2000). In that sense, there are different degrees of incumbency. When the new districts are drawn by combining—not dividing—old districts, the incumbency condition applies only to a portion of the new district. Incumbents whose old districts represent a larger share of the new district should enjoy a stronger incumbency advantage and, thus, campaign spending should be less relevant. In turn,

incumbents whose old district is a small fraction of the new district have less of an incumbency advantage and, thus, their campaign spending should be more consequential in their electoral performance. If an incumbent has mostly new voters in the redrawn district, that incumbent will not benefit from name recognition and constituency service as much as an incumbent whose new district has mostly old voters. Consequently, under those conditions, the impact of campaign spending for that partial incumbent should be higher.

H3: The effect of campaign spending increases as the percentage of incumbency decreases.

The Electoral rules and electoral reform in Chile

Since democratic elections were restored in 1989, Chile has held legislative elections every four years—since 2005, legislative and presidential elections are held concurrently. From 1989 to 2013, there was an OLPR system with a fixed DM of 2 for all 60 districts in the Chamber of Deputies. The low DM forced parties to form multiparty coalitions to maximize their chances of winning seats (Magar, Rosenblum, and Samuels 1998). Multiparty coalitions had two candidates in each district and seats were assigned to coalitions using the D'Hondt seat allocation formula.

In 2015, an electoral introduced a larger DM and a candidate gender quota of 40% per coalition (Gamboa and Morales 2016; Carey 2016). The new system increased the size of the Chamber to 155. The old 60 Chamber of Deputies districts were combined into 28 new districts—every old district was included in its entirety into a new and larger district—with a DM varying from 3 to 8 seats. The 2015 reform also introduced changes to the campaign finance law, limiting individual contributions, banning corporate contributions, and introducing a larger subsidy in government allocated funding for women candidates. The reforms were put into place in the 2017 legislative election when parties readily adapted to the increase in DM and the old 2-coalition system was replaced by a larger number of coalitions, especially among leftwing parties.

The most important reforms were the increase in the number of seats in the legislature and the adoption of a more permissive PR system. The larger DM changed the dynamics of competition, by fostering the formation of new political parties and making it easier for existing parties to abandon the coalitions they normally ran under to form new coalitions. A larger district magnitude established a higher upper bound for the number of competitive parties in every district. As most old districts were merged into fewer new districts, the incumbency condition also changed. For every incumbent, the old districts represented only a fraction of the population of the new district.

Thus, incumbency condition in 2017 was no longer a dichotomy but a percentage that ranged from 20% to 100% (more on this below). Since the overall number of seats also increased, there was a larger number of open seats in 2017.

The 2013 and 2017 legislative elections

From 1990 until 2017, Chile's political system was structured around two large and stable multiparty coalitions, the center-right Alianza and the center-left Concertación. In 2013, the Concertación—comprised of the centrist Christian Democratic Party (PDC) and the leftists Socialist Party (PS), Party for the Democracy (PPD) and Radical Party (PR)—adopted the name of New Majority when the Communist Party joined the coalition. That year, its presidential candidate, Michelle Bachelet, comfortably won the presidential election runoff.

With the 2015 electoral reform, the 2017 election tested the stability of the institutionalized two-coalition system. New Majority split into a coalition led by the PDC and another comprised of leftwing parties, each with its own presidential candidate. In the runoff vote, the PDC endorsed the New Majority presidential candidate. A new more radical leftwing coalition, the Broad Front, also endorsed the New Majority presidential candidate in the runoff election in 2017, reflecting the new leftwing coalitions were still willing to unite against the rightwing coalition. In the runoff election, the Alianza presidential candidate prevailed, regardless. As [Table 1](#) shows, the combined seat share of the splintered former New Majority coalition gave center and leftwing parties a majority in the Chamber of Deputies for the 2018–2022 term.

[Table 2](#) shows the presence of incumbents and challengers in both legislative elections. The success rate of incumbents was marginally lower in 2017

Table 1 . Coalition Candidates and Elected Members, Chamber of Deputies, Chile, 2013–2017

Coalition	Candidates	Elected	%
2013			
Alianza	120	49	40.1
New Majority*	118	67	56.7
Broad Front	–	–	–
Others	232	4	4.1
Total	470	120	100
2017			
Alianza	182	72	46.4
New Majority*	179	57	31.8
Broad Front	168	20	12.9
Others	331	6	3.8
Total	960	155	100

*Including the PDC.

Source: Compiled by authors with data from the Electoral Service.

—under the more permissive electoral system—than in 2013. After all, the incumbency condition in 2017 was a range, as an incumbent’s old district represented only a portion of the newly created districts.

Table 3 shows campaign spending, as a percentage of the maximum allowed in each district, by coalitions in both elections. The maximum allowed is set based on the number of registered voters in each district. As it has been common in elections in Chile, Alianza candidates spend significantly more than candidates from the other coalitions, reflecting the closer links of Alianza parties with the business sector and higher income Chileans (Acevedo and Navia 2015; Morales and Piñeiro 2010). There was lower spending in 2017, as the maximum allowed for each district increased when new larger districts were created. In 2017, candidates from the new Broad Front coalition spent significantly less than candidates from the traditional coalitions, though those who won seats in the Broad Front spent more than the other candidates of that emerging coalition.

Methodology

We assess the effect of campaign spending in interaction with different electoral rules features on the electoral success of the 1430 candidates for the Chamber of Deputies in 2013 and 2017. We collected the data on the vote share for all candidates running in the respective legislative elections from the Electoral Service.

Our dependent variable is electoral success. Studies on incumbency advantage in single-member districts normally use as dependent variable the vote share differential between the elected candidate and the runner-up (excluding districts where third party candidates received a high vote share and/or accounting for national swings in support for the incumbent’s

Table 2 . Incumbents and Challengers in Chamber of Deputies Elections, 2013–2017

Coalition	Incumbents			Challengers		
	#	Winners	%	#	Winners	%
2013						
Alianza	42	33	78.6	77	16	20.8
New Majority*	43	41	95.3	75	26	34.7
Broad Front	—	—	—	—	—	—
Others	5	2	40.0	228	2	0.9
Total	90	76	84.4	380	44	11.6
2017						
Alianza	31	27	64.5	151	45	29.8
New Majority*	40	29	72.5	239	28	11.8
Broad Front	3	3	100.0	165	17	10.3
Others	2	2	100.0	329	4	1.2
Total	76	61	80.2	884	94	10.6

*Including the PDC.

Source: Compiled by authors with data from the Electoral Service.

Table 3 . Campaign Spending by Coalitions, 2013–2017

Coalition	# Candidates	Average campaign spending	Average campaign spending among winners
2013			
New	118	26.2	31.2
Majority			
PDC			
Alianza	120	33.3	47.9
Broad Front	–	–	–
Others	215	2.7	31.3
Total	470	16.4	38.0
2017			
New	175	17.4	25.6
Majority			
PDC	121	11.4	30.7
Alianza	182	19.8	30.3
Broad Front	168	0.5	16.0
Others	303	2.6	28.1
Total	960	10.1	27.1

Source: Compiled by authors with data from the Electoral Service.

party in presidential or legislative elections) (Erikson 1971, 396–397). However, in OLPR elections, the individual vote share for a candidate is not the only variable that impacts his or her chances of being elected. As seats are assigned to parties/coalitions based on the combined vote share of all the parties/coalition candidates, a candidate can win a seat on the coattails of popular running mates. While the candidate's vote share matters, the party/coalition's vote share matters as well. Thus, we depart from the standard measure of electoral success in this type of studies and use two different indicators: the vote share received by the candidate in his or her district and as an indicator variable if the candidate won a seat.

For the three hypotheses, the main independent variable is campaign spending. There are different ways of measuring campaign spending. Prior studies have used the amount of money it takes to win a vote and the spending by each candidate as a percentage of the total spending in each district (Morales and Piñeiro 2010). Yet, as Acevedo and Navia (2015) argue for the case of Chile, those ways to measure spending endogenize the impact of the effectiveness of campaign spending—as candidates might spend a lot but still receive fewer votes because other candidates in their districts spent even more. Thus, we follow their recommendation and use the amount of money spent by each candidate as a percentage of the maximum allowed in each district. That way, the indicator for campaign spending by each candidate is not affected by how much money other candidates spend in each district.

For the first hypothesis, we also use DM as an independent variable. The DM in 2013 was the same for all 60 districts: 2 seats. In 2017, the DM varied from 3 to 8 in the 28 districts. We also created an interaction variable

to assess the combined effect of campaign spending and DM on electoral success. We include an interaction effect of campaign spending and DM in the models.

For the second hypothesis, we also use the number of open seats as an independent variable. We collected information on the number of incumbents running for re-election to identify the number of open seats in every district. In 2017, as districts were redrawn, we counted the number of incumbents running for re-election in the old districts that merged into the new ones to identify the open seats. Thus, if a new district was comprised of two old districts where 3 of the 4 incumbents were running for reelection, and the DM for the new district was 8, that district had 5 open seats. In 273 cases, the candidate was running in a district with no open seats, whereas for 301 candidates, there was 1 open seats in their districts. In 334 cases there were 2 open seats, in 136 cases there were 3 open seats, in 299 cases there were 4 open seats and in 87 cases there were 6 open seats. We also created an interaction variable between the number of open seats and campaign spending.

For the third hypothesis, we also use incumbency as an independent variable. We use the standard way of measuring incumbency (whether the legislator currently represents that district) and an alternative way that captures the fact that most districts were redrawn under the new electoral system. Studies on incumbency advantage after decennial redistricting in the U.S. House of Representatives encounter a similar problem—as many districts include old voters and new voters (those that reside in the part of the district added in the redrawing of the maps). Ansolabehere, Snyder and Stewart (2000) propose a way to measure the incumbency advantage in single member districts accounting for the fact that incumbents are so only in part of the newly drawn district. We follow their logic and propose a way to measure incumbency advantage in OLPR systems that get redrawn. Since there are old and new voters in the redrawn district, we use different indicators for incumbency. We use the candidate vote in the previous election as a percentage of the voters in the new district (thus, a candidate who received 20% in a district that now comprised 50% of the new district is coded as receiving 10% in the new district). We also use a dummy variable to indicate whether the candidate is an incumbent in any part of the new district. The results for those two indicators are included in the appendix. Finally, we estimated the population percentage of the new district comprised by the population of the old district. Thus, if an incumbent came from a district that represents 32% of the new district's population, that incumbent had a 32% incumbency condition. Out of the 1470 cases, there were 169 incumbents. Of them, 96 were incumbents in 100% of the district, either because they were incumbents in the 2013 election or because they were incumbents in 2017 in districts that were not altered by the electoral reform. The other 73

incumbents came from old districts than comprised between 20 and 69% of the new districts in 2017. We assign them an incumbency percentage that equals the share of the old district in the new district. We also created an interaction variable for campaign spending and the percentage of incumbency.

Since incumbency is an important predictor of electoral performance, we also estimated incumbency with three alternative indicators, the vote share for each incumbent in the previous election, the vote for each incumbent in the previous election as a share of the electorate in the current election and a dummy variable for whether the candidate was an incumbent. To simplify our discussion in the inferential analysis section, the models with those results are shown in the appendix.

As control variables, we use an indicator variable for gender (women), indicator variables for candidate from Alianza and New Majority (including the PDC in 2017) coalitions, the number of consecutive previous terms served in the Chamber of Deputies by each candidate (for challengers, that takes the value of 0). Though there are 3 cases of legislators who represented a district in previous non-consecutive terms, we only classify as incumbents those that were elected in the previous election. We also include the number of municipalities that comprise each district (as each municipality has a mayor, the larger the number of municipalities the more complex the challenge for candidates to conduct an effective campaign), and the population of each district (since there is malapportionment in Chile, different populations present different challenges to candidates campaigning for a seat). Table 4 shows the descriptive statistics for all the variables for the 1430 candidates. For the inferential analysis, we estimated an ordinary least square (OLS) regression on the vote share of each candidate and a logistic regression on whether the candidate won or not a seat. The appendix includes additional regressions estimations that we explain below.

Table 4 . Descriptive Statistics for the Independent and Dependent Variables

Variables	N	Mean	Std dev	Min	Max
DV: Vote share	1,430	5.854	8.502	0.0263	51.37
DV: Elected	1,430	0.192	0.394	0	1
IV: Campaign spending	1,430	0.122	0.157	0	1
(H1) DM	1,430	4.687	2.311	2	8
(H2) Open seats	1,430	2.164	1.689	0	6
(H3) % incumbency	1,430	0.580	0.282	0	1
Women	1,430	0.341	0.474	0	1
Large coalitions indicator	1,430	0.501	0.500	0	1
# Municipalities in district	1,430	10.12	6.094	1	26
# Previous consecutive terms	1,430	0.242	0.856	0	7
Log population	1,430	13.06	0.663	11.50	14.19
District number	1,430	18.95	13.87	1	60

Source: Compiled by authors with data from the Electoral Service.

Results

To test the hypotheses, Table 5 presents two ordinary least squares (OLS) models where the dependent variable is the vote share for each candidate and two logit estimations where the dependent variable is whether the candidate won a seat. The independent variables of interest for are campaign spending, DM, open seats and the percentage of incumbency. We also include interaction effects for campaign spending with DM, open seats and percentage of incumbency. In the appendix, we present alternative models that include different indicators for incumbency. The results of those models are similar to those we present below.

As expected, in all models, campaign spending has a positive effect on electoral performance. Candidates who spend more get a higher vote

Table 5 . Electoral Performance of Legislative Candidates in Chile, 2013–2017

	(1) OLS Vote share 2013	(2) OLS Vote share 2017	(3) Logit Elected 2013	(4) Logit Elected 2017
Campaign spending	0.260*** (0.033)	0.294*** (0.024)	8.622*** (2.099)	12.064*** (4.658)
District Magnitude (DM)		0.000 (0.001)		-0.061 (0.264)
Campaign \$ * DM		-0.017*** (0.005)		1.099 (0.988)
Open Seats	0.010** (0.005)	0.000 (0.001)	0.891* (0.531)	0.363* (0.219)
Campaign \$ * Open Seats	-0.015 (0.021)	-0.002 (0.005)	-0.793 (1.584)	-2.033** (0.971)
% Incumbency	0.200*** (0.019)	0.057*** (0.015)	4.694*** (1.130)	0.759 (3.154)
Campaign \$ * %Incumbency	-0.252*** (0.044)	0.049 (0.040)	-5.492* (2.996)	-1.323 (8.972)
NM/Alianza indicator	0.059*** (0.008)	-0.004** (0.002)	1.696*** (0.626)	-0.909** (0.418)
Women	0.014** (0.007)	-0.003* (0.002)	0.120 (0.470)	-0.376 (0.350)
Previous terms	0.001 (0.004)	0.004*** (0.001)	0.151 (0.237)	1.710*** (0.473)
District	0.000 (0.000)	0.000 (0.000)	0.008 (0.012)	0.020 (0.025)
# municipalities in district	0.000 (0.001)	-0.000 (0.000)	0.001 (0.060)	-0.012 (0.031)
Log Population	0.004 (0.007)	0.001 (0.003)	0.685 (0.505)	0.158 (0.630)
Constant	-0.034 (0.091)	-0.006 (0.038)	-14.738** (6.682)	-8.067 (8.306)
Observations	470	960	460	895
R-squared	0.746	0.686		
Log-likelihood			-149.54	-101.62

Standard errors in parentheses.

*** $p < 0.01$,

** $p < 0.05$,

* $p < 0.1$

Source: Compiled by authors with data from the Electoral Service.

share and are more likely to win a seat. In turn, the effect of DM is negative and significant on the vote share, but not on winning a seat. Naturally, when the DM is larger, there are more candidates and, consequently, the vote share received by each person is comparatively lower. The effect of the interaction variable of campaign spending and DM is different on the vote share and on the likelihood of winning a seat. As the magnitude of the interaction variable increases, the impact on the vote share decreases, but the impact on winning a seat is positive and significant. In larger districts, the chance of winning a seat depends on campaign spending, but they also depend on the vote share for other candidates in the same party list. The larger the vote share for the list, the more candidates within the list that will win seats. As seats are assigned to party lists by PR, candidates can ride on the coattails of more popular aspirants in their lists. But since popular candidates can only drag along one or two running mates, those candidates with low vote shares that outspend their low-vote-shares running mates are more likely to win the extra seats won by their party list—or be dragged along by the excess votes received by their more popular running mates.

Thus, the open-list proportional representation (OLPR) system in use in Chile might be behind the interaction of campaign spending and DM. When there are closed lists (the order of candidates in the ballot and their chances of winning a seat is determined by the party), the effect of higher individual campaign spending should not be as strong. In fact, campaign spending by each candidate benefits the entire list, not just the individual candidate's vote share or his or her probability of winning a seat. In fact, those candidates located atop the list benefit more than the candidates located down the ballot. This is a relevant finding to account for why, in OLPR systems, candidates might engage in strategic campaign spending. If a candidate has an uphill battle to get over the individual vote threshold needed to win a seat on her own, that candidate might still engage in higher campaign spending if he or she sees a chance to run on the coattails of a popular list partner who will likely get more individual votes than needed to secure a seat. Thus, the real race for the other candidates in that list is against their running mates as they all struggle to be the "lucky" winner who benefits from the excess votes of the more popular candidate in their list.

The number of open seats in the district has a positive effect on the vote share received by candidates only in one of the models. The more open seats, the more spread out the vote is among all the candidates. After all, since the incumbency advantage means that incumbents have a stronger personal vote, when there are fewer incumbents, the share of the vote in the district that displays loyalty to an incumbent is lower and, consequently, the share of the vote up for grabs among new candidates is higher. The effect of the interaction variable is also positive. That is, the effect of campaign spending on the vote share is higher as the number of open seats increases. In districts

with several open seats (the number of open seats range from 0 to 2 in the 2013 election and from 0 to 6 in 2017), the effect of campaign spending increases as well.

The number of open seats also has a positive effect on the likelihood of winning a seat. However, the interaction effect of campaign spending and open seats is negative on winning a seat. This might seem counterintuitive as the chances of winning should increase as the number of open seats increase. But there is a plausible reason for it. When there are more open seats, the number of competitive challengers increases. Since there is a strong incumbency advantage in Chile and since picking districts to run is relatively easy—and potential challengers can switch from one district to another—competitive challengers might look for districts with more open seats to increase their chances of winning. As a result, those seats become more competitive and the effect of campaign spending on winning a seat dissipates.

Incumbency also has a positive effect on the vote share, but not on winning a seat. This is also true in the model shown in the appendix when incumbency is estimated as the vote share received by the legislator in the previous election (though for the model where incumbency is a dummy variable, the effect is not significant). This might call into question the impact of the incumbency effect on the chances of winning re-election. In the standard literature on the incumbency advantage in single member districts, an increase in the vote share of the incumbent is almost inevitably the same as winning a seat. In the case of OLPR systems, winning a seat depends on more things than the candidate's vote share. Moreover, since the incumbency condition in 2017 in Chile was somewhat comparable to the incumbency condition in the House of Representatives in the U.S. after the decennial redistricting, the expected effect of incumbency might be less strong than in cases where incumbents are so in the entire district (equivalent to districts that are not redrawn in the U.S.). Incumbency does positively impact vote share, but that higher vote share might not be enough to earn them a seat—(especially in newly created districts that encompass several old districts and where the name recognition of incumbents gets diluted).

The effect of the interaction variable between incumbency and campaign spending might help clarify the problem for incumbents. Higher spending and higher incumbency percentage have a negative effect on vote share and, in one of the models, on the probability of winning a seat. That is, those incumbents whose old districts represent a larger portion of the new districts get higher vote shares and are more likely to win seats. But those incumbents from the larger old districts will see a negative effect of campaign spending on their vote share and on their probability of winning a seat. Or, inversely, incumbents whose districts represent a smaller share of the new district will see a bigger effect of their spending in their vote share.

The control variables, which allows us to account for district-specific and candidate-specific characteristics, have the expected signs. With a few caveats, the results of the models are consistent with the hypotheses. Campaign spending matters independently, but in interaction with the other independent variables, campaign spending has a stronger effect on the vote share candidates get than on the likelihood of winning a seat. Under OLPR rules, the likelihood of winning a seat also depends on the vote share of the candidate's party and coalition, not just on his or her vote share. Yet, under open list systems, the individual vote share might help a candidate ride on the coattails of more popular list partners.

To clarify the implications of our findings, we also plotted linear predictions and predicted probabilities. [Figure 1](#) shows those plots. Panel A shows that as campaign spending increases, there is a corresponding increase on the predicted vote share, but there is no statistically significant difference as the number of open seats increases. Yet, as shown in Panel B, the impact of campaign spending on the probability of winning a seat increased substantially in 2013 when the number of open seats increased. Similarly, in 2017, the impact of campaign spending was substantially higher in those districts with more open seats. The higher the number of open seats, the higher the initial impact of campaign spending on winning a seat, but more campaign spending increases the likelihood of winning a seat for all candidates, regardless of how many open seats there are in their districts.

As shown on Panel C, there is a positive impact of campaign spending on challengers and incumbents. Incumbents have an initial advantage over challengers, and that advantage was greater in 2013 than in 2017. The reasons behind the lower starting advantage in 2017 is associated with the higher DM. This is in line with the claims that the effect of campaign spending decreases as the district magnitude increases. Overall, the evidence from Chile confirms the claims that the effect of campaign spending is higher for challengers than for incumbents—as the slope of the curve is steeper for those whose incumbency condition is lower. Yet, the figure also shows that incumbents reach the point of diminishing marginal returns on their campaign spending faster than challengers. The return for higher campaign spending for incumbents becomes flat at lower levels of spending than for challengers.

Panel D shows that the campaign spending has a higher initial effect on the probability of winning a seat for incumbents than for challengers, but as campaign spending increases, the differences for challengers and incumbents decrease. Spending more money by challengers ends up leveling the playing field with incumbents. In 2017, when the incumbency condition became a percentage rather than a dichotomous condition—as old districts merged into new districts—the effect of campaign spending had a higher starting point for incumbents whose old districts comprised a bigger

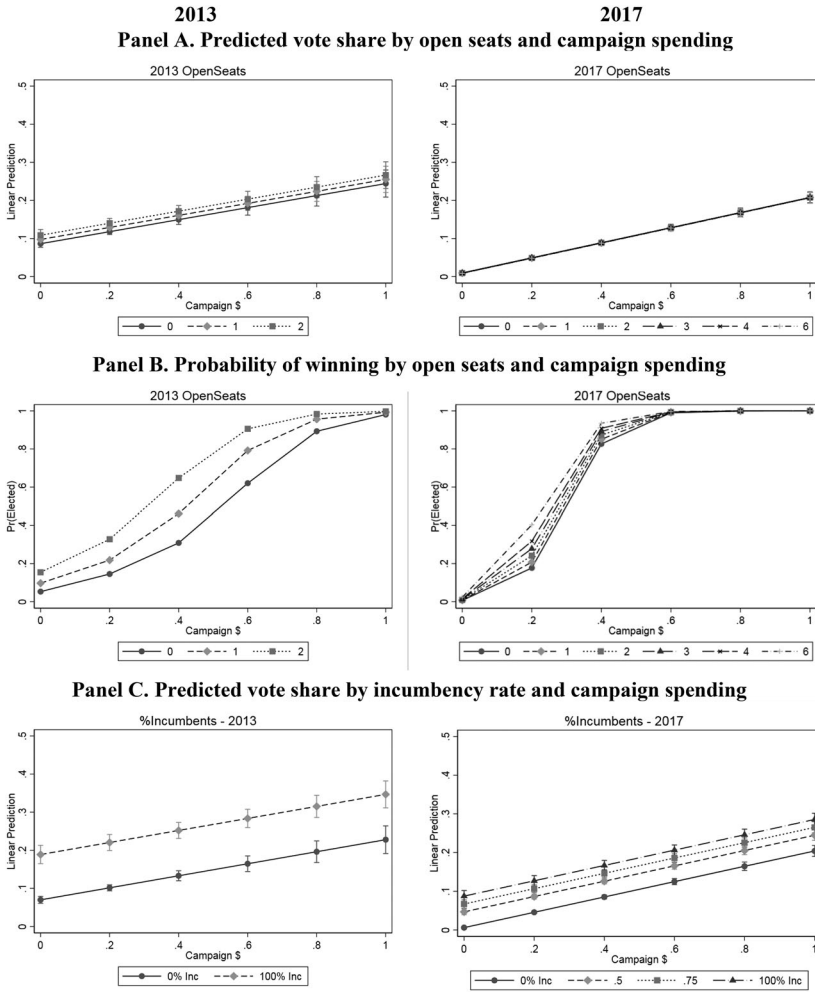


Figure 1 . Predicted probabilities of electoral performance. Source: Compiled by authors with data from the Electoral Service.

proportion of the new districts, but—again—higher campaign spending leveled the playing field for challengers and incumbents.

Panel E shows the effect of campaign spending on the vote share and on the probability of winning a seat for different DM in 2017 (we exclude 2013, as the DM was 2 for all districts). The graph on the left shows that the effect of campaign spending on the vote share is the same for candidates regardless of the DM. The effect is positive—more campaign spending results in a higher vote share—but there is no difference between districts with few seats and districts with more seats. The graph on the right shows that the effect of campaign spending on winning a seat varies depending on the DM. For all

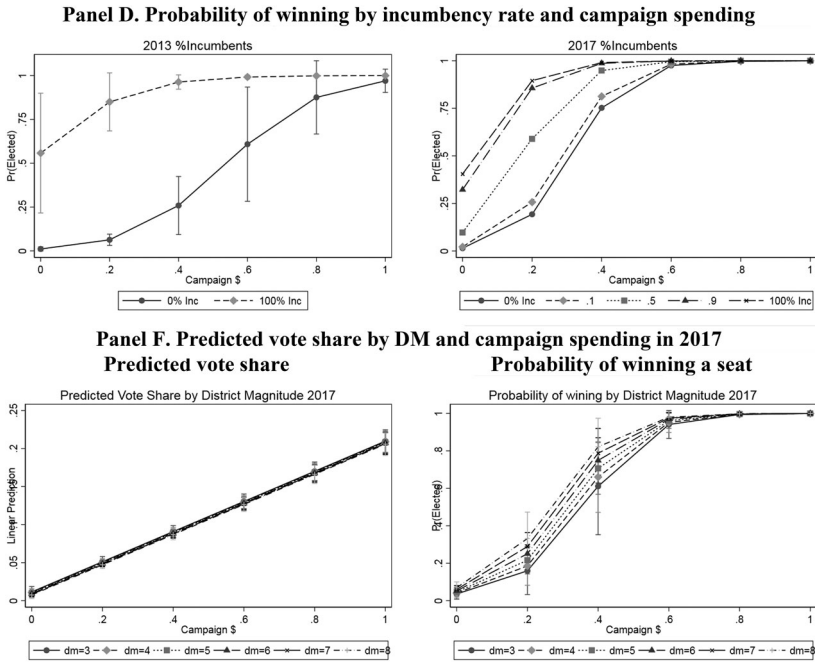


Figure 1 *Continued*

magnitudes, when campaign spending is either too low or very high, the effect is the same. But for mid values of campaign spending, the effect is higher for districts with more seats. The marginal effect of campaign spending on winning a seat is higher for those districts with more seats in middle ranges of campaign spending.

Discussion and conclusion

The data from the 2013 and 2017 elections in Chile allows us to assess the effect of campaign spending under different DM in an OLPR system. As old districts were merged into fewer new districts, the condition of incumbency becomes a continuous variable ranging from 0 to 1. As new seats were added to the legislature, the number of open seats does not exclusively depend on incumbents retiring.

The case of Chile shows some nuances on the effect of campaign spending on the vote share of candidates and on their likelihood of winning a seat. While campaign spending matters, its effect is more apparent on the likelihood of winning a seat than on the vote shares. Candidates, who care more interested in winning than about getting a higher vote share, make campaign spending decisions based on their perceived chances of winning a seat more than on their expected vote share. It is true that the higher

their vote share, the easier it is to win, but since seats are assigned to parties first and to candidates within parties later, candidates have incentives to free ride on popular running mates—and thus, the impact of campaign spending is not necessarily linear on the probability of winning a seat.

The effect of campaign spending is higher in districts with higher DM when candidates are in the mid-range of campaign spending. When candidates spend too little or a lot, the effect of campaign spending is the same regardless of DM, but when candidates are near the median spending, the effect of campaign spending is higher in districts with higher DM.

When there are more open seats, it is easier for campaign spending to have an impact on winning a seat—though not necessarily on getting a higher vote share. In multiple member OLPR districts, the higher the number of incumbents who retire—or the higher the number of new seats added in an electoral reform—the bigger the impact on the probability of winning a seat. When additional seats are added to the legislature, there are more opportunities for challengers and the return for campaign spending is higher in districts where there are more open seats.

It has been widely established that incumbents have an advantage in single member districts. The evidence is less clear on OLPR systems. But when districts get redrawn, the effect of the incumbency advantage does not apply to new voters added to the old district. The case of Chile in 2017 allows us to assess the effect of incumbency in OLPR systems where districts also get redrawn. The larger the share of old voters in the new district (those voters among whom the incumbent enjoys name recognition and has constituency connections), the more likely an incumbent is to be successful, both in terms of vote shares and probability of winning a seat. Yet, for incumbents, the return of campaign spending reaches the point of diminishing marginal returns faster than for challengers.

The case of Chile confirms the expectations that, in OLPR systems, campaign spending matters differently for challengers and incumbents. Incumbents have an initial advantage over challengers—and the larger the share of the incumbent's old district in the new districts, the higher the advantage. But the marginal returns in campaign spending diminish faster at lower levels of spending for incumbents than for challengers.

The effect of campaign spending is also moderated by the number of open seats in every district and by the extent to which an incumbent's old districts represents a larger part of the new district. Campaign spending matters, but it does not matter equally for all types of candidates. Within challengers and incumbents, the effect of campaign spending is greater when the DM is lower, when there are more open seats and when the incumbency condition is more pronounced.

The case of Chile underlines that the electoral rules—including district magnitude, open lists, and different levels of incumbency—interact with

campaign spending on affecting the vote share and the likelihood of winning seats. Since changes to electoral rules will impact campaign spending dynamics, campaign spending rules can also be modified to minimize negative externalities of changes in electoral rules. Campaign spending matters, but candidates strategically respond to the incentives presented by electoral rules, with incumbents normally spending more than they need to secure re-election.

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