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ORIGINAL ARTICLE

Does Voluntary Voting Enhance Partisan Bias? Evidence from Chile

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Abstract

Although partisan bias – when an authority transfers discretionary public resources to a politically aligned receiver – has been extensively studied, less is known about how this practice is affected by the voting regime – compulsory or voluntary voting. In this article, I study partisan bias in Chile, using administrative data of transfers from the central authority to local governments, highlighting two relevant scope conditions: the electoral cycle, and electoral uncertainty caused by the adoption of voluntary voting. I found strong evidence of partisan bias, especially in election years and in electorally riskier municipalities. This suggests that the uncertainty introduced by this electoral reform induced politicians to allocate a large share of resources to risky municipalities, because such resources would play a more significant role in the electoral outcome. Overall, these results imply that voluntary voting has a large impact on the way that resources are allocated across subnational units.

Keywords: partisan bias; voluntary voting; electoral risk; elections; voter turnout

Introduction

What is the magnitude of partisan bias in inter-governmental transfers of resources? How does the electoral cycle influence the degree of partisan bias? How does the adoption of voluntary voting affect this dynamic? Scholars in comparative politics have long studied the allocation of public resources for electoral purposes in countries like Argentina,[1] Brazil,[2] Portugal[3] and Chile.[4] Generally

[1]Ernesto Calvo and Maria Victoria Murillo, 'When Parties Meet Voters: Assessing Political Linkages through Partisan Networks and Distributive Expectations in Argentina and Chile', *Comparative Political Studies*, 46: 7 (2013), pp. 851–82.

[2]Fernanda Brollo and Tommaso Nannicini, 'Tying Your Enemy's Hands in Close Races: The Politics of Federal Transfers in Brazil', *American Political Science Review*, 106: 4 (2012), pp. 742–61.

[3]Linda Gonçalves Veiga and Maria Manuel Pinho, 'The Political Economy of Intergovernmental Grants: Evidence from a Maturing Democracy', *Public Choice*, 133: 3/4 (2007), pp. 457–77.

[4]Juan Pablo Luna and Rodrigo Mardones, 'Targeted Social Policy Allocations by "Clean" State Bureaucracies: Chile 2000–2009', *Journal of International and Comparative Social Policy*, 32: 1 (2016), pp. 36–56.

speaking, these scholars have found strong evidence of partisan bias, defined as the distribution of resources from a political authority to a politically aligned receiver, without the assurance of receiving individual electoral support.[5] The literature has also explored the scope conditions of partisan bias, focusing on, for example, the electoral cycle and finding that just before election years, partisan bias increases substantially.[6] Another scope condition that is typically explored is electoral risk. Here, the literature has analysed whether public resources are directed to affect the outcome of an election, by targeting either swing voters or core supporters of a given political party.[7] However, less is known about how partisan bias changes after the enactment of electoral reforms that cause a large shock in the electorate. For instance, studying cases of adoption of voluntary voting – such as Chile in 2012 – provides a good case to study these questions, since it had a large impact on the number of voters and the composition of the electorate.

Why does the adoption of voluntary voting matter? Building on Arend Lijphart's insight,[8] the voting regime – compulsory or voluntary – may have significant consequences, as it determines the size and composition of the electorate. As politicians tend to respond to their constituencies – so the argument goes – changes in the electorate may have an impact on the way political elites appeal to voters and on their behaviour once in office. For example, if a country's electorate becomes relatively richer after adopting voluntary voting, we should expect that politicians would pay more attention to issues concerning the upper class, such as income taxes, or post-graduate education. Besides this effect, countries with voluntary voting tend to have a smaller electorate. Consequently, mobilisation of specific groups of likely voters has a larger impact on the outcome of an election compared to a regime of mandatory and universal voting.

From the referendum that defeated the Pinochet dictatorship in 1988, to the 2009 presidential election, Chile had a system of voluntary registration and compulsory voting. In this period, the size of the electorate was remarkably stable; indeed, both in the 1988 referendum and in the run-off of the 2009 election, approximately 7 million Chileans cast their ballot. Starting in the 2012 municipal election, the country adopted a system of automatic registration and voluntary voting, based on the notion that such a system would attract more young people into the political process. Consistent with Lijphart's prediction, the reform significantly changed the composition of the electorate, as Chilean voters became younger and more politicised compared to the previous periods (see Table 2). In addition, the reform caused a dramatic decrease in voter turnout of approximately 1 million voters, equivalent to a stunning drop of 16 per cent.

[5]Susan C. Stokes, Thad Dunning, Marcelo Nazareno and Valeria Brusco, *Brokers, Voters, and Clientelism: The Puzzle of Distributive Politics* (Cambridge: Cambridge University Press, 2013).

[6]See Alejandro Corvalan, Paulo Cox and Rodrigo Osorio, 'Indirect Political Budget Cycles: Evidence from Chilean Municipalities', *Journal of Development Economics*, 133 (July 2018), pp. 1–14; Bernardo Lara and Sergio Toro, 'Tactical Distribution in Local Funding: The Value of an Aligned Mayor', *European Journal of Political Economy*, 56 (Jan. 2019), pp. 74–89.

[7]See Alberto Díaz-Cayeros, 'Electoral Risk and Redistributive Politics in Mexico and the United States', *Studies in Comparative International Development*, 43: 2 (2008), pp. 129–50.

[8]See Arend Lijphart, 'Unequal Participation: Democracy's Unresolved Dilemma Presidential Address', *American Political Science Review*, 91: 1 (1997), pp. 1–14.

I use this dramatic shock to explore how it affects the magnitude of partisan inter-governmental transfers of resources. To accomplish this goal, we need to analyse subnational variation in this shock, in order to compare units that were more affected by this reform with those that were not. Consequently, I exploit the fact that the decrease in voter turnout was not uniform across subnational units, as some municipalities saw their turnout decline as many as 50 percentage points, while others remained stable. I would argue that a high decrease in voter turnout under voluntary voting causes more electoral risk, because such a decline creates more uncertainty in the composition of the electorate. Therefore, by building on the argument that incumbents invest resources in risky electoral units,[9] I use the adoption of voluntary voting as a reform that enhances variation in electoral risk across local municipalities, which allows me to study how electoral risk enhances the practice of partisan bias.

By using municipal-level administrative data in Chile's 346 municipalities, this article estimates the degree of partisan bias in Chile in inter-governmental transfers – from the central to local governments – using different types of measures. Concretely, I quantify whether, for example, a left-wing central government is more likely to transfer discretionary resources to aligned municipalities – in this case, left-wing mayors. For these purposes, I use three outcomes: (i) the share of transfers from external sources received by local municipalities, (ii) the log of total transfers per person that a municipality received from the government[10] and (iii) the share of municipal investment that used external resources. The first two outcomes are inflows, namely resources received by a municipality from external sources, while the latter is an outflow, an expenditure incurred by the local government. In this sense, unlike previous research,[11] I provide measures of both the amount of resources that a municipality received and the manner in which those resources were used.

A crucial component of this work is to document that electoral risk affects the magnitude of partisan bias. Thus, I compare the magnitude of such transfers between years on and off the electoral cycle to address whether these resources were used for electoral purposes. For example, if there is a large increase in partisan bias just before the election, we could make an educated guess that such transfers were used to win the election and not for other purposes. I also exploit the adoption of voluntary voting in 2012, estimating how such reform intensifies this practice. Voluntary voting caused a significant decrease in voter turnout, which was uneven across municipalities. In municipalities with a substantial reduction in turnout, these inter-governmental transfers would likely be more decisive for electoral purposes, as these resources may be utilised to mobilise this smaller electorate. In other words, if there is partisan bias in transfers for electoral purposes, such resources would probably have a better use in municipalities that substantively shrunk the number of voters.

[9]Díaz-Cayeros, 'Electoral Risk and Redistributive Politics in Mexico and the United States'.

[10]Chilean municipalities are partially funded by discretionary transfers from the central government, through programmes administered by an office under the authority of the Ministry of Home Affairs. See Corvalan et *al.*, 'Indirect Political Budget Cycles'.

[11]See *ibid.*; Lara and Toro, 'Tactical Distribution in Local Funding'.

If we directly estimate the effect of a mayor's political affiliation on the transfers received from the government – for example, by regressing the amount of the transfers from a left-wing executive on an indicator variable for a left-wing mayor – there may be several sources of bias. For instance, municipalities administered by left-wing mayors could be less wealthy than those ruled by the Right. Thus, they could receive more resources due to their economic needs, not because of party affiliation. To deal with this threat for causal identification, I utilise a regression discontinuity (RD) design, with aligned mayor margin of victory as the forcing variable and government party victory as the treatment. The RD design allows me to control for other factors that may affect central government transfers to aligned mayors, by only considering the subset of municipalities where an aligned mayor barely won or lost the election. Among these municipalities, the mayor's partisan affiliation is 'as if random', allowing me to compute the effect of party alignment on the outcomes of interest: (i) share of transfers from external sources, (ii) the log of total transfers per person and (iii) the share of municipal investment that used external resources. This technique has been extensively used in political science, since David S. Lee, Enrico Moretti and Matthew J. Butler used it to identify roll-call voting behaviour of barely elected Democrats in the United Congress.[12]

I found strong evidence of partisan bias, both in transfers from the central to local governments, and in the use of those resources for local investment. Such partisan bias was higher on election years and among municipalities with a higher decrease in turnout rates after the implementation of voluntary voting. This suggests – as shown by Alejandro Corvalan, Paulo Cox and Rodrigo Osorio,[13] as well as Bernardo Lara and Sergio Toro[14] – that in electoral years, the central government directed a larger share of resources to aligned mayors. But more importantly, it demonstrates that the adoption of voluntary voting has important distributive consequences within subnational units, as municipalities with a more uncertain electorate – and therefore electorally riskier – tend to receive a higher share of resources and, subsequently, they use those resources for local needs.

This article's main contributions are twofold. First, I quantify the magnitude of partisan bias in the Chilean case in a broad set of outcomes, connecting this practice to the electoral cycle. Even if the literature in this area has found evidence of partisan bias in Chile and other developing countries, here I show evidence of this practice with different measures, including inflow of resources and expenditures. Second, and most importantly, I establish a relationship between voluntary voting and partisan bias, through the electoral risk created by such electoral reform. The current literature on voluntary voting tends to focus on its distributive consequences on the country as a whole, finding that it biases the electorate towards the upper

[12]David S. Lee, Enrico Moretti and Matthew J. Butler, 'Do Voters Affect or Elect Policies? Evidence from the US House', *Quarterly Journal of Economics*, 119: 3 (2004), p. 807; David S. Lee, 'Randomized Experiments from Non-Random Selection in US House Elections', *Journal of Econometrics*, 142: 2 (2008), pp. 675–97; Marko Klašnja and Rocío Titiunik, 'The Incumbency Curse: Weak Parties, Term Limits, and Unfulfilled Accountability', *American Political Science Review*, 111: 1 (2017), pp. 129–48.

[13]Corvalan *et al.*, 'Indirect Political Budget Cycles'.

[14]Lara and Toro, 'Tactical Distribution in Local Funding'.

class.[15] However, to my knowledge, there is not a paper that explores how this change in the voting regime affects partisan bias at the subnational level. As I demonstrate in the article, this electoral reform had an important impact on the way that politicians allocate resources from the central government to the subnational level, because it introduced more uncertainty in the outcome of local elections.

The article proceeds as follows. The next section describes the previous literature on non-programmatic politics and voluntary voting. The third section describes the main hypotheses, while the fourth section provides background information on the Chilean case. The fifth section describes the measures, data sources and identification strategy, and the sixth section explains the main results. Finally, the seventh section concludes.

Existing Explanations

Partisan Bias, Electoral Risk and the Election Cycle

Non-programmatic politics is a non-transparent distributive strategy of state resources. Among the several types of non-programmatic strategies, partisan bias refers to cases where a political authority distributes resources to a politically aligned group without the assurance of receiving individual electoral support.[16] As these transfers aim to obtain an electoral reward, a large body of research in comparative and US politics has explored this phenomenon, usually finding a large degree of partisan bias in both developed and developing countries.

In the United States, Christopher Berry, Barry Burden and William Howell studied federal outlays in the 1984–2007 period, finding that districts receive substantively higher federal funds when such districts have legislators that represent them.[17] Likewise, by studying Portuguese local governments in the 1979–2002 period, Linda Gonçalves Veiga and Maria Manuel Pinho found that aligned municipalities received more resources from the central government in the first years of the young democracy, although this trend did not continue in the subsequent years.[18] In Latin America, there is also evidence of this dynamic, especially in countries such as Brazil and Argentina. Regarding the latter, Ernesto Calvo and Maria Victoria Murillo show – with data including the 1987, 1990, 1995 and 2000 elections – that Peronist-controlled provinces received a higher share of federal funding compared to non-Peronist provinces, and public employees in such provinces tend to reward the party with electoral support.[19] In Brazil, Fernanda Brollo and Tommaso Nannicini found that mayors from the same political party as the president received a higher share of discretionary funds for infrastructure from the

[15]John M. Carey and Yusaku Horiuchi, 'Compulsory Voting and Income Inequality: Evidence for Lijphart's Proposition from Venezuela', *Latin American Politics and Society*, 59: 2 (2017), pp. 122–44; Anthony Fowler, 'Electoral and Policy Consequences of Voter Turnout: Evidence from Compulsory Voting in Australia', *Quarterly Journal of Political Science*, 8: 2 (2013), pp. 159–82.

[16]Stokes *et al.*, *Brokers, Voters, and Clientelism*.

[17]Christopher R. Berry, Barry C. Burden and William G. Howell, 'The President and the Distribution of Federal Spending', *American Political Science Review*, 104: 4 (2010), pp. 783–99.

[18]Veiga and Pinho, 'The Political Economy of Intergovernmental Grants'.

[19]Ernesto Calvo and Maria Victoria Murillo, 'Who Delivers? Partisan Clients in the Argentine Electoral Market', *American Journal of Political Science*, 48: 4 (2004), pp. 742–57.

central government.[20] This was mostly because the administration penalised opposition mayors who won by a small margin, to harm their chances for re-election. These articles confirm the existence of partisan bias, but the specific mechanisms that drive this phenomenon are not clear.

The literature on partisan bias in developing countries attempts to fill this gap, providing evidence of how partisan bias is directly connected to electoral risk. One possible way of approximating electoral risk is by focusing on the past electoral behaviour of the beneficiaries of these transfers. From an electoral standpoint, authorities could direct resources to either core supporters or swing voters, avoiding allocating transfers into localities with a high percentage of opposition voters. For instance, in Peru, Norbert Schady found that political factors influenced the Fondo de Cooperación para el Desarrollo Social (Peruvian Social Fund, FONCODES) allocation of expenditures.[21] Such expenditures were directed to localities with a higher share of either marginal voters or core supporters. In Mexico, Alberto Díaz-Cayeros found that the incumbent Partido Revolucionario Institucional (Institutional Revolutionary Party, PRI) used the Programa Nacional de Solidaridad (National Solidarity Programme, PRONASOL) – which lasted between 1989 and 1994 – to invest resources in states with a higher share of core supporters and in risky states, where each dollar invested was expected to have a higher return. The PRI targeted core supporters because it was an entrenched incumbent, so it tended to adopt low-risk electoral strategies.[22] In India, Wiji Arulampalam, Sugato Dasgupta, Amrita Dhillon and Bhaskar Dutta also found evidence of partisan bias in aligned states, especially those with a higher share of swing voters.[23] In Chile, research on this issue has shown more mixed results. For instance, Juan Pablo Luna and Rodrigo Mardones studied party alignment in inter-governmental transfers.[24] They found that incumbents pursue an 'insurance portfolio' strategy,[25] allocating resources to the more moderate opposition party, but punishing the more extreme rightist party. The authors argue that as the country is characterised by a relatively well-functioning bureaucracy, social transfers do not necessarily follow an immediate electoral purpose, but a broader political objective.

Another variable that has been explored is the timing of the transfers. This line of investigation studies how incumbent politicians tried to manipulate macro-economic variables on election years to increase their probabilities of re-election.[26] This idea has been extended at the micro level, where the literature has found that

[20]Brollo and Nannicini, 'Tying Your Enemy's Hands in Close Races'.

[21]Norbert R. Schady, 'The Political Economy of Expenditures by the Peruvian Social Fund (FONCODES), 1991–95', *American Political Science Review*, 94: 2 (2000), pp. 289–304.

[22]Díaz-Cayeros, 'Electoral Risk and Redistributive Politics in Mexico and the United States'.

[23]Wiji Arulampalam, Sugato Dasgupta, Amrita Dhillon and Bhaskar Dutta, 'Electoral Goals and Center-State Transfers: A Theoretical Model and Empirical Evidence from India', *Journal of Development Economics*, 88: 1 (2009), pp. 103–19.

[24]Luna and Mardones, 'Targeted Social Policy Allocations by "Clean" State Bureaucracies'.

[25]See Beatriz Magaloni, Alberto Díaz-Cayeros and Federico Estévez, 'Clientelism and Portfolio Diversification: A Model of Electoral Investment with Applications to Mexico', in Herbert Kitschelt and Steven I. Wilkinson (eds.), *Patrons, Clients, and Policies: Patterns of Democratic Accountability and Political Competition* (Cambridge: Cambridge University Press, 2007), pp. 182–205.

[26]Alberto Alesina, Nouriel Roubini and Gerald D. Cohen, *Political Cycles and the Macroeconomy* (Cambridge, MA: MIT Press, 1997).

politicians use different tools on election years. For instance, Stuti Khemani found a pattern of policy manipulation of state legislators in India, where politicians targeted special interest groups in return for electoral support.[27] In the Philippines, Julien Labonne found that local municipalities systematically increase their employment rates by 1.5 per cent two quarters before the election, while decreasing them in the months after the election.[28] In Latin America, Schady found that the FONCODES expenditures were substantively higher before elections;[29] in Chile, Corvalan *et al.* focused on the timing of intra-government transfers, finding that such distribution of resources tends to correlate with the electoral cycle in Chilean municipal elections in the 2001–13 period.[30] More recently, Lara and Toro used an RD design to test coalition alignment concerning public infrastructure resources, finding clear evidence of partisan bias in the years of the electoral cycle.[31] Interestingly, they also found that partisan bias is conditioned by the history of coalition alignment, entailing that traditional left-wing strongholds tend to receive more resources from a left-wing government.

The Adoption of Voluntary Voting

There is also a body of empirical research that studies the effects of the voting regime on electoral and distributive outcomes. Lijphart argues that voluntary voting tends to over-represent the most affluent citizens, since those are more likely to participate in the electoral process.[32] This claim has been tested on countries that have adopted this electoral regime, although the evidence has been somewhat mixed. In the case of Venezuela, John Carey and Yusaku Horiuchi found that the adoption of voluntary voting in 1993 correlates with an unequal distribution of income in subsequent periods.[33] However, in the Netherlands, Peter Miller and Ruth Dassonneville found that the adoption of voluntary voting actually increased the support for social democratic parties, contradicting the findings discussed above.[34] Scholars have also looked at the reverse, namely the enactment of compulsory voting laws. Anthony Fowler found that compulsory voting in Australia increased support for leftist policies,[35] and Michael Bechtel, Dominik Hangartner and Lukas Schmid found a similar result in Switzerland.[36] In this article, I explore a different mechanism by which voluntary voting may affect distributive outcomes: variation in electoral risk induced by an uneven decrease in voter turnout in local municipalities. Indeed, among municipalities that

[27]Stuti Khemani, 'Political Cycles in a Developing Economy: Effect of Elections in the Indian States', *Journal of Development Economics*, 73: 1 (2004), pp. 125–54.

[28]Julien Labonne, 'Local Political Business Cycles: Evidence from Philippine Municipalities', *Journal of Development Economics*, 121 (July 2016), pp. 56–62.

[29]Schady, 'The Political Economy of Expenditures by the Peruvian Social Fund'.

[30]Corvalan *et al.*, 'Indirect Political Budget Cycles'.

[31]Lara and Toro, 'Tactical Distribution in Local Funding'.

[32]Lijphart, 'Unequal Participation'.

[33]Carey and Horiuchi, 'Compulsory Voting and Income Inequality'.

[34]Peter Miller and Ruth Dassonneville, 'High Turnout in the Low Countries: Partisan Effects of the Abolition of Compulsory Voting in the Netherlands', *Electoral Studies*, 44 (Dec. 2016), pp. 132–43.

[35]Fowler, 'Electoral and Policy Consequences of Voter Turnout'.

[36]Michael M. Bechtel, Dominik Hangartner and Lukas Schmid, 'Does Compulsory Voting Increase Support for Leftist Policy?', *American Journal of Political Science*, 60: 3 (2016), pp. 752–67.

experience a higher decrease in voter turnout, electoral risk could be higher, as incumbents have less precise information on the composition of the electorate.

In sum, this literature review confirms that partisan bias is common in a myriad of national contexts and depends on two essential scope conditions: electoral risk and the timing of elections. Moreover, most of the literature uses transfers from the central to local governments as the primary measure of partisan bias, implying that the cited papers are more focused on inflows than on outflows. Likewise, electoral risk is generally measured as the proportion of swing voters in a municipality. I seek to contribute to this literature by using different measures of partisan bias and by addressing how, and to what extent, voluntary voting increases electoral risk and, therefore, causes changes to the magnitude of this phenomenon.

Hypotheses

Based on the preceding discussion, I can now generate a number of hypotheses to be tested in the empirical analysis. I should remind the reader about the outcomes and the primary independent variable (see identification strategy section for more details). The three outcomes are (i) the share of transfers from external sources received by local municipalities, (ii) the log of total transfers per person that a municipality received from the government and (iii) the share of municipal investment that used external resources. Then, I estimate whether being an aligned mayor causes an increase in resources from the central government and whether aligned mayors invest those resources in the municipality. Likewise, I use the adoption of voluntary voting as a reform that caused a shock in the electorate, introducing different levels of electoral risk among the municipalities.

In the next paragraphs, I state three hypotheses about partisan bias. Under some scope conditions, I expect partisan bias to be higher. Thus, I first propose a general claim, and then I add some conditions in which partisan bias should increase. We should consider the three conditions as an 'and' statement, meaning that if the three conditions are met, then partisan bias should be higher compared to the case where two conditions are met.

The main hypotheses are as follows. Partisan bias in transfers from the central to local governments is more pronounced under the following conditions:

(i) where the municipal government is part of the central government coalition
(ii) in electoral cycle years
(iii) in municipalities with higher electoral risk.

Regarding the first hypothesis, I expect to find partisan bias in aligned municipalities, based on the findings from the previous research cited above, in Chile and in other contexts. However, most of the cited papers used measures of inflows of resources. In this article, I also incorporate a measure of outflows, namely whether the resources received from external sources were used for local investment. To have strong evidence of partisan bias, we should observe that aligned mayors received more resources from the central government, and they used those resources for local needs.

The electoral cycle hypothesis is useful to demonstrate that these resources were utilised for the election and not for other purposes. In this sense, if mayors use these resources for the election, then we should observe larger treatment effect in exactly the years of the municipal election compared to other years. Here I am building on the findings of Corvalan *et al.*, who found correlational evidence of a larger disbursement of resources to municipalities in election years.[37]

Finally, the third scope condition relates to the electoral risk caused by the adoption of voluntary voting. A higher decrease in turnout in time t implies that mayors had more uncertainty in the composition of the electorate for the election in time $t + 1$. Uncertainty in the profile of the likely voter increases the electoral risk for the ruling coalition, as it has less precise information on what type of voter is going cast their ballot. As a result, the central government may have decided to allocate more resources to aligned mayors in risky municipalities. In this sense, I hypothesise that the adoption of voluntary voting had distributive consequences due to the increase of electoral risk, building on the insight of Díaz-Cayeros.[38]

Another reason why the central government may have allocated more resources to these municipalities is that the electorate became relatively smaller than in other places. With a smaller electorate, the government may have perceived that state resources could be more decisive to win the election, leading to the allocation of even more money to municipalities affected by voluntary voting. As both reasons – electoral risk and size of the electorate – point in the same direction, I expect to find the highest level of partisan bias in municipalities with a significant decrease in voter turnout.

The logic of these hypotheses is that partisan bias should be higher if the three conditions are simultaneously met. Thus, in the results section, I address whether the data provides enough evidence supporting these three scope conditions.

Chilean Context

After the return to democracy in 1990, Chile's electoral politics have been dominated by two major political alliances: the centre-left Nueva Mayoría (New Majority) and the rightist Chile Vamos (Chile, Let's Go).[39] The former included a set of left-leaning parties – such as the Partido Socialista (Socialist Party, PS), the Partido por la Democracia (Party for Democracy, PPD) and the Partido Radical (Radical Party, PR) – and the Partido Demócrata Cristiano (Christian Democratic Party, PDC). Starting in the 2008 municipal election, the Nueva Mayoría agreed to let the Partido Comunista (Communist Party, PC) compete without a challenger from its ranks, creating a de facto electoral coalition. The right-wing Chile Vamos includes Renovación Nacional (National Renewal, RN), a centre-right party, and the Unión Demócrata Independiente (Independent Democratic Union, UDI), a rightist party founded by civilian collaborators of the Pinochet regime. In 2012, the moderate-liberal Evópoli (Political Evolution) party was incorporated into the coalition.

[37]Corvalan *et al.*, 'Indirect Political Budget Cycles'.

[38]Díaz-Cayeros, 'Electoral Risk and Redistributive Politics in Mexico and the United States'.

[39]From now on, I use 'left-wing' to describe a mayor from the Nueva Mayoría and 'right-wing' for a mayor from Chile Vamos.

The country has 346 municipalities, each of them administered by an elected mayor by a simple majority. The vast majority of mayors are affiliated to one of the two major party coalitions: the centre-left Nueva Mayoría or the rightist Chile Vamos.[40] There are no term limits for a re-election. Each municipality is funded through three sources of revenues: autonomously-generated resources, transfers from the central government, and a redistributive mechanism between municipalities. Autonomous resources include property taxes, vehicle circulation permits, entrepreneurial activities permits and municipal fees for the provision of public services.[41] Moreover, transfers from the central government include a public infrastructure programme called Programa de Mejoramiento Urbano (Urban Improvement Programme, PMU) and a programme for improving sanitary conditions named Programa de Mejoramiento de Barrios (Neighbourhood Improvement Programme, PMB). Crucially, resources for these programmes are allocated by the Subsecretaría de Desarrollo Regional y Administrativo (Undersecretariat of Regional and Administrative Development, SUBDERE), an agency under the authority of the Ministerio del Interior (Ministry of Home Affairs) in charge of promoting decentralisation. The mayor has budgetary discretion on the allocation of several municipal resources, including administrative expenditures, transfers to public services, transfers to public schools and transfers to local hospitals. Indeed, by law, mayors are in charge of administering and allocating these municipal resources, although the municipal council must approve the final budget.

In 1988, the country adopted a system of voluntary registration and voluntary voting for the 1988 referendum that rejected the continuation of Pinochet's dictatorship. For that election, 92 per cent of adults decided to register to vote,[42] probably because the stakes of such a referendum were very high. For the next elections, voting turnout remained stable (see Figure 1), suggesting that the electorate was basically static from 1988 to 2008. In 2009, the authorities at the time perceived that having an old electorate was a problem for Chilean democracy, deciding to implement a system of automatic registration and voluntary voting. Thus, now every person is eligible to vote once they turn 18, although voting is voluntary. When former President Bachelet issued the bill that enacted this electoral reform, she claimed that '[…] what matters is to broaden the universe of voters, because the electorate is getting increasingly older. It matters that youngsters can express themselves in the polls'.[43] Eventually, such a bill passed congress, and voluntary voting was first implemented for the 2012 municipal elections.

[40]Given that these two coalitions dominate Chilean politics, I use the term 'aligned mayor' to define a mayor from the same electoral coalition as the president, not necessarily from the same party. Consequently, partisan bias is a transfer from the central to local governments that favours aligned mayors.

[41]Mario Pérez, 'Análisis de los municipios chilenos: Ingresos por gestión versus transferencias del Fondo Común Municipal', *Revista Estudios de Políticas Públicas*, 2: 2 (2016), pp. 121–30.

[42]See Patricio Navia, 'Participación electoral en Chile, 1988–2001', *Revista de Ciencia Política*, 24: 1 (2004), pp. 81–103.

[43]'Bachelet promulga reforma que establece voto voluntario e inscripción automática', *El Mercurio*, 27 March 2009, available at www.emol.com/noticias/nacional/2009/03/27/350970/bachelet-promulga-reforma-que-establece-voto-voluntario-e-inscripcion-automatica.html, last access 25 March 2021.

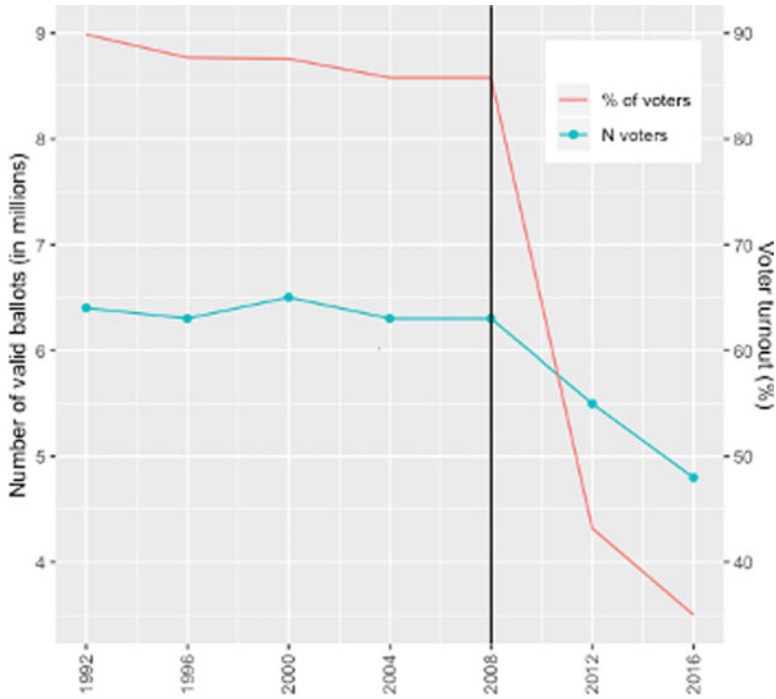

Figure 1. Voter Turnout: Chilean Municipal Elections, 1992–2016
Source: Author's elaboration based on SERVEL data.

Data and Empirical Strategy

Measures

For the RD models, I use three outcomes (see Table 1). First, the share of external transfers over the total municipal income. External transfers include allocations from the central government through the PMU and PMB programmes, transfers from private entities and transfers from international organisations. In this sense, the numerator may include transfers from other sources, so the measure may be contaminated if, for example, some municipalities received a large share of transfers from private companies. Still, this variable becomes larger as transfers from PMU and PMB increase, and it is implausible that companies or international entities would heavily fund poor municipalities. Second, I use the monetary amount of transfers per person from the central government through the PMU and PMB programmes, converted from thousands of Chilean pesos at 2016 constant prices into logs. This measure – registered since 2008 – is not contaminated by the possibility of transfers from the private entities, so it represents a cleaner measure of partisan bias. These two outcomes represent inflows, that is, resources received by the municipality. Third, I use the share of municipal investment funded through external resources, which shows the extent to which these resources transferred from the central government were used for municipal investment. This variable represents an outflow, that is, a type of spending done by the municipality.

Table 1. Outcomes

Outcomes	Description	Measurement
Share of external transfers	Share of external transfers over the total municipal income	Percentage
Total government transfers per capita	Total amount of external transfers per person	Log of thousands of Chilean pesos
Share of external investment	Share of municipal investment funded by external resources	Percentage

Source: Author's elaboration based on SINIM data.

The primary independent variable is whether the mayor of a given municipality belonged to the same coalition as the president: aligned mayors. This variable equals 1 if the mayor for a given municipality is aligned, and 0 otherwise. I also use the aligned mayor's margin of victory as the running variable in the RD design (see subsection on identification strategy).

Data

I use multiple sources of data. First, for the treatment variables, I use municipal elections data from 2000 to 2016. This information is available on the Servicio Electoral de Chile (Chilean Electoral Service, SERVEL) website.[44] Second, for the outcomes, I use administrative data from the Sistema Nacional de Información Municipal (National System of Municipal Information, SINIM),[45] a web platform with municipal-level data of budgetary allocations that covers the period 2000–16. SINIM reports transfers in thousands of Chilean pesos at 2016 constant prices, while the shares are reported as percentages. All the variables reported in thousands of Chilean pesos were converted into logs. I also use the Chile Encuesta Nacional de Caracterización Socio-Económica (Chilean National Socio-Economic Survey, CASEN)[46] and data from the Instituto Nacional de Estadística (National Institute of Statistics, INE) to perform continuity tests.[47] I collapsed this data at the municipality level and merged it with the SINIM and electoral data.[48] I used 1,116 municipal elections for the estimation, as I excluded municipalities where the winning mayor was from a third party, keeping mayors only from either left- or right-wing coalitions. Lastly, for describing the profile of the voters under the two regimes – compulsory and voluntary voting – I use data from the survey conducted by the

[44]The SERVEL data is available at https://servel.cl/, last access 11 March 2021.

[45]The SINIM data is available at www.sinim.gov.cl, last access 11 March 2021.

[46]The CASEN data is available at http://observatorio.ministeriodesarrollosocial.gob.cl/encuesta-casen, last access 25 March 2021.

[47]The INE data is available at www.ine.cl/estadisticas/sociales/demografia-y-vitales, last access 25 March 2021.

[48]Although the CASEN survey is not representative at the municipality level for all local municipalities, it is still useful to perform continuity tests at the electoral threshold, since the data contains enough observations per municipality. Indeed, the 2011 edition of the survey included 590 observations per municipality on average. None of my results rely on the CASEN data, since I did not use covariates for the estimation of the treatment effects. I only used some variables from this source for the continuity tests.

Centro de Estudios Públicos (Centre for Public Studies, CEP), which uses a nationally representative sample from the whole country. I used the waves conducted just before the presidential elections of 2010 (the last election under mandatory voting), 2012 and 2016.

Correlates of Voting

For the descriptive results, I estimate a linear probability model (LPM) to see the variables that correlate with voting before and after voluntary voting, following the strategy used in an article that studied the effect of voluntary voting on incumbency advantage.[49] The dependent variable is self-reported voter turnout (1 if the person reported having voted, 0 otherwise), and the independent variables are age in years, gender (1 = female, 0 = male), socio-economic status (low, middle, high), political affiliation (left, centre, right), membership of a political party (1 = member of a party, 0 otherwise) and years of formal education. I decided to show the results of the LPM instead of the logistic regression (see the results of the logistic regression, which point in the same direction as the LPM, in Table 10 in the Appendix) because the interpretation of the coefficients is more straightforward: the effect of a unit increase of the independent variable on the probability of voting. The model can be described as follows:

$$Vote_{it} = \beta 0 + \beta' X + e \quad (1)$$

Where X is a vector that synthesises all the independent variables described above.

Identification Strategy

A simple comparison between aligned and non-aligned municipalities would be prone to bias because these municipalities might systematically differ in many ways. For instance, voters in aligned municipalities with a left-wing government may be, on average, poorer and less educated compared to voters in non-aligned places. To account for these confounding factors, I implement an RD design, using the aligned mayor's margin of victory as the forcing variable, following a large set of studies that use RD in close elections with single-member districts.[50] The exact threshold would depend on the number of competitors and their relative vote share. For example, with two competitors, the cut-off point would be simply 50 per cent. However, with three competitors, with each of them obtaining around 33 per cent of the vote, the threshold would be close to 33.3 per cent. To account for these differences, I created a standardised variable of government party margin of victory, where 0 equals the winning threshold for each municipality, and positive values represent the distance between the winner and the runner-up. Thus, the

[49]Pablo Argote, 'Incumbency Advantage and Shocks in the Electorate: The Adoption of Voluntary Voting', *European Political Science Review*, 12: 2 (2020), pp. 1–25.

[50]Note that aligned mayor's margin of victory is the standardised vote share of a mayor that belongs to the same coalition as the president. For instance, if the Left won the presidency in 2013, then the forcing variable for 2016 would be the margin of victory of left-wing mayors. Thus, a positive coefficient always implies positive partisan bias.

government party margin of victory is a forcing variable that deterministically assigns treatment above 0.[51] Given that at the vicinity of 0 the only discontinuous change is the shift on the treatment status – being elected as mayor – it is possible to estimate local average treatment effects (LATEs) in the outcomes of interest.

I estimate an RD with the government party margin as the forcing variable, the government party victory as the treatment, and each of the mentioned outcomes.[52] I estimate a pooled model for all election years, only considering the data points of years of the municipal electoral cycle (2004, 2008, 2012 and 2016), following the strategy of Corvalan *et al.* and Lara and Toro. As the treatment occurred at the election, while all the outcomes were observed in the subsequent years, I computed the average of the outcome on the years after the election, excluding the year immediately after. This is because the municipal budget could have been decided under the previous mayoral administration. For example, for a given municipality, I include the treatment and the forcing variable in December 2008 – the year of the municipal election – and the outcomes for the years 2010, 2011 and 2012. The RD equation can be written as follows:

$$Y_{ip} = f(X)_{ip} + \beta 1(X_i > X0)_{ip} + e \tag{2}$$

Where *Yip* is the outcome measured in municipality *i* in presidential period *p*, $f(X)$ *ip* is a function for the left-margin forcing variable, and $(Xi > X0)$ is an indicator variable equal to 1 if the left-wing mayor won the election, and 0 otherwise.[53] The coefficient $\beta 1$ is the treatment effect. In this model, partisan bias means that the coefficient $\beta 1$ is positive, entailing that being an aligned mayor causes an increase either in transfers received from the government or in the use of those resources for local investment. The RD is estimated without covariates, to have a higher standard for rejection of the null hypothesis. Table 2 presents the summary statistics of the three primary outcomes by period.

To exploit the adoption of voluntary voting, I use the substantial decrease in voter turnout as a proxy for electoral risk. When comparing the municipal election of 2008 with the election of 2012, we see that voter turnout decreased by about 1 million votes, approximately a 16 per cent decrease. However, there is variation in the magnitude of such a decrease across municipalities, as some municipalities had a higher decrease in voter turnout compared to others. I identified the set of municipalities that experienced a more significant decrease in voter turnout from

[51]To test for a discontinuity in the forcing variable – for example, due to electoral fraud – I conducted a manipulation test based on the density discontinuity developed by Cattaneo, Jansson and Ma (Matias D. Cattaneo, Michael Janssen and Xinwei Ma, 'Manipulation Testing Based on Density Discontinuity', *Stata Journal*, 18: 1 (2018), pp. 234–61). I did not find evidence of fraud.

[52]To discard any alternative discontinuity at the threshold, I estimated continuity tests with 13 pre-treatment covariates (see Table 9 in the Appendix). There is not a significant jump in the cut-off point, which corroborates the validity of the RD estimates.

[53]To estimate the RD coefficients, I generally used an optimal bandwidth obtained by the Stata package 'rdrobust' developed by Calonico *et al.* (see Sebastian Calonico, Matias D. Cattaneo and Rocío Titiunik, 'Robust Data-Driven Inference in the Regression-Discontinuity Design', *Stata Journal*, 14: 4 (2014), pp. 909–46). For the interacted model described in equation 2, I estimated the RD model through a local linear regression with two bandwidths, 0.1 and 0.15, since the package does not allow me to add interaction terms.

Table 2. Summary Statistics

	2000–4	2004–8	2008–12	2012–16
Share of external transfers (%)	10.1	11.6	17.6	20.2
Log of total transfers per person	—	—	2.6	2.4
Share of external investment (%)	28.0	34.9	48.9	46.1

Source: Author's elaboration based on SINIM data.

2008 to 2012 through the following procedure. First, I computed a continuous variable by subtracting turnout rates between 2008 (last election with mandatory voting) and 2012 (first election with voluntary voting). Higher values of this variable imply a higher decrease in voter turnout. Then, I created an indicator variable equal to 1 if municipality i is in the top half of the decrease in turnout indicator, and 0 otherwise. This variable allows me to analyse whether partisan bias in 2016 was higher among municipalities that experienced a higher decrease in turnout in the past election, namely municipalities with higher electoral risk.

In addition to the main specification described in equation 2, I estimate an interacted RD model. Here, I interact the main treatment effect with an indicator variable ('*dec*' in equation 3) equal to 1 that identifies municipalities with a higher decrease in turnout, and 0 otherwise. The idea is to corroborate whether there is a higher partisan bias among municipalities with a higher decrease in turnout. Even if I am already addressing this hypothesis by the heterogeneous effect described previously, this interacted model allows us to compare coefficients in the same regression. This model can be described as follows:

$$Y_{ip} = f(X)_{ip} + \beta 1(X_i > X0)_{ip} + \beta 2(dec)_{ip} + \beta 3(X_i > X) * (dec)_{ip} + e \qquad (3)$$

In this model, the sum of $\beta 1 + \beta 3$ identifies partisan bias for municipalities with a high decrease in turnout, whereas $\beta 1$ is the treatment effect for municipalities with a low decrease. Thus, the quantity of interest is $\beta 3$, the difference between municipalities with a high and low decrease in turnout rates.

Results

Descriptive Results: Voluntary Voting

In this subsection of the results, I describe the main consequences of the adoption of voluntary voting. Figure 1 shows the trajectory of voter turnout in Chile, both in absolute value and percentage-wise. We observe that before voluntary voting, voter turnout was stable since approximately 6.5 million people systematically voted in every local election from 1992. However, in 2012 turnout decreased to 5.5 million, and in 2016 it even went below 5 million. In this sense, the shock in the electorate was substantial, which introduced uncertainty and risk in the electoral process.

Another way to look at this is by exploring how the voter changed under the two regimes. Table 3 displays the results of the LPM before and after voluntary voting. We see that the main difference between 2010 and 2012 is that age is a less relevant predictor of voting in the latter year, suggesting that the electorate became younger.

Table 3. Linear Probability Models: Chile, 2010, 2012 and 2016 CEP Data

	Dependent variable:		
	Vote 2010	Vote 2012	Vote 2016
Age	0.017[c]	0.007[c]	0.007[c]
	(0.001)	(0.001)	(0.001)
Female	0.030	0.005	0.049[a]
	(0.022)	(0.027)	(0.027)
Middle SES	−0.133[b]	−0.084	−0.014
	(0.061)	(0.075)	(0.068)
Low SES	−0.196[c]	−0.162[b]	−0.034
	(0.063)	(0.079)	(0.074)
Centre	0.037	−0.035	0.026
	(0.029)	(0.044)	(0.053)
Left	0.080[c]	0.060	0.072
	(0.030)	(0.039)	(0.045)
Right	0.049[a]	0.080[a]	0.063
	(0.029)	(0.044)	(0.051)
Party	0.014	0.043	0.109[c]
	(0.023)	(0.034)	(0.042)
Years of education	0.008[b]	0.009	0.007
	(0.004)	(0.006)	(0.005)
Observations	1,487	1,471	1,361
R^2	0.354	0.090	0.091

Notes: Standard errors in parenthesis. [a] p-value < 0.1, [b] < 0.05, [c] < 0.01. SES refers to socio-economic status. The reference category for SES is high SES and for political position is no position.
Source: Author's own estimations from Argote, 'Incumbency Advantage and Shocks in the Electorate'.

Likewise, if we compare 2016 to 2010, we see that party affiliation is a relevant predictor in 2016, suggesting that the electorate became more politicised. For all the other variables, the coefficients are similar across the three years.

The magnitude of the R-squared is also interesting. Under compulsory voting, it is much higher compared to 2012 and 2016, suggesting that in the two latter years, voting is more difficult to predict. In other words, there is a significant portion of voting that remains unexplained under a voluntary voting regime. Thus, we see that voluntary voting caused a large decrease in the electorate and changed the profile of the likely voter.

Partisan Bias

Before interpreting the results, I must remind the reader that, for partisan bias, the forcing variable is the government party margin of victory, and the treatment is

Table 4. Partisan Bias on Three Outcomes

Outcomes	Overall	Electoral cycle
Log of total transfers per person	0.34	1.4[c]
	(0.26)	(0.4)
Share of external transfers	2.3	1.9
	(2.2)	(2.4)
Share of external investment	12.9[c]	16.0[c]
	(4.7)	(5.9)
N	1,114	1,030

Notes: Standard errors in parenthesis. [a] p-value < 0.1, [b] < 0.05, [c] < 0.01. The RD estimates use the optimal bandwidth and are bias-corrected with a robust variance estimator as described in Calonico *et al.*, 'Robust Data-Driven Inference in the Regression-Discontinuity Design'.
Source: Author's elaboration based on SERVEL and SINIM data.

whether a government party mayor won the election. Thus, a positive coefficient implies a positive partisan bias. Table 4 shows the pooled RD estimates for the three outcomes. Overall, we observe a positive partisan bias, which is very substantial for the share of external investment. More importantly, the RD estimates for both total transfers per person and share of external investment are much higher for the years of the electoral cycle. For example, the overall point estimate of transfer per person implies that aligned mayors received $e^{1.4} = 4.05$, implying that such places received (4.05−1) * 100 = 300% more resources per person compared to non-aligned mayors on election years.

Regarding the outflows, there is a similar dynamic, as the coefficient of share of external investment is positive and very substantial. Essentially, it means that aligned municipalities used 16 percentage points more external resources for local investment compared to non-aligned municipalities, entailing that the resources received from the government were used at the local level.

Table 5 shows the RD estimates at different bandwidth choices (2.5, 5 and 10 percentage points) to corroborate the robustness of the findings described above. It looks like the total transfers per person indicator is less sensitive to the bandwidth choice, as the coefficient fluctuates between 1.45 and 2.3. For the other two variables, there are some changes in the magnitude of the coefficient, although the sign always remains positive.

Figures 2 and 3 present a visualisation of two of the indicators of partisan bias of the pooled model on the years of the electoral cycle.

Table 6 displays the partisan bias estimates separately for municipalities whose turnout rates decreased more and less than the median, for the election cycle of 2016. As argued previously, municipalities with a higher decrease in turnout are electorally riskier. We see that all the estimates are higher for municipalities whose turnout decreased more than the median. In fact, these local governments received significantly more resources from a co-partisan central government, a much larger share of external transfers, and used a higher share of external

Table 5. Partisan Bias on Three Outcomes on Election Years at Different Bandwidths

Outcomes	Bandwidth			
	+− 0.1	+− 0.05	+− 0.025	Optimal
Log of total transfers per person	1.46[c]	1.45[c]	2.3[c]	1.4[c]
	(0.4)	(0.53)	(0.77)	(0.4)
Share of external transfers	2.14	4.54	3.1	1.9
	(2.6)	(3.35)	(5.5)	(2.4)
Share of external investment	15.6[c]	7.7	3.73	16.0[c]
	(6.05)	(8.5)	(13.6)	(5.9)
N	377	198	97	1,030

Notes: Standard errors in parenthesis. [a] p-value < 0.1, [b] < 0.05, [c] < 0.01.
Source: Author's elaboration based on SERVEL and SINIM data.

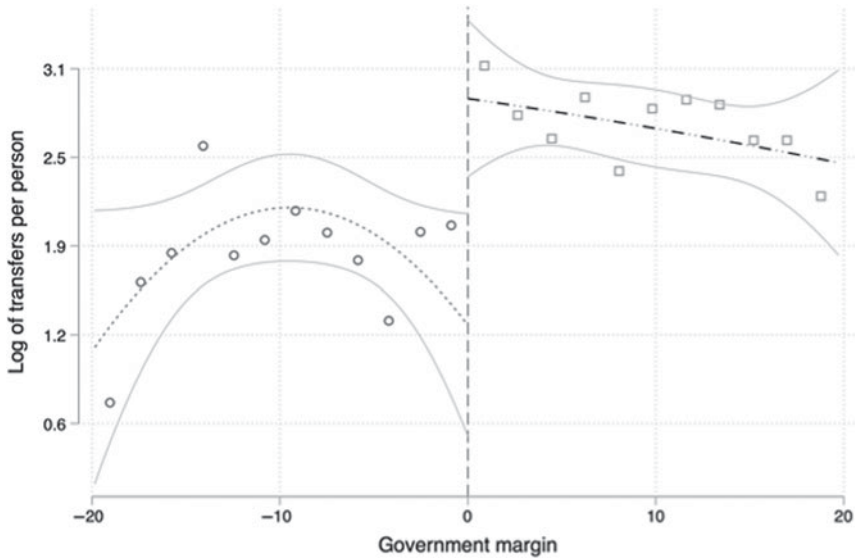

Figure 2. RD Plot Log of Transfers per Person
Source: Author's elaboration based on SERVEL and SINIM data.

resources for local investment. In this sense, it seems that electoral risk significantly intensified partisan bias.

Table 7 shows the results of the interacted RD model displayed in equation 2. In rows one and three, the interaction coefficients are not significant, although, in the second row, the share of internal investment has a p-value close to 0.1. In the second row, we see that in the log of transfers per person – the most direct measure of partisan bias as defined in the methods section – the trend is very clear: partisan

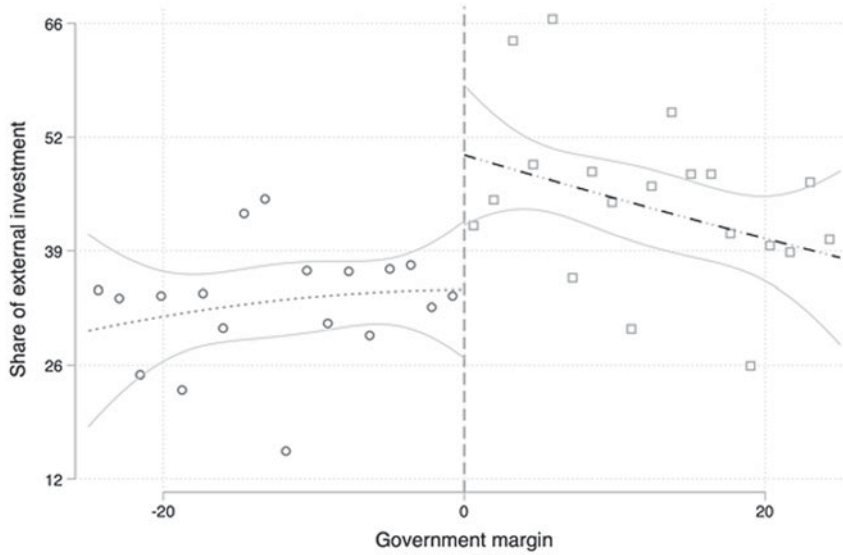

Figure 3. RD Plot Share of External Investment
Source: Author's elaboration based on SERVEL and SINIM data.

Table 6. RD Estimates for 2016 Period by Different Levels of Turnout Decrease (Year of Municipal Election)

Outcomes	Turnout decrease > median	Turnout decrease < median
Share of external transfers	14.0[a]	8.7
	(7.7)	(6.3)
Log of transfers per person	3.2[c]	1.1[a]
	(0.8)	(0.6)
Share of external investment	56.2[c]	20.1
	(18.7)	(17.5)
N	145	153

Notes: Standard errors in parenthesis. [a] p-value < 0.1, [b] < 0.05, [c] < 0.01. The RD estimates use an optimal bandwidth and are bias-corrected with a robust variance estimator as described in Calonico *et al.*, 'Robust Data-Driven Inference in the Regression-Discontinuity Design'.
Source: Author's elaboration based on SERVEL and SINIM data.

bias is substantively higher. Indeed, municipalities with a large decrease in turnout received $((e^{1.3} = 3.7) - 1) * 100 = 270\%$ more resources from the state per person compared to aligned mayors in municipalities with a low decrease in turnout, confirming the result in Table 6. Regarding the coefficient on the share of external investment, we see that the interaction coefficient points in the same direction: higher outflows for municipalities with a higher decrease in turnout.

Table 7. Interacted RD Estimates (Bandwidth Ten Percentage Points)

Outcomes / treatments	Aligned mayor	High decrease	Aligned[a] high decrease
Share of external transfers	10.7[a]	2.2	−6.8
	(6.2)	(4.2)	(5.4)
Log of transfers per person	1.4[b]	−1.8[c]	1.3[b]
	(0.67)	(0.46)	(0.58)
Share of external investment	21.9	−6.3	15.4
	(13.5)	(9.3)	(11.8)
N	92	83	88

Notes: Standard errors in parenthesis. [a] p-value < 0.1, [b] < 0.05, [c] < 0.01. The RD estimates use an optimal bandwidth and are bias-corrected with a robust variance estimator as described in Calonico *et al.*, 'Robust Data-Driven Inference in the Regression-Discontinuity Design'.
Source: Author's elaboration based on SERVEL and SINIM data.

Table 8. Placebo RD Estimates (2004–12) by Different Levels of Turnout Decrease in 2016

Outcomes	Turnout decrease > median	Turnout decrease < median
Share of external transfers	6.1	35.6[c]
	(6.2)	(11.1)
Log of transfers per person	0.27	0.58
	(0.53)	(0.62)
Share of external investment	−15.4	5.2
	(24.5)	(37.7)
N	102	146

Notes: Standard errors in parenthesis. [a] p-value < 0.1, [b] < 0.05, [c] < 0.01. The RD estimates use an optimal bandwidth and are bias-corrected with a robust variance estimator as described in Calonico *et al.*, 'Robust Data-Driven Inference in the Regression-Discontinuity Design'.
Source: Author's elaboration based on SERVEL and SINIM data.

What if, in the years before the adoption of voluntary voting, the central government had already allocated more resources to the subset of municipalities that later on experienced a high decrease in turnout? Perhaps the central government engaged in high degrees of partisan bias in these municipalities before the enactment of voluntary voting, so there may be other reasons that explain this result. To discard this alternative explanation, I estimated the RD separately for the same set of municipalities with a high and low decrease in voter turnout, but immediately before the adoption of voluntary voting. Table 8 shows that there is not a discernible pattern since partisan bias is not consistently higher in the set of municipalities that later experienced a substantial decrease in turnout rates. In this sense, this change in the allocation of resources is probably explained by the increase in electoral risk, as hypothesised in the third section.

Discussion and Conclusions

The allocation of resources from one political authority to an aligned receiver – what the literature in comparative politics defines as partisan bias – has been extensively documented both in the developed and the developing world. However, little is known about whether partisan bias is affected by large changes in the electorate induced, for example, by the adoption of voluntary voting. In this article, I argue that the shock in the electorate caused by this reform in Chile in 2012 created variation in electoral risk across subnational electoral units. Consequently, as Díaz-Cayeros argues,[54] authorities transferred more resources to co-partisans in electorally riskier units, intensifying partisan bias.

This article provides strong evidence to sustain three broad hypotheses. First, there is a high degree of partisan bias in Chilean municipalities, meaning that aligned mayors receive substantially more resources from the central government than non-aligned mayors. This finding is consistent with previous research on Chile, from authors such as Lara and Toro,[55] and Corvalan *et al.*;[56] however, the novelty is that partisan bias is also reflected in the outflow of resources, as these resources received by aligned municipalities were actually invested locally. Second, partisan bias was considerably higher in election years, suggesting that such resources were utilised for electoral purposes. And third, I show that municipalities experiencing a higher decrease in voter turnout after voluntary voting were the ones that received more resources, sustaining the hypotheses of electoral risk.

The latter finding is the main contribution of this paper, as it provides evidence for an unexpected consequence of voluntary voting. Immediately after this electoral reform, voter turnout substantively decreased, almost by 1 million in 2012, and even more in 2016. By itself, this shock in the electorate could affect many components of the political process, as it introduces a significant degree of uncertainty in the electoral outcome. Indeed, I show that the electorate changed after voluntary voting, as it became younger and more politicised. More importantly, evidence from the RD models suggests that politicians from the central government responded to this uncertainty by directing more resources to municipalities experiencing a larger decrease in voter turnout, namely those with a more uncertain electorate, and therefore electorally riskier. By altering electoral risk, voluntary voting changed the dynamics of partisan bias, affecting the resources available to local governments to undertake their duties. This externality of voluntary voting was hardly in the calculations of the authorities in charge of this reform, although it is important to consider when evaluating the effectiveness of this policy.

It is important to discuss Lijphart's argument in light of these findings. Lijphart assumes that voluntary voting would produce a bias in the political system, as the upper class is more likely to vote compared to less wealthy voters.[57] In this article, I provide evidence of a new consequence of voluntary voting: changes in the allocation of public resources within subnational units. As the electorate changed, the new regime encouraged elected officials to direct public resources for electoral

[54]Díaz-Cayeros, 'Electoral Risk and Redistributive Politics in Mexico and the United States'.
[55]Lara and Toro, 'Tactical Distribution in Local Funding'.
[56]Corvalan *et al.*, 'Indirect Political Budget Cycles'.
[57]Lijphart, 'Unequal Participation'.

purposes, to respond to electoral risk or to mobilise a smaller group of voters. Under voluntary voting, every resource invested in the campaign may have a higher return compared to compulsory voting, given the smaller and more uncertain electorate. Thus, voluntary voting could create even more incentives for these types of practices.

My findings are consistent with previous studies that have documented partisan bias in Chile, which were extensively mentioned in previous sections. However, to my knowledge, no other article has used measures of both inflows and outflows of resources. More importantly, I connect partisan bias and voluntary voting by using the latter as a driver of electoral risk. Thus, I am able to show that voluntary voting not only has distributive consequences for the country as a whole, as Carey and Horiuchi, Fowler, and Miller and Dassonneville demonstrated,[58] but also has an impact on the allocation of resources across subnational electoral units.

Future research is needed to fully explore the externalities of the adoption of either voluntary or compulsory voting or, more generally, of reforms that enhance electoral risk. For instance, there is mixed evidence on whether voluntary voting ends up favouring either right- or left-wing candidates, so it is unclear if this policy affects economic redistribution. In this sense, further studies are needed to fully understand the relationship between voluntary voting and outcomes such as income inequality. Another future line of research is how the voting regime affects vote-seeking strategies. Shane Singh shows that mandatory voting increases programmatic vote-seeking,[59] which is consistent with the findings presented in this article, where I provide evidence of the other side of the coin: voluntary voting increases the prevalence of non-programmatic politics. Building on this insight, future scholarship should further document the relationship between voluntary voting and other mechanisms by which politicians use public resources for electoral purposes.

Acknowledgements. I am grateful to the editor, the three anonymous reviewers, John Marshall, Daniela Urbina and Amy Catalinac for their amazing feedback on this paper.

[58]Carey and Horiuchi, 'Compulsory Voting and Income Inequality'; Fowler, 'Electoral and Policy Consequences of Voter Turnout'; Miller and Dassonneville, 'High Turnout in the Low Countries'.

[59]Shane P. Singh, 'Compulsory Voting and Parties' Vote-Seeking Strategies', *American Journal of Political Science*, 63: 1 (2019), pp. 37–52.

Appendix

Table 9. Continuity RD Estimates

Placebo outcomes	Robust estimates
Share active workers	−.01
	(.02)
Share under poverty line	.02
	(.02)
Share private-voucher	−.04
	(.03)
Share municipal schools	.04
	(.05)
Share male	.006
	(.005)
Share in public health insurance	.03
	(.02)
Average age	.36
	(.7)
Share married	.01
	(.01)
Average years of schooling	−.25
	(.33)
Share urban population	.01
	(.08)
Log population	−.35
	(.27)
Log government subsidies	.06
	(.1)
Log household income	−.02
	(.1)

Notes: Standard errors in parenthesis and clustered at the municipality level. [a] p-value < 0.1, [b] < 0.05, [c] < 0.01. The estimates are bias-corrected with a robust variance estimator as described in Calonico *et al.*, 'Robust Data-Driven Inference in the Regression-Discontinuity Design'.
Source: Author's elaboration based on CASEN and INE data.

Table 10. Logistic Regression Models: Chile, 2010, 2012 and 2016

	Dependent variable:		
	Vote 2010	Vote 2012	Vote 2016
Age	0.135[c]	0.030[c]	0.031[c]
	(0.009)	(0.004)	(0.004)
Female	0.101	0.007	0.217[a]
	(0.177)	(0.121)	(0.123)
Middle SES	−1.267[b]	−0.490	−0.076
	(0.634)	(0.362)	(0.315)
Low SES	−1.681[c]	−0.809[b]	−0.161
	(0.649)	(0.377)	(0.340)
Centre	0.304	−0.161	0.109
	(0.237)	(0.195)	(0.237)
Left	0.573[b]	0.253	0.313
	(0.245)	(0.172)	(0.201)
Right	0.385	0.370[a]	0.273
	(0.238)	(0.196)	(0.229)
Party	0.046	0.194	0.518[c]
	(0.193)	(0.153)	(0.190)
Years of education	0.052	0.013	0.033
	(0.038)	(0.018)	(0.024)
Constant	−3.519[c]	−0.607	−1.406[b]
	(0.890)	(0.532)	(0.572)
Observations	1,487	1,471	1,361
Log Likelihood	−542.603	−941.187	−869.464

Notes: Coefficients are in log-odds. Standard errors in parenthesis. [a] p-value < 0.1, [b] < 0.05, [c] < 0.01. SES refers to socio-economic status. The reference category for SES is high SES and for political position is no position.
Source: Author's own estimations from Argote, 'Incumbency Advantage and Shocks in the Electorate'.

Spanish abstract

Aunque el favoritismo político – cuando una autoridad transfiere recursos públicos de forma discrecional a un receptor políticamente alineado – ha sido estudiado extensamente, se sabe menos acerca de cómo esta práctica se ve afectada por el régimen de votación, ya sea éste obligatorio o voluntario. En este artículo, estudio el favoritismo político en Chile, utilizando datos administrativos de transferencias de recursos desde la autoridad central a los gobiernos locales, subrayando dos condiciones relevantes: el ciclo electoral, y la incertidumbre electoral causada por la adopción del voto voluntario. Encontré fuertes evidencias de favoritismo político, especialmente en años electorales y

en municipalidades electoralmente riesgosas. Esto sugiere que la incertidumbre introducida por esta reforma electoral indujo a los políticos a ubicar una gran cantidad de recursos a municipalidades en riesgo debido a que habrían de jugar un papel más significativo en el resultado electoral. Por encima de todo, estos resultados implican que el voto voluntario tiene un gran impacto en la forma en que los recursos son ubicados a lo largo de las unidades subnacionales.

Spanish keywords: favoritismo político; voto voluntario; riesgo electoral; elecciones; participación electoral

Portuguese abstract

Embora o favorecimento político-partidário – quando uma autoridade transfere recursos públicos discricionários para um partido alinhado politicamente – tenha sido amplamente estudado, pouco se sabe sobre como essa prática é afetada pelo regime eleitoral – voto obrigatório ou facultativo. Neste artigo, estudo o viés partidário no Chile, usando dados administrativos referentes à transferência de recursos da autoridade central para os governos locais, destacando duas condições de escopo relevantes: o ciclo eleitoral, e a incerteza eleitoral causada pela adoção do voto voluntário. Encontrei fortes evidências de parcialidade partidária, especialmente em anos eleitorais e em municípios eleitoralmente mais imprevisíveis. Os dados sugerem que a incerteza trazida pela reforma eleitoral induziu os políticos a alocar uma grande parcela de recursos em municípios de risco, pois tais recursos teriam um papel mais significativo no resultado eleitoral. Em geral, o estudo aponta que o voto facultativo tem um grande impacto na maneira como os recursos são alocados nas unidades subnacionais.

Portuguese keywords: viés partidário; voto facultativo; risco eleitoral; eleições; participação eleitoral

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