Group dynamics and Party Switching: Evidence from Argentina's Roll Calls.[*]

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Abstract

Political parties are the nexus between voters and politicians. Legislative party switching not only distorts the representativeness of electoral results but also threatens the stability of the democratic system by obfuscating the electorate. In order to design policies that restore the representativeness of the political system, it is paramount to understand the determinants behind legislators' behavior. Using a novel dynamic panel data set, constructed by collecting more than 420,000 votes from Argentina's House of Representatives, this paper studies party switching and group dynamics. This work estimates the relevance of individual and party characteristics as well as peers effects, power configuration and the possibility of remaining independent inside the Chamber as key features of legislator's decision to switch. I find that party switching is an interdependent decision that relies more on same party peer effects than in different party peer effects. Ideological Distance, loyalty to party leaders, power of the party and the legislative cycle are important determinants of party switching. Moreover, increasing reputation costs of party switching is less effective at preventing it than promoting a transparent electoral process. By exploring the motives behind the switch, I find that party switchers have a higher probability of improving their ballot position compared to non switchers, suggesting that office seeking legislators have higher incentives to switch. Additionally, party switchers changed their voting behavior in the period close to their switching meeting, whereas non-switchers' behavior was not affected by same party switches. Lastly I find that both office seeking and ideology seeking motivations affect the decision of a legislator to switch in their term.

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1 Introduction

In a representative system, political parties reduce information costs for the electorate by grouping like-minded politicians. Moreover, parties provide resources to politicians, helping them to improve their careers. When politicians get appointed to the House of Representatives and become legislators, parties discipline them by demanding support and loyalty. However, some legislators may benefit from party switching during their term in office. For instance, by switching parties they may be able to extend their tenure (Turan, 1985). This opportunistic behavior deteriorates the representative system because it neglects the election that appointed them under their previous parties (Perícola and Linares, 2013). It also affects switchers' voting behavior in the Chamber as they try to protect their ideological reputation among voters (Nokken, 2009). Moreover, it alters resource allocation and power configuration of the Chamber. What motivates legislators to switch parties or to make new ones? Is it possible to explain party switching and party splitting from the history of legislators' voting behavior?

This paper studies party switching by analyzing 15 years of voting behavior in Argentina's Congress. I estimate the importance of peer effects, power configuration and the possibility of remaining independent inside the Chamber as determinants of legislator's decision to switch parties. I construct a novel dynamic panel data set by collecting 1,791 roll calls, more than 420,000 voting decisions, from Argentina's House of Representatives from March 2002 to June 2017. The data was collapsed by meeting to study the decision of legislators per meeting (day) as unit of observation.

I study the legislator's decision to switch parties by using a pooled logit model. The identification strategy consists on analyzing the panel data, controlling for time and individual fixed effects. Additional sources of variability come from a change in electoral law, different generations of legislators coexisting in the same period, as well as time variability and individual variability.

Results suggest that legislators' switch is based not only on individual characteristics but also on peers' decisions. In agreement with previous studies, I observe that legislators' characteristics, such as loyalty to party leaders, ideological alignment with the party, and the time in office during the term are also relevant. Moreover, characteristics of the party like unity and government alignment are important to explain legislators' switch. Finally, the distribution of power in the Chamber and the independent option are both significant determinants.

Exploring party switching in Argentina offers the opportunity to work with a multiparty system where two different generations of legislators overlap in congress creating an extra source of variability. Studies of party switching in Argentina are few and limited. They present detailed descriptions of the phenomenon and the determinants behind party switching fluctuation along legislative periods (Degiustti, 2015, 2016), but fail to account for individual decisions.

In 2000, Argentina experienced economic instability and unprecedented corruption scandals within the national administration and the Senate, leading to the collapse of the economic and political systems in December of 2001 (Hunter, 2010; Levitsky, 2003). Massive demonstrations under the slogan "Out with them all, none should stay!" were followed by a three month period in which the country had five different presidents. Politicians' image was completely deteriorated. Afraid of being recognized as part of the problem, politicians abandoned their parties, several parties split and new parties were created, challenging the historical bipartisan system. In Argentina, a politician that switches parties is consider a traitor, so switching parties should have a large reputation cost for politicians.[1] Nevertheless, party switching has been a common practice inside and outside the Chamber (Degiustti, 2015, 2016). Almost one every four legislators have switched parties at least once since 2002.

Party affiliation models assume that party switchers will be accepted into any new party. How-

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[1]From Argentinian dialect Lunfardo dictionary party switcher definition is traitor/ disloyal

ever, in Argentina's Chamber the role of independents and single-person parties (SPP) cannot be neglected (Perícola and Linares, 2013). SPP have kept an average of 7% of the seats and reached up to 10%. There is no clear explanation for why those legislators end in SPP. It can be either a personal choice or the remaining parties being reluctant to incorporate new members that have betrayed their previous political space. Besides, Argentine Constitution and House's Rules prevent a party to expel a legislator of the Chamber. A famous example of this situation occurred in 2005 when, after the election, Eduardo Lorenzo Borocotó, elected with "Propuesta Republicana" (PRO), abandoned the party and refused to leave his seat. Borocotó was publicly shamed by the media increasing the costs of switching for the rest of the legislators. Electoral Court ruled in his favor in 2007, stating that seats belong to legislators and not to parties which had supported them. The court decision established a precedent that harmed the credibility of Argentine parties' threats.

In order to make the electoral process more transparent and reduce the number of parties running elections, in 2009 a new electoral law was sanctioned. The law establishes Primary Open Simultaneous Mandatory elections (PASO in Spanish), in which more than one list is allowed to compete from the same party. Politicians are now able to openly challenge party leaders for candidate positions instead of being forced to abandon their parties to compete. I explore how changes in party switching costs as well as in the electoral law affect party switching in the Chamber.

Finally, I explore the motivations behind the switches in terms of legislators being office-seekers or ideology-seekers, by considering ballot position improvements and changes in voting behavior in the roll calls.

1.1 Related Literature

The political science literature explores the drivers of party switching as a matter of affiliation. Empirical studies suggest that legislators escape highly disciplined parties (Heller and Mershon, 2008); and electoral rules and legislative cycles impact the switching decision (Klein, 2016; Mershon and Shvetsova, 2008; Reed and Scheiner, 2003). In addition, estimation of a dynamic discrete choice model shows that pork barrel, ideological consistency, short term electoral success and government alignment are key features of party affiliation decision (Desposato, 2006; Radean, 2017). However, the empirical literature has not incorporated peer effects into the analysis.

Theoretical work models party affiliation as an interdependent decision (Aldrich and Bianco, 1992; Mershon and Heller, 2009; Desposato, 2006; Laver and Benoit, 2003). Mershon and Heller consider the interaction between legislators and party leaders, while Aldrich and Bianco examine election oriented party affiliation. Desposato extends Aldrich and Bianco analysis with different payoff types and political systems in terms of party control. Laver and Benoit examine how parties attract and are willing to accept new members depending on the new Chamber's configuration. In a multiparty system the arena's configuration determines who has veto power or if there are pivotal agents.

Argentina's political system, career concerns, inter-party legislative dynamics and the role of cartels have been previously studied, for example, by Rossi and Tommasi (2012); Lucardi and Micozzi (2016); Dal B and Rossi (2011); Jones (2002); Jones, Saiegh, Spiller and Tommasi (2001), Jones, Hwang and Micozzi (2009); Jones and Hwang (2003) and Jones and Hwang (2005); Kikuchi and Lodola (2014). Party bosses, usually provincial governors, have a major role in forming legislator's career. They determine renomination and influence legislators' behavior through party leaders in the Chamber. Legislative cycles dictate how legislators exert effort, which in turn explains their political success. For a detailed explanation of relevant actors, context and rules of Argentine political system see Jones (2016).

In the next sections I present a description of Argentina's Political System, Section 2, followed

by a characterization of the data and descriptive statistics, Section 3, as well as the methodology used, Section 4. Section 5 shows the main results. Conclusions are in the last section.

2 Argentina's Political System

Argentina has been a democracy with separation of powers since 1983. The legislature branch is exercised in Congress by both Senate and Chamber of Representatives, which consists of 72 and 257 legislators respectively. As a federal country, seats are assigned proportionally to the population registered in each district in 1980. There are 24 districts, 23 provinces and the capital district, Buenos Aires city. Table 1 shows the number of seats contested in each district for a given election.

Regarding the Chamber of Representatives, each legislator takes their seat for a term of four years, and half of the Chamber is renewed every two years (alternating 127 seats and 130 seats). The two-year period between elections is defined as a "congress". Hence, in a given congress, legislators of the last two elections coexist. Overlapping generations provides an additional source of variability to the study which is not present in other countries such as Italy or Brazil, where the full Chamber is renewed with every election.

In order to be elected as legislators, politicians are proposed by their parties in closed ranked lists after primaries. Prior to 2011, primaries were defined by party members only or by party members and independent voters (Jones and Hwang, 2005).[2] In 2011 a new electoral law established Primary Open Simultaneous Mandatory elections (PASO) where all parties compete simultaneously with one or more lists in order to determine which list is going to represent them in the election, provided that the party gets at least 1.5% of the votes.[3] The change in law was inspired by the idea that it was too costly for parties to decide their candidates. For instance, parties were split because candidates were not willing to withdraw themselves from election. The new law was supposed to make the process more transparent by placing the weight of the definition on voters from the beginning and by assigning funds to every list in each party.

Final elections use the closed list D'Hont divisor form of proportional representation (Rossi and Tommasi, 2012), which consists of dividing the number of votes each party obtained successively by the number of seats up to the total number of seats to be allocated. Seats are allocated to the largest quotients. For example, if parties A, B and C are competing for 3 seats, with 30,000 20,000 and 5,000 votes respectively, party A's quotients are 30,000, 15,000 and 10,000, party B's quotients are 20,000, 10,000 and 6,667; and party C's quotients are 5,000, 2,500 and 1,667. Hence, party A gets 2 seats and party B gets 1 seat.

Table 1 presents a descriptive detail of the average number of relevant lists contesting in general elections, the size of the list and the number of seats obtain for a typical list. Those districts with more seats contested per election present a larger average of lists competing in elections. The number of candidates in a given list is proportional to the seats contested in the district at a given election. In terms of seats obtained per list, Buenos Aires district stands out because it presents a large standard deviation (6.84) relative to the mean (7.65), a result of uneven distribution of votes among parties.

Once elected, legislators are supposed to start their term on December 10th. Inside the Chamber, a group of more than three legislators can form a bloc which is entitled to a portion of the Chamber's budget, two secretaries and administrative staff proportionate to the size of the bloc.[4] A bloc consisting

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[2]Independents are those without affiliation to any party.

[3]Electoral Law 26,571 not only affected the way the elections are run, but also the requirements for parties to run and how parties are funded.

[4]Internal regulation of the legislator Chamber, articles 55 to 57.

Table 1: Lists and Seats per district

District	Lists Average	Candidates per list	Seats per election	Seats obtained per list			
				Mean	SD	Min	Max
Buenos Aires	4.67	43	35.0	7.65	6.84	1	22
Capital District	4.56	20	12.5	3.02	1.68	1	8
Catamarca	2.00	5	2.5	1.38	0.18	1	2
Chaco	2.00	7	3.5	1.83	0.71	1	3
Chubut	1.50	5	2.5	1.88	0.18	1	3
Corrientes	2.50	7	3.5	1.64	0.45	1	3
Córdoba	3.71	15	9.0	2.57	1.32	1	5
Entre Ríos	2.40	8	4.5	1.90	0.77	1	3
Formosa	1.50	5	2.5	1.88	0.18	1	3
Jujuy	2.50	6	3.0	1.25	0.35	1	2
La Pampa	2.33	5	2.5	1.17	0.24	1	2
La Rioja	1.80	5	2.5	1.70	0.14	1	3
Mendoza	3.00	8	5.0	1.77	0.73	1	3
Misiones	1.75	7	3.5	2.38	0.53	1	4
Neuquén	1.67	5	2.5	1.50	0.24	1	2
Rio Negro	1.50	5	2.5	1.88	0.18	1	3
Salta	2.40	7	3.5	1.57	0.54	1	3
San Juan	1.50	6	3.0	2.25	0.35	1	3
San Luis	1.50	5	2.5	1.88	0.18	1	3
Santa Cruz	1.67	5	2.5	1.50	0.24	1	2
Santa Fe	3.00	16	9.5	3.37	1.25	1	6
Santiago del Estero	1.83	7	3.5	2.31	0.45	1	4
Tierra del Fuego	2.00	5	2.5	1.38	0.18	1	2
Tucumán	2.14	8	4.5	2.29	0.77	1	4

Calculations based on information provided by the National Electoral Chamber. List average refers to the number of lists contesting in a given election with at least one successful candidate. Some districts have an odd number of seats. For example, Santa Fe has a total of 19 seats, 9 are contested in one election while the following 10 are contested in the next election.

of one or two legislators in the Chamber can be constituted if and only if the party was registered before the election. For instance, if three parties run the election together as a coalition and get four seats, during the congress the legislators can split and form their blocs with less than 2 members, but if one or two legislators from a party decide to leave the bloc, they are not allowed to form a bloc or entitled to cash the benefits. According to the records of each legislator's assigned staff, however, this rule has not been enforced.[5]

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[5]From biannual records of Directorio Legislativo 2002 to 2016. Barón (2003, 2005, 2007,2009, 2011, 2013, 2015, 2017)

3   Data and Descriptive Statistics

I collected roll calls from the Argentina's House of Representatives for the period March 2002-June 2017, public data from the official registries of the Congress.[6] There are 1,791 roll calls in that period. Additionally, I obtained electoral information from the National Electoral Chamber. These data includes the names of the legislators that were assigned seats and also which parties were incumbents at the province and at national level.[7] Finally, I compiled information regarding the organization of the parties inside the Chamber from a series of reports that contain party information.[5]

A roll call includes each legislator vote regarding a particular topic in the agenda, the day and time when the votes were cast, the voting base and the voting rule. Legislators have a short period of time to emit a vote that can be either affirmative (Yea), negative (Nay) or abstention. If they fail to cast a vote, because they refuse to vote or abandon the Chamber, the vote is recorded as absent. Around 25% of the votes are cast absent in the period. These levels of absenteeism are five times higher than those reported by Brown and Goodliffe (2017) for US congress in 2011. Beginning in 2007, the data contains information about the reason for why legislators are absent. For instance, they could have an authorized license or they could be traveling for work reasons. Figure 1 shows that the levels of absenteeism are relatively constant during the period studied.

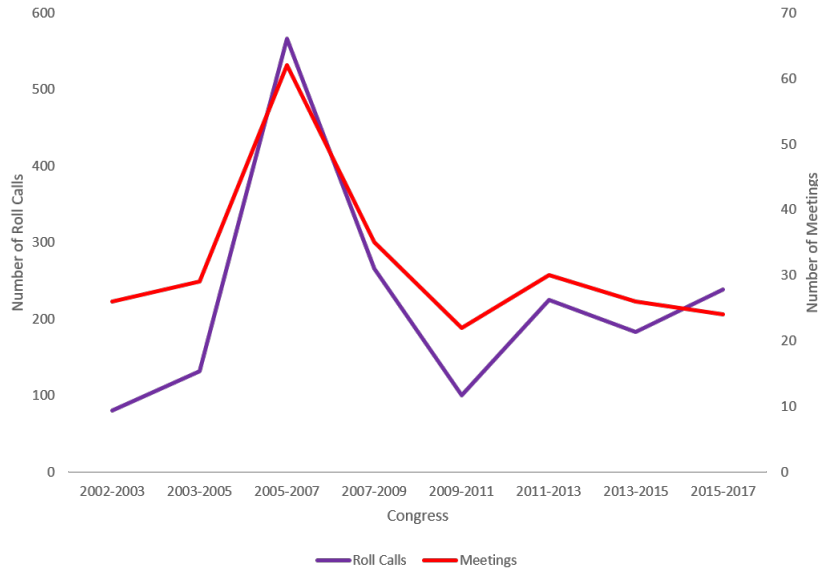Figure 1: Absenteeism in the House of Representatives
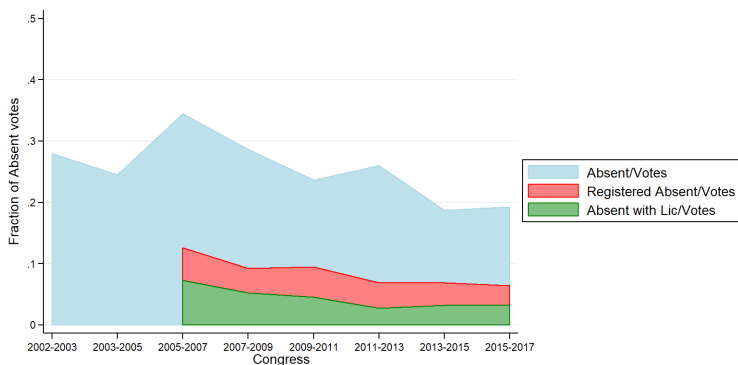
Calculations based on information provided by attendance records and roll calls of Argentina's House of Representatives March 2002-June 2017.

In order to capture a legislator's decision to switch parties, the relevant unit of observation is legislator-meeting (day), even when a meeting has more than one roll call, since party switching is a daily decision. Legislators with leave of absence were eliminated from the data because they do not play an active role in the Chamber. Hence, by collapsing the data to meeting level, I constructed a panel with 64,022 observations.

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[6]http://www.hcdn.gob.ar/

[7]https://www.electoral.gov.ar/

Figure 2: Roll Calls (left axis) and Meetings (right axis) by congress.

Calculations based on information provided by roll calls of Argentina's House of Representatives March 2002-June 2017.

Figure 2 shows both roll calls and meetings for each congress. Since the trend is the same, collapsing the data by meetings retains the most relevant features.

3.1 Definitions of party switching

This work focuses on legislative party switching by considering blocs in the Chamber as political entities. The definition of party switching is based on Nokken (2009). Party switcher is any member who served in Congress under more than one bloc, whether the switch occurred during his term in office or between separate terms of service within less than six years. Since Argentinian parties tend to re-label themselves inside and outside of the Chamber (Lupu, 2013), I surveyed news to determine if the changes in blocs' names were due to conflict or mere re-labeling.
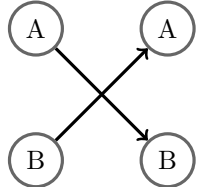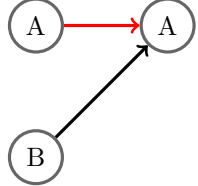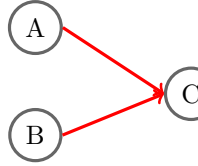
Table 2 presents the criteria used in the data to define party switching. I consider a legislator switching parties if: (I) a legislator switches from party A to party B and both parties are active before and after the switch; or (II) a legislator switches from party B to party A, and party B disappears after the switch. I do not consider as party switching cases in which parties do not coexist, as in cases III and IV. In the absence of conflict, it can not be claimed that the switch is in fact a party switching, and both cases are considered party re-labeling for the purpose of this work.

When a party is about to disappear from the chamber, its legislators may anticipate the dissolution of their party and decide to switch earlier. These switches are captured by the second case of the definition of party switching. However, those switches may be interpreted as a merger between parties instead of an individual decision of the legislator to switch.

To distinguish between party switches from case 1 to those from case 2, I considered switches from parties that are not SPP, which concentrate 97.95% of the switches. Only 12.27% of those party switches occurred a week before the party is dissolved and just 13.84% of the party switches occurred

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a month before the party is dissolved. As robustness check, I excluded from the definition of party switching those switches that occurred 7 days prior to the party being dissolved (Switch-W) and 30 days prior to the party being dissolved (Switch-M).

Table 2: Definitions of party switching (black)

CASE	t=0 t=1	
I	A → (cross) A / B → B	Party Switching
II	A → A, B → A	From B to A: Party switching / Merge
III	A → B	Party Re-labeling (No conflict)
IV	A → C, B → C	Party Re-labeling / Merge. (No conflict)

The number of legislators exceeds 257 in all congresses due to attrition and substitutions. As a result of reelections, a total of 1,037 distinct legislators took seat during the period studied. Table 3 shows the number of party switchers and occurrences in the last 15 years using the above definition. The amount of switching episodes varies considerably along the congresses, but in average almost one in four legislators have switched at least once. Figures 7 and 8 in the Appendix present a clear picture of the dynamics of party switching in each congress.

Table 3: Party switching in the House of Representatives (totals)

	2002-2003	2003-2005	2005-2007	2007-2009	2009-2011	2011-2013	2013-2015	2015-2017	Total
# Legislators	271	261	282	266	263	261	264	265	1,037
# Switchers	70	22	60	67	28	31	17	28	244
# Switches	107	22	82	70	33	32	16	29	391

Calculations based on information provided by roll calls of Argentina's House of Representatives March 2002-June 2017.

3.2 Background

In order to understand why legislators switch parties, it is paramount to present some context characterization. From the return of democracy, in 1983, until the end of the 90's, the system was consider almost bipartisan. Even if there were some small parties, the vast majority of the electorate was captured by "Partido Justicialista"(PJ) and "Union Civica Radical"(UCR) (Jones and Hwang, 2005). In 1999 UCR allies with small progressive parties to win the national election. But the alliance did not last, bribery rumors in the Senate and the Administration lead to the Vice President's resignation. In December 2001, the President left office constituting one of the greatest scandals in Argentina's history. This was the beginning of one of the major political crisis of the last decades. The election in 2003 was influenced by the events of 2001 and the movement "Out with them all" which resulted in UCR losing 7% of the seats and without a clear opposing party to PJ, as Table 4 shows. In 2005, the gap between the second and third party was less than 8%. Moreover, single-person parties (SPP) concentrated an important percentage of the Chamber during the entire period.

Table 4: Percentage of seats of dominant parties in Argentina's House of Representatives

	2002-2003	2003-2005	2005-2007	2007-2009	2009-2011	2011-2013	2013-2015	2015-2017
% 1st Party	45.20 PJ	50.10 PJ	46.62 PJ	48.47 PJ	33.48 PJ	47.23 PJ	47.51 PJ	27.68 PJ
% 2nd Party	24.51 UCR	17.17 UCR	14.58 UCR	9.25 UCR	17.28 UCR	14.94 UCR	13.45 UCR	16.74 PRO
% 3rd Party	5.33 ARI	4.18 ARI	8.63 Peronista Federal	6.97 ARI	11.08 Peronismo Federal	7.00 Peronismo Federal	6.51 PRO	14.63 UCR
% SPP	5.29	9.64	7.23	8.56	5.93	5.59	7.19	7.72

SPP refers to seats belonging to single-person parties. PJ is short for Justicialista-FPV, ARI is short for ARI-Coalicion Civica. Calculations based on information provided by roll calls of Argentina's House of Representatives March 2002-June 2017.

Table 5 presents the evolution of the number of parties in the Chamber. As a federal country, Argentina has an important amount of small parties, represented by the single-person parties (SPP). Originally, these parties were sufficiently popular in their district to get the small district seats but couldn't compete at the national level. But SPP includes independent legislators too. Independents are legislators that were elected in a party but decided to constitute their own bloc in the Chamber. The table shows an increase in the number of independents after the first elections following 2001 crisis.

Table 5: Number of political parties in the House of Representatives

	2002-2003	2003-2005	2005-2007	2007-2009	2009-2011	2011-2013	2013-2015	2015-2017	Total
# Parties	34	50	46	49	38	39	37	39	148
# SPP	18	33	39	36	23	24	24	26	95
# Independents	2	9	15	9	4	7	5	5	42

Calculations based on information provided by roll calls of Argentina's House of Representatives March 2002-June 2017.

However, it was not until 2005 that independents and party switching became scandalous. The most controversial case occurred when Eduardo Lorenzo Borocotó, elected with "Propuesta Republicana" (PRO) decided, before taking his seat in congress, to abandon his party while keeping his seat. PRO appealed his decision to the Chamber and the Electoral Court, but it was overruled in both instances. Argentina's Constitution states that seats belong to legislators elected and not to parties. Borocotó established himself as independent and voted against PRO in almost all subsequent roll calls. Moreover, in the same year, one faction of the PJ left the party and the party name was contested, resulting in a new label for PJ. In this work, I group both PJ and Justicialista-FPV under the latter label.

Legislators' votes provide information about their underlying ideology. Spatial models of parliamentary voting can be used to place legislators in the political space, defined by estimating their ideal points. This work uses Argentina's roll calls to perform W-NOMINATE estimates of legislators' ideal points presented in Figure 3. Since the method relies on disagreement, legislators with less than 10 votes and roll calls with less than 2.5% of votes in the minority were excluded from the computations. The graphs represent a two dimensional political space, in which every point is a legislator's ideal point. Legislators from main parties are colored as follows: Justicialista-FPV in light blue, UCR in red, ARI-Coalicion Civica in green, PRO in yellow, Peronismo Federal and Peronista Federal in blue and FR-UNA in pink. Legislators from other parties appear in grey, while party switchers appear in orange. W-NOMINATE sets the dimensions for each congress in order to make the most efficient classification. Therefore, the orientation of the dimensions is arbitrarily determined, making comparisons between a legislator's positions in different congresses invalid. Nevertheless, comparisons within congresses over legislators positions and party positions are meaningful.

In the first congress, top-left in Figure 3, Legislators are positioned all over the two dimensional space. However, in the next congresses, the distance between legislators from the national incumbent party, Justicialista-FPV, and those from opposing parties UCR and ARI-Coalicion Civica increases. Moreover, from 2007 to 2015, legislators from opposing parties UCR, ARI-Coalicion Civica and PRO get closer together in the space, which is consistent with them forming the coalition "Let's change". In 2015, the coalition wins the national election, making Justicialista-FPV and FR-UNA the opposition. Once again legislators from opposing parties are split in the political space. Finally, the congresses with the largest number of party switchers, 2002-2003 2005-2007 and 2007-2009, show that most of them are located in the center of the political space in one dimension. The results suggest that high ideological distances from legislators to their parties may induce party switching.

Figure 4 presents the evolution of the average party cohesion and size for the four most relevant parties during the eight congresses. Party cohesion is a unity measured based on the Rice unity score (Rice, 1928). It was constructed from legislators' votes. The left axis refers to cohesion index, represented by the lines, while the right axis refers to the party size in bars. For details regarding the definition of party cohesion see next section.

Given the construction of the score, parties that increase in size by including non aligned legislators will experience a decrease of their cohesion scores. On the other hand, a reduction of party size due to the exclusion of aligned legislators will also lead to a decrease of cohesion scores. However, the plot suggest that there is not a clear trend between party cohesion and party size. For example, UCR, in red, looses seats from the first to the second congress and its cohesion index increases, while from the second to the third congress, looses seats but its cohesion index decreases. In average, the four parties have become more cohesive along the time. But only party Justicialista-FPV, in light-blue, has a monotonous increase in cohesion until 2015. After losing the elections, both the party size and the cohesion of Justicialista-FPV decrease, suggesting a rupture or crisis in the party.

Figure 3: Argentina's Political Space. Ideal points from W-NOMINATE.
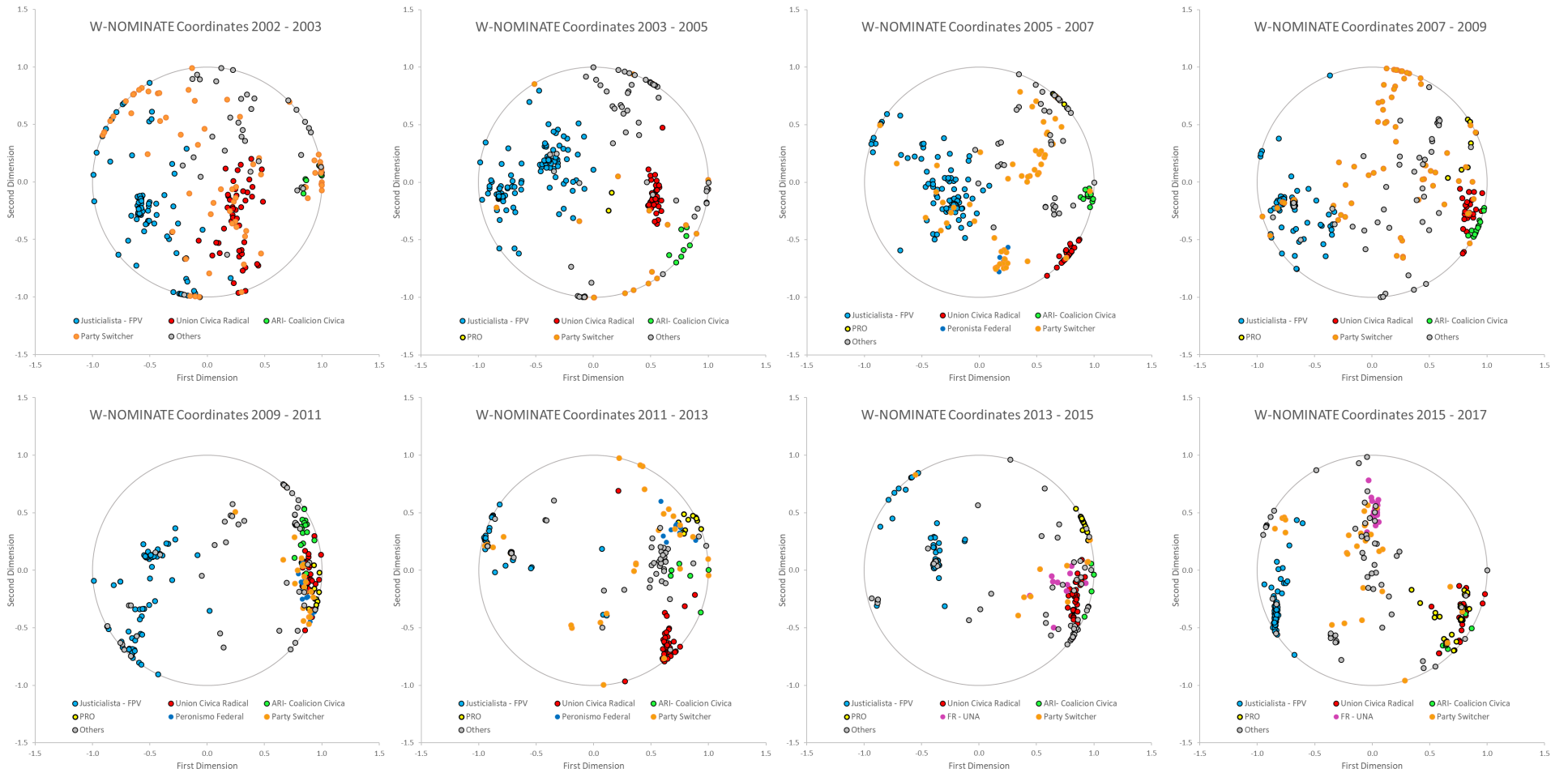
Legislator's ideal point as an individual point inside the two dimensional political space of Argentina. Estimations performed with W-NOMINATE using Argentina's roll calls. Legislators with less than 10 votes and roll calls with less than 2.5% of votes in the minority were dropped to avoid perfect agreement. For more information on how the method works see Poole and Rosenthal (1997) and Poole, Lewis, Lo and Carroll (2011).

Figure 4: Party Cohesion (lines, left) and Party Size (bars, right) for the four most important parties.
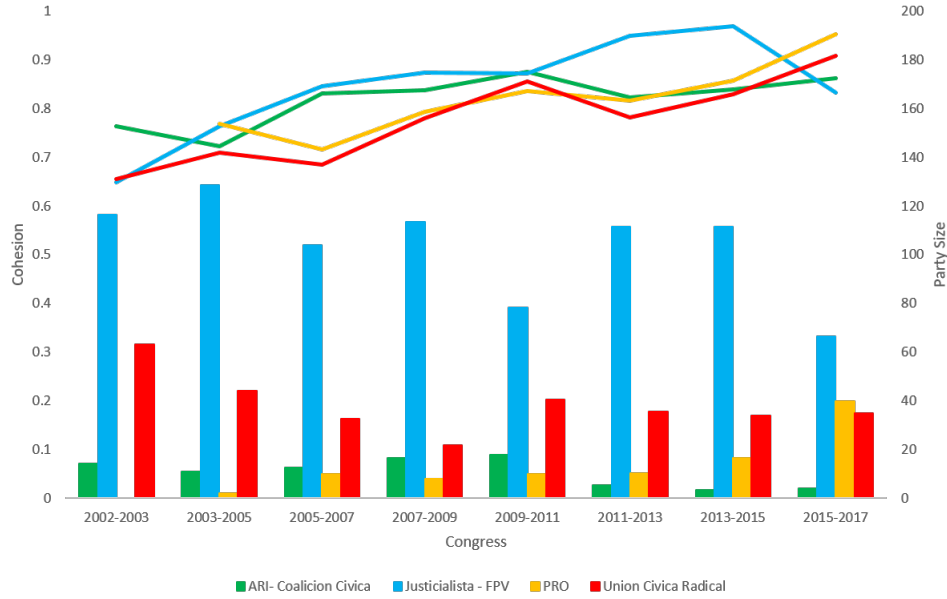
Cohesion (left axis, lines) is measured similarly to the Rice unity score (Rice, 1928), but including abstentions and absenteeism using the formula $\text{cohesion}_j = \frac{\max(\text{yeas,nays,abstains,absentees})}{\text{yeas+nays+abstains+absentees}}$ where yeas, nays, abstains and absentees are the total number of votes in the roll call that correspond to each category respectively. Party size (right axis, bars) is the number of seats belonging to each party. Calculations are based on information provided by roll calls of Argentina's House of Representatives March 2002-June 2017.

4   Methodology

I estimate the regression model

$$Switch_{it} = \mathbb{1}(\beta X_{ijt} + \alpha_i + \epsilon_{it} > 0) \tag{1}$$

where $Switch_{it}$ is a dummy variable coded one for legislator i in the meeting t in which they were last recorded in a party before switching. In the cases that a legislator was not part of the Chamber for more than six years, three elections, and reenters with a new party, I do not consider the change as party switching. X_{ijt} refers to the characteristics of legislator i in party j at time t, and ϵ is the error term with standard logistic distribution. A typical concern when conducting inference for the estimated parameters of equation (1) is that the errors for the same legislator might not be independent across meetings. To address this concern I report all standard errors clustered at the legislator level.

To account for a narrower definition of party switcher that considers only case I, I constructed Switch-W$_{it}$ and Switch-M$_{it}$, dummy variables coded one for a legislator i in the meeting t in which they were last recorded in a party before switching if the switch did not occurred in the 7 or 30 days, respectively, before the party dissolution.

In order to evaluate the determinants of a legislator decision to switch parties, I construct a number of variables to account for both group dynamics and individual characteristics.

Legislators may switch parties alone or in groups. Switching parties at the same time than their peers, even when the peers belong to different parties, may reduce the reputation cost of switching due to sharing the media and public shaming. To capture the interdependence nature of a legislator decision to switch parties, I construct *Peer effects$_{it}$*, a variable that accounts for other legislators $-i$ (peers of i) switching their parties at meeting t. For example, if two legislators have switched parties in t, their value of peer effects will be one, while the peer effects for the remaining legislators in the chamber will be two.

In a multiparty system, legislators' decision to switch parties may be influenced by the power each party has to approve or reject bills (Laver and Benoit, 2003). To capture the party pivotal power I construct the Shapley Shubik's index *Party Power*, according to the voting base and the voting rule at each roll call. The voting base in the Chamber is usually all cast votes, including absent votes, but for some specific roll calls it can be all present legislators or total number of legislators. Voting rules include majority, two thirds and three quarters of the Chamber. I performed calculations with Litvak (2014) based on Shapley and Shubik (1954) formula:

$$\text{SPPI}_j = \frac{\text{\# of times Party j is pivotal}}{\text{Total \# of times all parties (together) are pivotal}} \tag{2}$$

For instance, if party A has more legislators than the quota determined by the voting rule, party A has a power value of one for that roll call, while the rest of the parties have power value of zero. Under these circumstances party A is considered a dictator. By including party power, it is possible to establish if powerful parties are more likely to attract or repel legislators. Additionally, party switching may be influenced by the state of the Chamber in each meeting. To control for the distribution of power in the Chamber at each roll call, *Power Distribution* considers the difference of power indexes of the two most powerful parties. If one party concentrates most of the power, the difference will be close to one. Whereas if the power is equally distributed the difference will be small.

Legislative party switching may be a response to parties enforcing discipline over their members. Heller and Mershon (2008) propose as a measure of party discipline to compute a Rice unity score (Rice, 1928) similar to the one introduced by Weldon (2002). I include *Party cohesion* as the unity measure constructed for each party at each roll call. It includes not only abstention as in Weldon (2002) but also absenteeism. Being absent in Argentina's House of Representatives is a way to avoid openly challenging party leaders (Jones and Hwang, 2003). Hence, for each party j:

$$\text{cohesion}_j = \frac{\max(\text{yeas}, \text{nays}, \text{abstains}, \text{absentees})}{\text{yeas} + \text{nays} + \text{abstains} + \text{absentees}} \tag{3}$$

where yeas, nays, abstains and absentees are the total number of votes in the roll call that correspond to each category respectively. Parties with only one legislator in the Chamber have a cohesion value of one, even if the parties do not have perfect cohesion outside the Chamber, the effect cannot be captured by the data.

Resources in the Chamber are allocated according to the number of seats each party has. Moreover, inside of a party, resources are distributed unevenly. Legislators may face a trade-off between getting a small portion of a big party and getting a big portion of a small party. I control for this effect by introducing the variable *Party size*, the number of legislators registered to cast votes for each meeting, regardless of the size determined by electoral results. If a legislator has switched the party in the past, then the size of the party is reduced, while if a legislator has joined the party, the size increases.

As has been established by previous literature, party bosses have an important role in Argentina's politics (Jones et al., 2009). I control for their effects by including *District Incumbent* and *National*

Incumbent dummy variables that take value of one if the legislator belongs to the same party as the governor of their district or that of the president respectively. I pay special attention to the interaction effect between both variables.

Individual characteristics

As stated in Section 3, Argentina has a non negligible number of single-person parties (SPP). Even when politicians run for election under a party list, Argentina's law assigns seats to individuals instead of parties. The possibility of exiting a party and remaining independent in the Chamber is captured by *Independent*, a dummy variable that takes value one if the legislator appears in a single-person party in the next meeting and zero otherwise.

Legislators behave differently in each part of the legislative cycle (Rossi and Tommasi, 2012; Mershon and Shvetsova, 2008). I include the variable *Seniority*, number of years of each legislators' current term, to assess legislative party switching due to the different periods in their legislative cycle. Legislators are elected to stay in Chamber four years, hence, seniority ranges from one to four. If a legislator is a replacement, their first year is the year of their first appearance in the Chamber.

Since parties tend to group like-minded politicians, ideology plays an important role in party switching. Legislators that find themselves not represented by their party ideology may prefer to switch parties. Legislator's ideology can be estimated by their position in a political space, ideal points. Since what matters is the distance between a legislators and their party, *Ideological Distance* (ID) refers to the euclidean distance between legislator's ideal point, IP_{ik}, and the median party's ideal point, MIP_{jk}, for each congress. It is computed as:

$$ID_{ij} = \sqrt{\sum_{k=1}^{2} (\mathrm{MIP}_{jk} - \mathrm{IP}_{ik})^2} \tag{4}$$

where k is the dimension, j is the party and i is the legislator. Legislator's ideal points were obtained with the W-NOMINATE method for each congress. W-NOMINATE is a static spatial three step method to estimate legislators' ideology hidden values. Previous studies of Argentinian legislator's ideal points use Bayesian methods claiming that there were too few roll calls, but Carroll et al. state that there is no clear advantage of one method over the other when the number of votes is small.

W-NOMINATE relies on disagreement and having multiple observations for each legislator. Hence, legislators with less than 10 votes and roll calls with less than 2.5% of votes in the minority were dropped to avoid perfect agreement. The method is sensitive to the far right deputy in every dimension. For each congress and after checking with different deputies and getting the same relative results, I was inclined to set as reference a deputy that is always at one end of the political space, and rotate the plot to get the proper meaning. For more information on how the method works see Poole and Rosenthal (1997) and Poole, Lewis, Lo and Carroll (2011). Ideal points are not comparable between congresses, however, ID values are. Figure 9, in the Appendix, shows that for some congresses, only one of the dimensions is relevant while for others both dimensions are. Therefore, I calculate distances with two dimensions.

Legislator's loyalty to their party is a sign of how comfortable and represented the legislator feels. Distressed legislators may switch parties seeking to improve their position. In this work, *Loyalty* is captured by two measures. For each roll call, the fist one assigns a value of one if the legislator matches their vote with the party leader's vote and zero otherwise, while the second one takes value one if the legislator follows the majority of their party and zero otherwise.

Besides, as Argentina is a federal country, national tax funds are distributed to district governors as a result of a constant bargaining, despite of the existence of a law. Regardless of the political sign,

the bargaining power of each district is reflected on its *District size*, the number of legislators that each district has assigned.

I collapse *loyal* measures, *party power* and *party cohesion* to average meeting values. As robustness checks, I also compute the worst value per meeting by shifting the weight to the worst behavior in the meeting. While mean values just reflect an average of how loyal a legislator was in that meeting, worst refers to the minimum levels. If a legislator was loyal in all his votes during the same meeting his *worst loyalty* will be equal to one.

In December of 2005, Eduardo Lorenzo Borocotó became famous for abandoning his party right after winning the seat. Borocotó was publicly shamed by the media and accused of committing treason to his party, increasing party switching costs for all legislators. I study this cost increase with *Borocotó's Effect*, a dummy variable that takes value one after December 14, 2005 when Borocotó's case turned relevant in the press. Furthermore, in December 2009, a new electoral law was sanctioned in Argentina. The new law provides an easier and more transparent way for parties to assign the candidacies in the electoral process. To study the effect of the change of the electoral law over party switching, *PASO Law* is a dummy variable that takes value one after December 2, 2009 when the new electoral law was sanctioned. Summary statistics and correlations are presented in Tables 11 and 12 in the Appendix.

5 Results

5.1 Determinants of party switching

Table 6 presents pooled logit marginal effects estimates on the relationship between individual and group characteristics and the probability of switching parties. Table 6 (Column 1) reports marginal effects of peer effects given the controls, over the decision of a legislator to switch their party. Results are statistically significant and robust to different specifications. The significance of the coefficient is in agreement with theoretical models presented in the literature. The positive coefficient indicates that the probability of a legislator switching parties increases when any other legislator also switches parties. This includes group movements as well as turmoil in the Chamber. Table 17 in the Appendix accounts for lagged peer effects by including monthly and weekly switches into the peer effect variable. Coefficients remain statistically significant and signs remain unchanged.

Table 6 (Column 2) includes Party Power, as a proxy for pivotal power of the party in the Chamber at each meeting. The significance of the coefficient supports the idea that legislators care about party's power when they decide to switch parties, as stated by Laver and Benoit (2003). Perhaps counter-intuitively, belonging to a more powerful party increases legislator's probability to switch. In a powerful party, legislator's ambition place an important role and the leadership of the party is permanently contested. Power struggles between factions of the dominant party have proven to lead to multiple legislators' switches. In addition, the average legislator finds it is difficult being heard and standing out in a powerful party where all the leadership positions are already occupied. Table 6 (Column 3) includes Independent to test for the importance of legislators owning their seat. The coefficient is both positive and significant. As expected, the possibility of staying in the Chamber as independent increases the probability of legislators to switch parties. However, it is not feasible to distinguish between legislators who seek their own space and those who are not accepted by other parties.

Table 6 (Column 4) incorporates loyalty, ideological distance, party cohesion and seniority. Loyalty and party cohesion have both negative and significant coefficients suggesting a negative correlation

between loyalty as well as party cohesion and the probability of switching parties. Legislators that are loyal and feel represented by their party are less likely to abandon it. Similarly, parties with high levels of cohesion are less likely to lose legislators. There are two possible explanations behind this result. According to Heller and Mershon (2008) cohesion measures are equivalent to discipline measures, where parties with high levels of cohesion exert more discipline over their members. The authors find that legislators are more likely to become switchers in parties with high discipline. However, party cohesion reflects not only the discipline that a party exerts but also how well legislators and party interests are aligned. It is entirely possible that a party has high level of cohesion because all legislators are like-minded. In addition, the variable party cohesion includes absenteeism as a way to avoid openly contesting the party leader, which is not accounted in Heller and Mershon (2008) cohesion measure. A similar effect is captured by Ideological Distance which has a positive and significant coefficient. Legislators with ideal points further away from their median party ideal point are more likely to switch parties. Results agree with predictions from previous empirical literature. Furthermore, seniority accounts for the legislative cycle. The result agrees with Rossi and Tommasi (2012), that shows seniority increases the probability of a legislator being reelected. The significant and negative coefficient suggest that legislators with more years in the Chamber during the term are less likely to switch parties than legislators that have joined the Chamber recently. Switching parties at the beginning of the term provides legislators with enough time to form a reputation in the new party and run for reelection. Finally, due to how resources are distributed in Argentina, being a member of the national incumbent party offers more benefits to legislators making them less likely to switch, which is reflected by the significant and negative coefficient after controlling for power distribution at each meeting.

The last two columns, Table 6 (Columns 5 and 6), show that the specification is robust when accounting for individual fixed effects and the time trend. In these two models, only legislators that have switched parties are considered. The model of Table 6 (Column 5) is equivalent to Table 6 (Column 3), and the model of Table 6 (Column 6) is equivalent to Table 6 (Column 4). Only seniority does not remain significative after controlling for individual fixed effects and adding a time trend.

The Appendix presents robustness checks under a linear probability model with fixed effects and using a logit model with fixed effects and worst meeting values for loyalty, cohesion and power in Tables 13 and 14. In addition, Table 16 address the possibility of a party dissolution in the same week and month of the switch. All coefficients remain significative and signs match.

Given that communication inside a party is more fluid than communication between legislators of different parties, I expect to find two types of peer effects. *Same Party Peer effects* captures the case of party splitting in which legislators from the same party switch at the same meeting. *Different Party Peer effects* considers party switches from legislators in different parties in the same meeting. Table 7 extends the analysis of Peer Effects by breaking it up into Same Party and Different Party behavior and controlling for all variables of Table 6 (Column 4 and 6). Coefficients from both effects are positive and significant. Same party peer effects suggest that legislators switch parties in groups, while different party peer effects indicates that legislators take advantage of the turmoil in the Chamber to reduce their individual costs of switching. From the comparison of marginal effects, same party peer effects has more impact in a legislator decision to switch parties than the behavior of legislators from different parties.

It is also possible that legislators avoid paying the reputation cost of party switching because they have a common surnames and it is harder for voters to identify them. In order to test this hypothesis, I obtained common Argentinian last names from two different sources. Forebears[8], a website that tracks genealogical data, reports the two hundred most common last names as 2014, while Dipierri et al. (2005) reports the one hundred most common last names from 2001 Argentina census data. I constructed *Common Last Names (200)*, a dummy variable that takes value of 1 if the

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[8]http://forebears.io/argentina#surnames

Table 6: Determinants of Party switching. Marginal effects of logit model.

	(1)	(2)	(3)	(4)	(5)	(6)
Peer Effects	0.000905***	0.000927***	0.000941***	0.000841***	0.00304***	0.00283***
	(0.0000665)	(0.0000688)	(0.0000695)	(0.0000660)	(0.000142)	(0.000147)
Party Power		0.0373***	0.0379***	0.0380***	0.0778***	0.0736***
		(0.00515)	(0.00526)	(0.00537)	(0.0207)	(0.0213)
Independent			0.0103***	0.0135***	0.0391***	0.0490***
			(0.00121)	(0.00137)	(0.00698)	(0.00722)
Loyalty				-0.00416***		-0.0143***
				(0.000994)		(0.00353)
Party Cohesion				-0.00983**		-0.0261*
				(0.00330)		(0.0112)
Ideological Distance				0.0152***		0.0411***
				(0.00108)		(0.00386)
Seniority				-0.000561*		-0.00189
				(0.000263)		(0.00116)
National Incumbent	-0.000608	-0.0166***	-0.0181***	-0.0149***	-0.0685***	-0.0535***
	(0.00211)	(0.00349)	(0.00352)	(0.00327)	(0.0165)	(0.0149)
Power Distribution	No	Yes	Yes	Yes	Yes	Yes
Legislator FE & Time Trend	No	No	No	No	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	60,148	59,858	59,858	58,673	17,505	16,919
Legislators	1,037	1,037	1,037	1,006	245	238

Standard errors are clustered by legislator and appear in parentheses. The models estimated are $Switch_{it} = \mathbb{1}(\beta X_{ijt} + \alpha_i + \epsilon_{it} > 0)$ where $Switch_{it}$ is the decision of legislator i in meeting t of switching parties, X_{ijt} refers to the characteristics of legislator i in party j, and ϵ is the error term with standard logistic distribution. Controls included are District size, District Incumbent, Interaction term of National and District Incumbent, Party size and Congress Dummies.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

legislator's last name appears in Forebears list, and *Common Last Names (100)* as a dummy variable that takes value of 1 if the legislator's last name appears in Dipierri et al. (2005) list.

Table 8 extends the regressions presented in Table 6 columns 4 and 6, accounting for common last names. Signs and significance of coefficients of the previous variables remain unchanged and are omitted from the table. The results indicate that while considering a broader amount of common last names, having a common last name increases the probability to switch parties, both in the pooled

Table 7: Decomposition of Peer Effects on Party switching. Marginal effects of logit model.

	(1)	(2)
Same Party Peer Effects	0.00160***	0.00581***
	(0.000131)	(0.000488)
Different Party Peer Effects	0.000618***	0.00183***
	(0.0000616)	(0.000142)
Legislator FE & Time Trend	No	Yes
Other Controls	Yes	Yes
Observations	58,673	16,919
Legislators	1,006	238

Standard errors are clustered by legislator and appear in parentheses. The models estimated are $Switch_{it} = \mathbb{1}(\beta X_{ijt} + \alpha_i + \epsilon_{it} > 0)$ where $Switch_{it}$ is the decision of legislator i in meeting t of switching parties, X_{ijt} refers to the characteristics of legislator i in party j, and ϵ is the error term with standard logistic distribution. Controls included are District size, District Incumbent, National Incumbent, Interaction term of National and District Incumbent, Party size, Party Power, Loyalty, Independent, Ideological Distance, Party Cohesion, Seniority, Power Distribution and Congress Dummies.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

logit model (Column 1) as well as in the logit model with fixed effect (Column 3). However, with a narrower definition of common last names, having a common last name is not statistically significant in the pooled logit model (Column 2), or significant only to a 5% level in the logit model with fixed effects (Column 4). Therefore, I found weak evidence that supports the aforementioned hypothesis.

Table 9 explores the changes of switching costs legislators from Argentina experienced in the last 15 years, controlling for all variables introduced in Table 6 (Column 6). Borocotó's effect refers to the increase in costs of party switching due to the negative publicity that the case received in the press. We can see that it has a non-significative coefficient while controlling for the previous variables. PASO Law reflects the change in the electoral law that allowed politicians to challenge party leaders for a spot in the candidates list without having to abandon their party. The law effectively reduced party switching as a byproduct of increasing open competition. The coefficient is negative and statistically significative.

Table 8: Effect of Common Last Names on Party switching. Marginal effects of logit model.

	(1)	(2)	(3)	(4)
Common Last Names (200)	0.00221**		0.0281***	
	(0.000827)		(0.00842)	
Common Last Names (100)		0.00129		0.0469*
		(0.000992)		(0.0236)
Legislator FE & Time Trend	No	No	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes
Observations	58,673	58,673	16,919	16,919
Legislators	1,006	1,006	238	238

Standard errors are clustered by legislator and appear in parentheses. The models estimated are $Switch_{it} = \mathbb{1}(\beta X_{ijt} + \alpha_i + \epsilon_{it} > 0)$ where $Switch_{it}$ is the decision of legislator i in meeting t of switching parties, X_{ijt} refers to the characteristics of legislator i in party j, and ϵ is the error term with standard logistic distribution. Controls included are District size, District Incumbent, National Incumbent, Interaction term of National and District Incumbent, Party size, Party Power, Loyalty, Independent, Ideological Distance, Party Cohesion, Seniority, Power Distribution and Congress Dummies.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9: Before and After over Party switching. Marginal effects of logit model.

	(1)	(2)	(3)
Borocotó's Effect	0.00696		0.00254
	(0.00595)		(0.00638)
PASO Law		-0.0171**	-0.0162*
		(0.00613)	(0.00671)
Controls	Yes	Yes	Yes
Observations	16,919	16,919	16,919

Standard errors are clustered by legislator and appear in parentheses. The models estimated are $Switch_{it} = \mathbb{1}(\beta X_{ijt} + \alpha_i + \epsilon_{it} > 0)$ where $Switch_{it}$ is the decision of legislator i in meeting t of switching parties, X_{ijt} refers to the characteristics of legislator i in party j, and ϵ is the error term with standard logistic distribution. Controls included are District size, District Incumbent, National Incumbent, Interaction term of National and District Incumbent, Party size, Party Power, Loyalty, Independent, Ideological Distance, Party Cohesion, Seniority, Power Distribution, Legislators' FE, Time Trend and Congress Dummies.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.2 Motivation for party switching: Office vs Ideology

Strøm and Müller (1999) define policy-seeking and office-seeking motivations in terms of parties. In the former, parties are focused on their ideology and work toward their political goals. In the later, a party's goal is to get in control and remain in office. Their actions may respond to underlying motives such as gaining power in the future. This distinction can be used to characterize politicians and, in particular, legislators.

To understand if legislators are office seekers, it is paramount to identify which legislators were candidates in a following election, focusing on how much they improve their position in the next ballot. By concentrating in the positions in the ballots, I evaded the effect of electoral results on legislators' motivations, and I only contemplated this effect for those legislators looking for reelection.

I matched the information from roll call data with the details from ballot records provided by the National Electoral Chamber. I focused on legislators that after their term were candidates for the Presidency, Vice Presidency, Senate or the House of Representatives. In addition, I surveyed provincial legislative and governmental elections looking for party switchers not present in the above elections.[9] Therefore, it is entirely possible that some non-switchers that were candidates to other political positions are absent from the analysis. Nevertheless, given that there is no information regarding the decision of a politician to be a candidate or abandon politics, I considered that those non-switchers that didn't match the ballot records had not improved their previous position.

From the 1,286 distinct combinations of deputy and year of election (considering legislators as different if they were reelected) present in the roll call data, I found one third (32.97%) as candidates in a corresponding following election. The match resulted in 38.6% of the party switchers and 28.0% of the non-switchers being candidates in election ballots following their term .
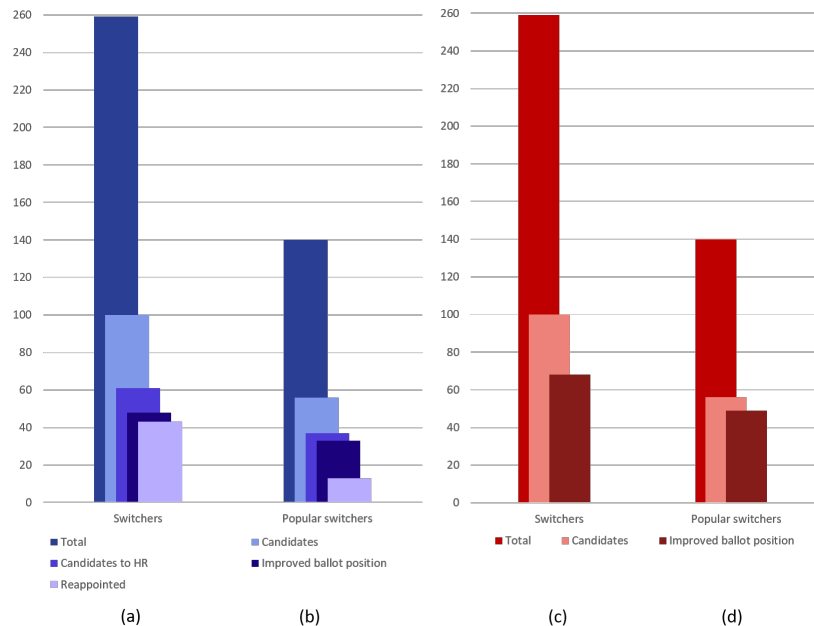

Figure 5: Switchers and popular switchers in next elections

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[9]For example, I searched for a legislator that was elected in 2005 in all legislative and presidential elections from 2007 onward.

Restricting the analysis to party switchers, Figure 5 (a) shows that from those switchers that were candidates, 61% applied to be reelected to the House of Representatives. Considering only switchers that applied for reelection, 78.7% improved their position in the closed ranked list and 70.5% were reappointed. However, we may expect that popular legislators behave differently than the average legislator, given that they know they attract more votes for their parties and their switch could damage the party. Defining a popular legislator as one that was in the first two positions of their previous party list, I present the same analysis in Figure 5 (b).

From the popular party switchers, 40% appear as candidates in a subsequent election. From these candidates, 66% applied to be reelected to the House of Representatives. Up to this point, everything seems similar to the average switcher, nevertheless, their rates of ballot position improvement and reappointment differ considerably. From popular switchers that applied for reelection, 89.2% improved their position in the closed ranked list, compared to the 78.7%, suggesting that they are valued higher than the other legislators. On the other hand, only 35.1% of the popular switchers that applied for reelection were reappointed, which might suggest that they win less. However, I defined legislators as reappointed if they take their seat in the House of Representatives. A plausible explanation for their low rate of reappointment is given by what is known as *testimonial candidacies*, characterized by politicians that are registered as candidates but have no intention to take their seats.[10] Testimonial candidates attract votes and win elections for their parties, but they resign their seat before being appointed, looking for a better political position.

Regarding non-switchers that appeared as candidates to the House of Representatives, 67.0% of average non switchers and 92.0% of popular non switchers improved their ballot position. Since all candidates to the House of Representatives are accounted for, without uncertainty I can conclude that for the average legislator that is appointed as candidate, switching parties provides a better probability of improving their position in the ballot ranking (67.0% vs 78.7%). However, the previous conclusion does not remain true for popular legislators (92.0% vs 89.2%). Reappointment rates for average non switcher and popular non switcher are 59.1% and 64.4% respectively, which displays the same pattern as ballot ranking improvement.

Candidacies for the Presidency, Senate and Governorship are understood as an improvement over Deputy positions. Including them in the analysis, Figure 5 (c) and (d) show that 68% of the switchers improved their position, while 87.5% of the popular switchers improved their position. The difference in favor of popular party switchers supports the idea that parties could be offering better positions to popular legislators to attract them. In the case of non-switchers, only 28% of them were found in the ballot records as candidates. As upper-bounds, 72.1% of non switchers recorded as candidates improved their position in the closed ranked list, while 90% of popular non switchers recorded as candidates improved their position in the closed ranked lists. Comparing these rates with those from party switchers (68% and 87.5%), I cannot conclude there is a significant difference between switchers and non switchers in regards to their improvement in the ballot position. Without limiting the analysis to candidates and including all legislators, 26.3% of switchers and 20.2% of non switchers, whereas 32.0% and 23.0% of popular switchers and non switchers, improved their position in the closed ranked lists, suggesting that office seeking legislators have incentives to switch parties.

To understand if legislators are ideology seekers, we would like to know if they and their parties had changed ideology after the switch. In this line of research, Nokken (2005) compare legislators' ideal points computed with DW-Nominate before and after the switch for every legislator that switched parties in the history of United States (only 26 in 50 years). Both W-Nominate and DW-Nominate require a significant number of roll calls to compute a legislator ideal point, but only DW-Nominate allows comparisons of a legislator's ideal points between different congresses. In Argentina's data, only a few switches have a significant number of roll calls before and after the switch, focusing on those

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[10]For more on testimonial candidacies see Lupu (2010)

cases will lead to results that might not representative.

Another possible approach would be to compare the ideological distance between the party and the switcher in the congress before the switch with that one from the switcher and the previous party after the switch. This procedure can only work if the switches took place at the end of the switcher's first congress or at the beginning of the switcher's second congress. Again, there is a few number of switches that fulfill the restriction.

To avoid the limitations of W-Nominate method, I present an alternative approach using loyalty values as a way to measure legislators' behavioral changes. Based in previous results from the regressions, loyalty deteriorates before the switch. By computing the loyalty of a switcher to their previous party leader, it is possible to assess if the voting behavior of a legislator and the previous party has drifted which I use as a proxy of ideological drifts. Figure 6 (a) presents the average loyalty to the previous party leader considering switches with at least five meetings, and 60 days, before and after a switch, accounting for 141 switches. Loyalty to previous party leader reaches a minimum the first day switchers are recorded in their new party, and does not return to pre-switch levels.

Given that the average loyalty starts decreasing three meetings before the switch, I considered switches with three meetings, and 45 days, before and after a switch in Figure 6 (b), increasing the number of cases to 184 switches. For non-switchers, the behavioral change was measured in terms of their loyalty to the party leader when a legislator from the same party (SP) switches. Figure 6 (c) and (d) show that non-switchers remain loyal and the loyalty levels are high for both scenarios.

Finally, to compare the effect of both the improvement in the ballot position and the change in loyalty over the decision to switch, I collapsed the data to one observation by term. The dependent variable is a dummy variable that values 1 if the legislator switch parties during their term. As independent variables, Improve Ballot is a dummy variable equals to 1 if the legislator improves their ballot position in a following election, and Change Loyalty is a dummy variable that takes value 1 if the legislator changes their behavior in at least one switch in the term. Based on the loyalty plots, I considered that legislators that had a difference of 0.15 in their loyalty to the party leader, and previous party leader, have Change Loyalty equal to 1. Table 10 presents the coefficient of the pooled logit regression. Both variables have positive and significant coefficients. However, I cannot conclude that the coefficients are different given that the p-value of the t-test is 0.26, failing to reject the null hypothesis.
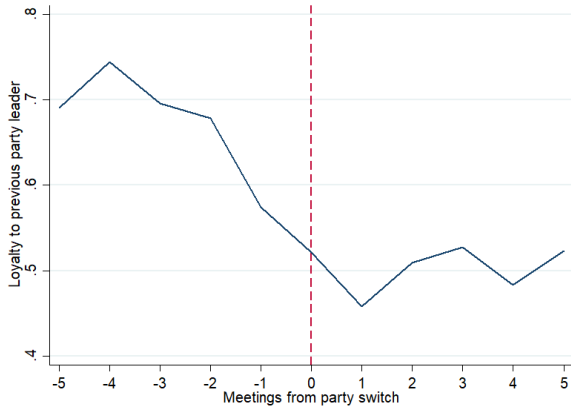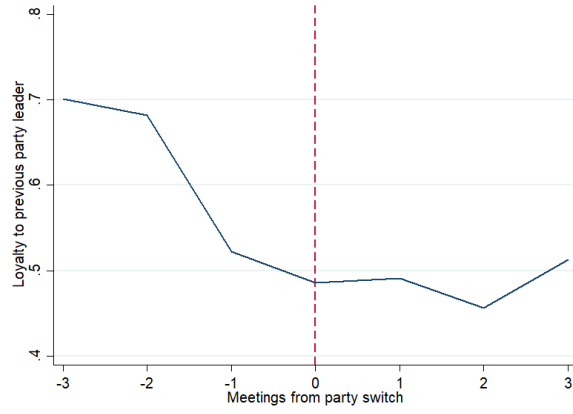
(a)   (b)
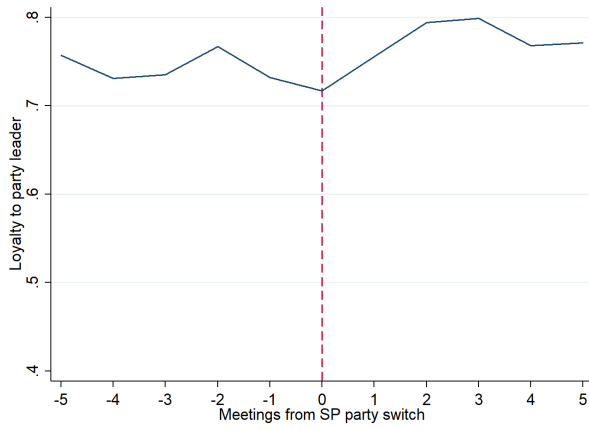
(c)   (d)

Figure 6: Loyalty as behavioral change

6   Conclusion

Modern democracies function through representative systems, in which voters choose politicians to make decisions for them. Political parties are the nexus between politicians and voters: not only they are tags that reduce information costs for voters but they also make it easier to hold politicians accountable. Moreover, politicians use parties to pursue their career goals and ambitions. Group dynamics and party switching are key to 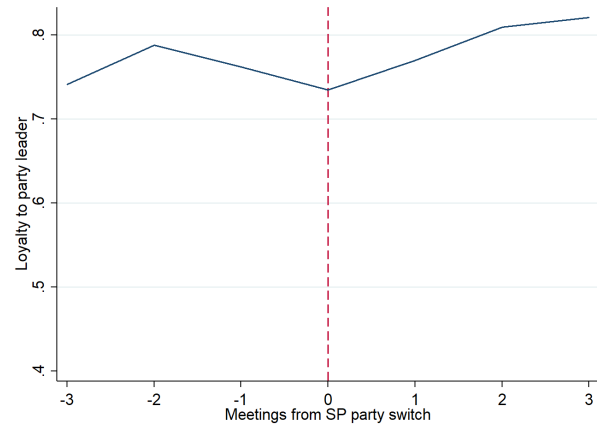understand how party competition works. While party switching may provide new avenues for legislators' careers, it also threatens the stability of the democratic electoral system by obfuscating the electorate. Exploring the drives behind a legislator decision to switch parties grants us with tools to design mechanisms that restore the representativeness of the political system.

This work analyzes individual and group characteristics that determine party switching. I collect Argentina's roll calls from the House of Representatives for the period March 2002-June 2017 to construct individual variables, such as loyalty to the party, remaining independent and ideological distance, using the voting records. To assess group dynamics, I set up variables such as Peer effects and Party power. The importance of each variable is estimated using a pooled logit model, including legislators' fixed effects. In addition, a before and after model estimates the relevance of changes in electoral policy and increasing party switching costs. I find that party switching is an interdependent decision, that hinges on same party peers more than on the rest of the peers. Moreover, the distribution of power in the Chamber plays an important role on a legislator decision to switch, as does ideological distance, loyalty to the party leader and the legislative cycle. Finally, the results suggest that the change in the electoral law was effective to reduce party switching, whereas an increase in party switching costs due to deteriorated reputation was not. Hence, banning party switching, partially or fully, may not be as effective as changing the electoral law to allow politicians to run as individual candidates instead of candidates in a ranked closed list of their parties.

From the characterization of party switchers in terms of the possible motives behind the switch, I find that party switchers have a higher probability of improving their ballot position compared to non switchers, suggesting that office seeking legislators have higher incentives to switch. Moreover, party switchers change their voting behavior in the period close to their switching meeting, whereas non-switchers' behavior was not affected by same party switches. Both office seeking and ideology seeking motivations affect the decision of a legislator to switch in their term.

In future work I will model the interactions of legislators with their current and prospective party. Legislators' affiliation decisions are confined only to those parties that will accept them. A better assessment of the forces behind party dynamics will provide the necessary tools for policy design.

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7 Appendix

7.1 Tables and Figures

Table 10: Motivation behind party switching. Marginal effects of logit model.

	(1)
Improve Ballot	0.0581*
	(0.0263)
Change Loyalty	0.0970***
	(0.0232)
Observations	899

Standard errors are clustered by legislator and appear in parentheses. The model estimated is $Switch_{it} = \mathbb{1}(\beta X_{ijt} + \alpha_i + \epsilon_{it} > 0)$ where $Switch_{it}$ is the decision of legislator i in term t of switching parties, X_{ijt} refers to the characteristics of legislator i in party j, and ϵ is the error term with standard logistic distribution.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 7: Party switching: Dynamics of the House of Representatives 2002-2009.
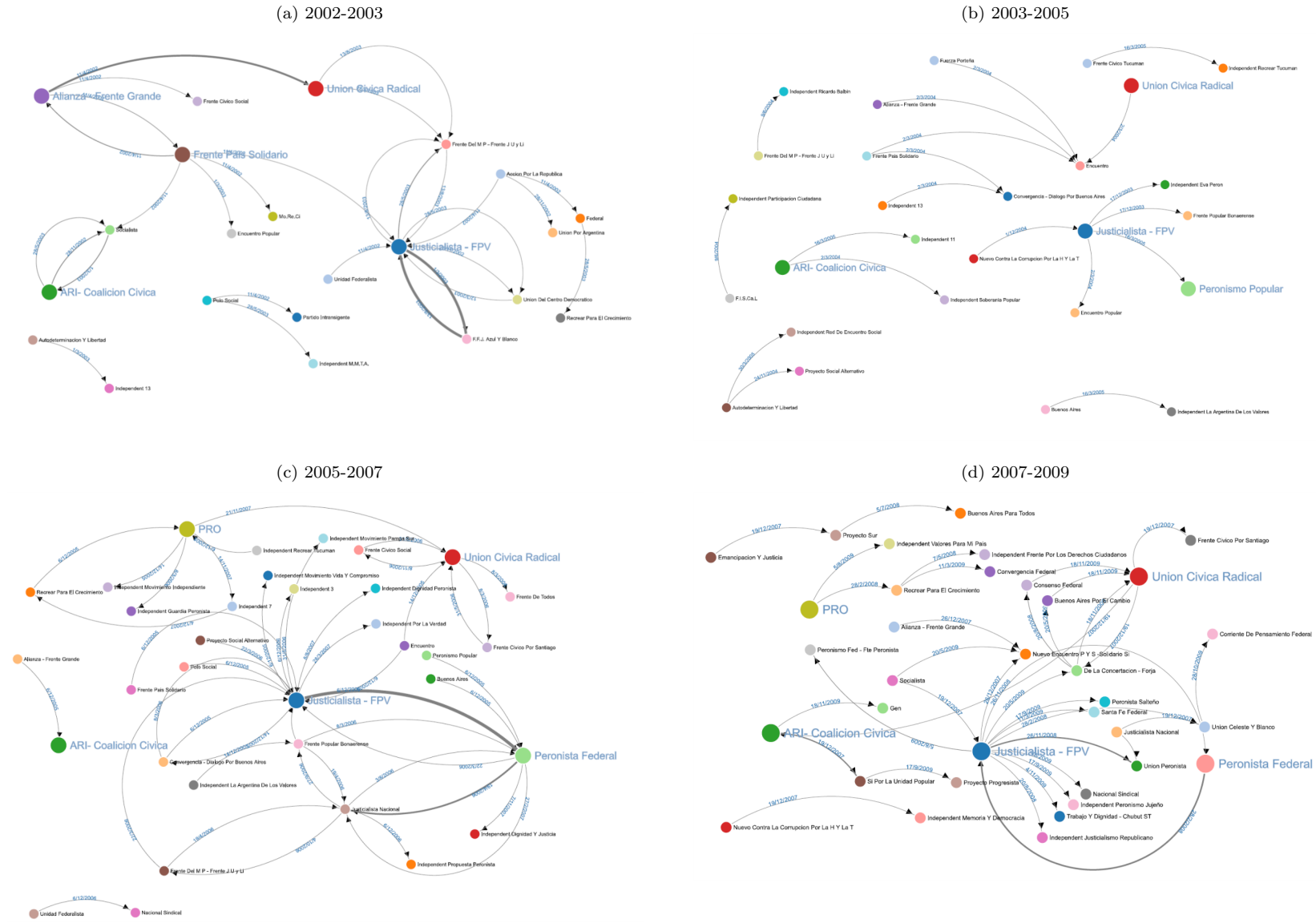
(a) 2002-2003

(b) 2003-2005

(c) 2005-2007

(d) 2007-2009

Switching dates in the arrows, arrow's width proportional to the number of party switchers. Construction based on information provided by roll calls of Argentina's House of Representatives March 2002-December 2009.

Figure 8: Party switching: Dynamics of the House of Representatives 2009-2017.
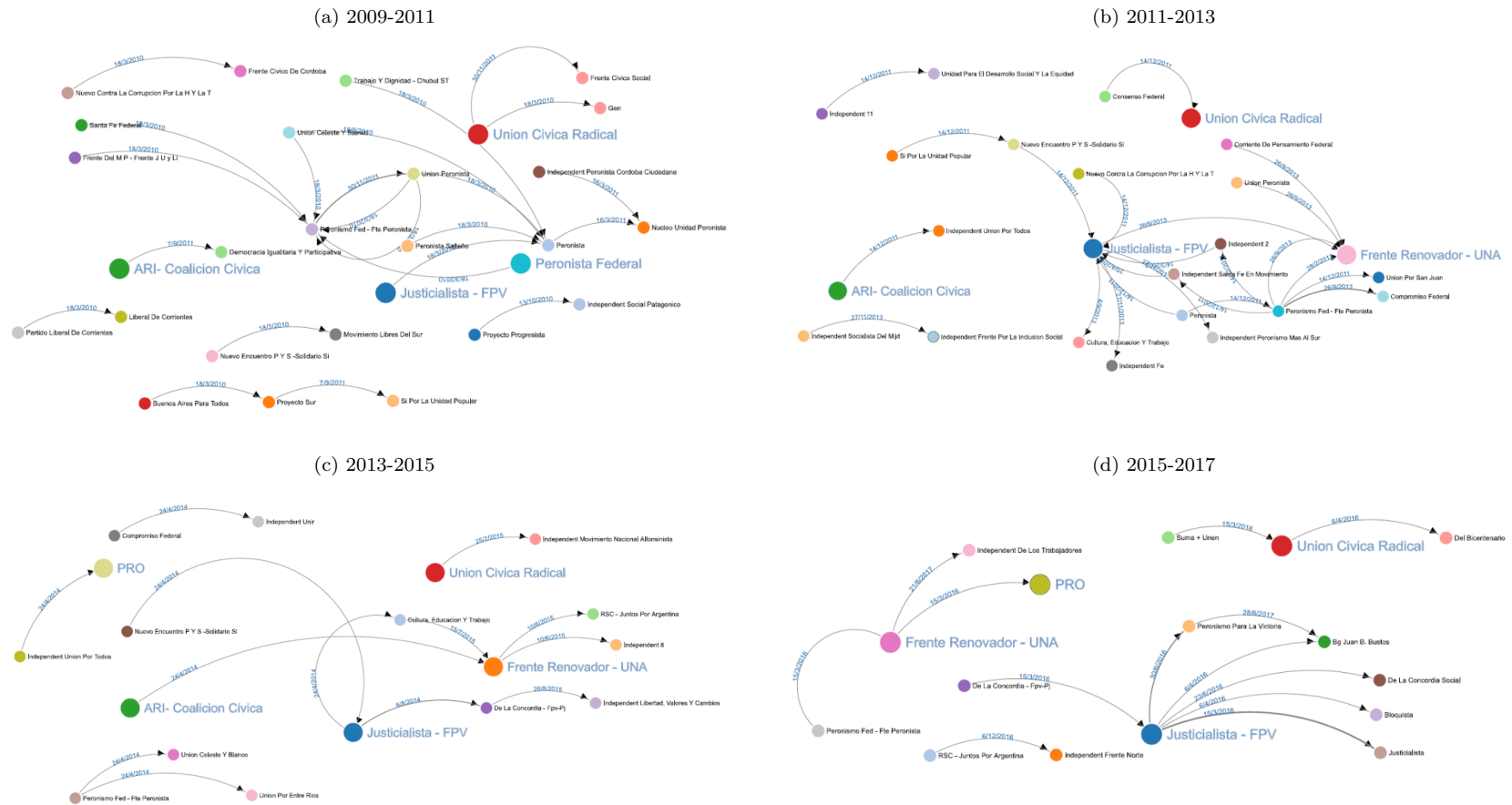
(a) 2009-2011

(b) 2011-2013

(c) 2013-2015

(d) 2015-2017

Switching dates in the arrows, arrow's width proportional to the number of party switchers. Construction based on information provided by roll calls of Argentina's House of Representatives December 2009-June 2017.

Table 11: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
		Legislator Variables			
Independent	1,037	0.02	0.10	0.00	1.00
Seniority	1,037	3.38	0.97	1.00	4.00
Loyalty	1,037	0.77	0.17	0.00	1.00
Worst Loyalty	1,037	0.59	0.21	0.00	1.00
Loyalty to Majority	1,037	0.83	0.16	0.00	1.00
Worst Loyalty to Majority	1,037	0.67	0.20	0.00	1.00
Ideological Distance	1,006	0.19	0.19	0.00	1.19
		Party Variables			
Cohesion	148	0.94	0.09	0.71	1.00
Worst Cohesion	148	0.90	0.13	0.59	1.00
District Incumbent	148	0.11	0.27	0.00	1.00
National Incumbent	148	0.01	0.08	0.00	0.94
Party Power	148	0.01	0.06	0.00	0.73
Party Size	148	3.68	10.00	1.00	108.10
		District Variables			
District Size	24	10.71	13.65	5.00	70.00
		Meeting Variables			
Power Distribution	253	0.64	0.25	0.09	1.00
Peer Effects	254	1.54	4.51	0.00	35.86
Same Party Peer Effects	254	0.26	1.08	0.00	11.62
Different Party Peer Effects	254	1.28	3.74	0.00	30.92

Table 12: Correlation between relevant variables.

Correlation	Peer Effects	Ideological Distance	Party Cohesion	Loyalty	Party Power	Seniority	District Incumbent	National Incumbent
Peer Effects	1.000							
Ideological Distance	0.063	1.000						
Party Cohesion	-0.143	-0.163	1.000					
Loyalty	-0.093	-0.156	0.519	1.000				
Party Power	0.003	0.296	0.083	0.061	1.000			
Seniority	0.068	-0.005	-0.045	-0.031	-0.051	1.000		
District Incumbent	0.004	0.177	0.043	0.021	0.534	-0.050	1.000	
National incumbent	0.009	0.307	0.101	0.059	0.930	-0.051	0.551	1.000

Figure 9: Argentina's Political Space. Cutting lines from W-NOMINATE.
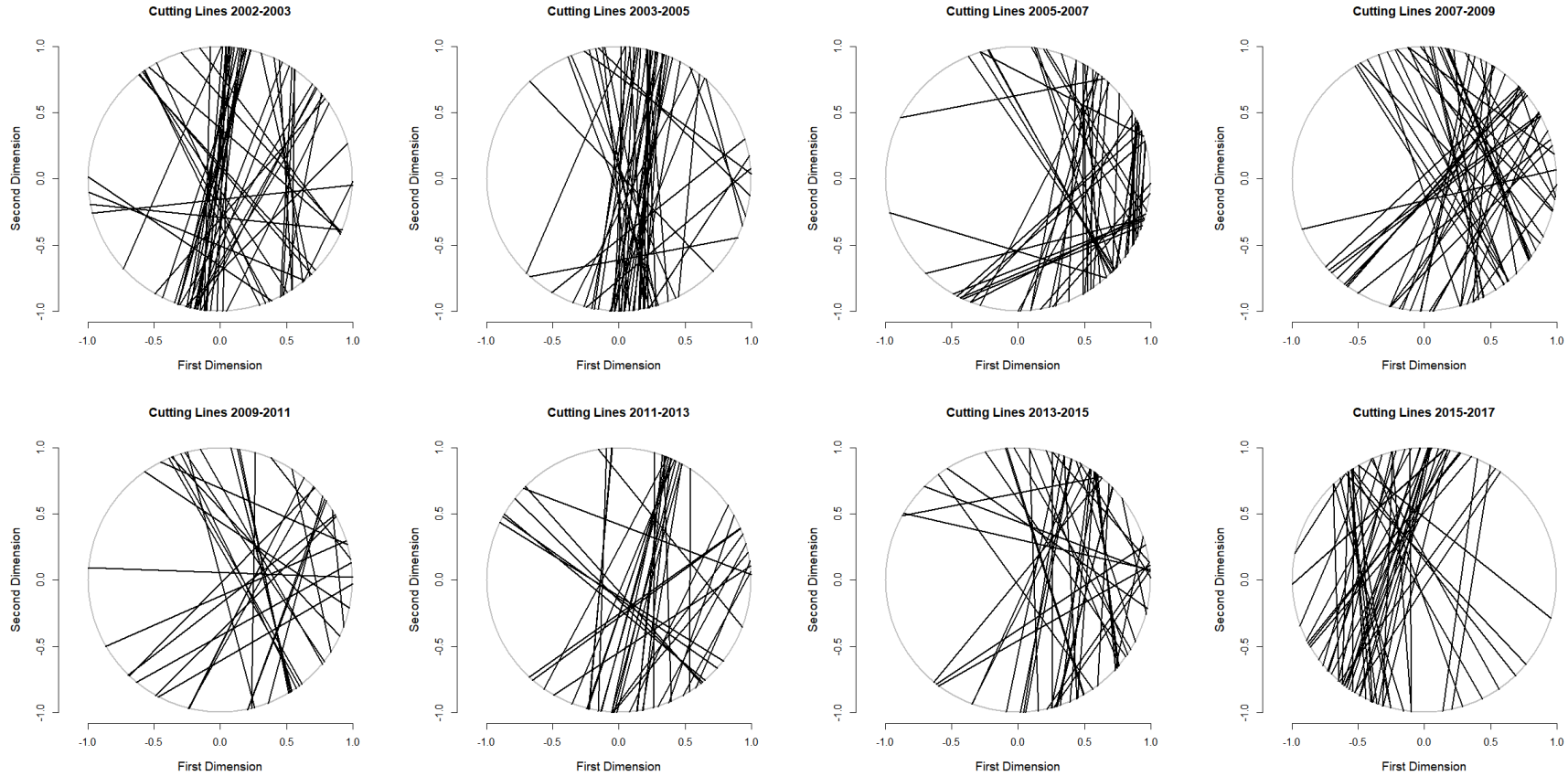
Cutting lines divide legislators votes at each roll call inside the two dimensional political space of Argentina. Estimations performed with W-NOMINATE using Argentina's roll calls. Legislators with less than 10 votes and roll calls with less than 2.5% of votes in the minority were drop to avoid perfect agreement. For more information on how the method works see Poole and Rosenthal (1997) and Poole, Lewis, Lo and Carroll (2011).

Table 13: Determinants of party switching. Linear probability model.

	(1)	(2)
Peer effects	0.00374***	0.00374***
	(0.000286)	(0.000286)
Party Power	0.0267***	0.0305***
	(0.00545)	(0.00602)
Independent	0.0471***	0.0471***
	(0.00669)	(0.00670)
Loyalty	-0.00531***	-0.00530***
	(0.00152)	(0.00152)
Ideological Distance	0.0476***	0.0478***
	(0.00477)	(0.00477)
Party Cohesion	-0.0200***	-0.0198***
	(0.00432)	(0.00431)
National Incumbent	-0.0211***	-0.0217***
	(0.00507)	(0.00509)
Seniority	-0.00138***	-0.00144***
	(0.000375)	(0.000376)
Constant	0.0322***	0.0355***
	(0.00943)	(0.00988)
Power distribution	No	Yes
Controls	Yes	Yes
Observations	58,674	58,673

Standard errors are clustered by legislator and appear in parentheses. The models estimated are $\text{Switch}_{it} = \beta X_{ijt} + \alpha_i + \epsilon_{it}$ where Switch_{it} is the decision of legislator i in meeting t of switching parties, X_{ijt} refers to the characteristics of legislator i in party j, and ϵ is the error term. Controls included are District size, District Incumbent, Interaction term of National and District Incumbent, Party size, Congress Dummies and Legislators' Fixed Effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 14: Determinants of party switching. Marginal effects of logit model. Robustness checks.

	(1)	(2)	(3)	(4)	(5)	(6)
Peer Effects	0.000830***	0.000856***	0.000843***	0.00290***	0.00298***	0.00301***
	(0.0000665)	(0.0000665)	(0.0000664)	(0.000169)	(0.000172)	(0.000180)
Party Power	0.0387***			0.0800***		
	(0.00543)			(0.0212)		
Worst Party Power		0.0218***	0.0219***		0.0332	0.0362*
		(0.00472)	(0.00480)		(0.0177)	(0.0182)
Independent	0.0131***	0.0137***	0.0132***	0.0519***	0.0523***	0.0513***
	(0.00134)	(0.00137)	(0.00133)	(0.00826)	(0.00747)	(0.00804)
Loyalty to Majority	-0.00545***			-0.0181***		
	(0.000966)			(0.00341)		
Worst Loyalty		-0.00345***			-0.00948**	
		(0.000837)			(0.00302)	
Worst Loyalty to Majority			-0.00378***			-0.0116***
			(0.000744)			(0.00280)
Cohesion	-0.00962**			-0.0143		
	(0.00345)			(0.0124)		
Worst Cohesion		-0.00274	-0.00232		-0.00116	0.00408
		(0.00236)	(0.00227)		(0.00928)	(0.00935)
Ideological Distance	0.0144***	0.0159***	0.0152***	0.0477***	0.0517***	0.0497***
	(0.00107)	(0.00108)	(0.00107)	(0.00570)	(0.00546)	(0.00560)
Seniority	-0.000574*	-0.000512	-0.000543*	-0.00355**	-0.00371**	-0.00373**
	(0.000266)	(0.000271)	(0.000275)	(0.00136)	(0.00133)	(0.00138)
National Incumbent	-0.0140***	-0.0101***	-0.00975***	-0.0863***	-0.0740***	-0.0759***
	(0.00326)	(0.00284)	(0.00282)	(0.0165)	(0.0160)	(0.0162)
Legislator FE and Time Trend	No	No	No	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	58,172	58,673	58,172	16,451	16,919	16,451

Standard errors are clustered by legislator and appear in parentheses. The models estimated are $Switch_{it} = \mathbb{1}(\beta X_{ijt} + \alpha_i + \epsilon_{it} > 0)$ where Switch$_{it}$ is the decision of legislator i in meeting t of switching parties, X_{ijt} refers to the characteristics of legislator i in party j, and ϵ is the error term with standard logistic distribution. Controls included are District size, District Incumbent, Interaction term of National and District Incumbent, Power Distribution, Party size and Congress Dummies.

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* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 15: Determinants of party switching. Marginal effects of logit model. Robustness checks: Lagged Peer Effects.

	(1)	(2)	(3)	(4)
Peer Effects (W)	0.000724***		0.00238***	
	(0.0000525)		(0.000110)	
Peer Effects (M)		0.000661***		0.00217***
		(0.0000479)		(0.000106)
Party Power	0.0371***	0.0379***	0.0709***	0.0804***
	(0.00516)	(0.00512)	(0.0196)	(0.0188)
Independent	0.0141***	0.0144***	0.0523***	0.0570***
	(0.00139)	(0.00137)	(0.00639)	(0.00637)
Loyalty	-0.00442***	-0.00430***	-0.0150***	-0.0143***
	(0.000995)	(0.000983)	(0.00344)	(0.00336)
Party Cohesion	-0.0128***	-0.0133***	-0.0485***	-0.0605***
	(0.00336)	(0.00341)	(0.0109)	(0.0113)
Ideological Distance	0.0151***	0.0152***	0.0425***	0.0428***
	(0.00109)	(0.00110)	(0.00365)	(0.00364)
Seniority	-0.000406	-0.000385	-0.000633	0.000136
	(0.000269)	(0.000272)	(0.00119)	(0.00123)
National Incumbent	-0.0139***	-0.0146***	-0.0504***	-0.0541***
	(0.00312)	(0.00313)	(0.0143)	(0.0149)
Congress Dummies	Yes	Yes	No	No
Observations	58,673	58,673	16,919	16,919

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 16: Determinants of Party switching: party dissolution. Marginal effects of logit model.

	(1) Switch-W	(2) Switch-M	(3) Switch-W	(4) Switch-M
Peer Effects	0.000725***	0.000728***	0.00250***	0.00250***
	(0.0000597)	(0.0000618)	(0.000136)	(0.000138)
Party Power	0.0244***	0.0233***	0.0300	0.0277
	(0.00457)	(0.00459)	(0.0181)	(0.0183)
Independent	0.0134***	0.0134***	0.0494***	0.0489***
	(0.00132)	(0.00133)	(0.00761)	(0.00761)
Loyalty	-0.00349***	-0.00348***	-0.0114***	-0.0117***
	(0.000912)	(0.000895)	(0.00340)	(0.00340)
Party Cohesion	-0.0110***	-0.0107***	-0.0342**	-0.0328**
	(0.00313)	(0.00320)	(0.0105)	(0.0109)
Ideological Distance	0.0144***	0.0143***	0.0444***	0.0445***
	(0.000997)	(0.000985)	(0.00389)	(0.00392)
Seniority	-0.000787**	-0.000813***	-0.00246*	-0.00265*
	(0.000244)	(0.000242)	(0.00118)	(0.00118)
National Incumbent	-0.0102***	-0.0102***	-0.0342**	-0.0351**
	(0.00297)	(0.00293)	(0.0132)	(0.0131)
Congress Dummies	Yes	Yes	No	No
Observations	58,673	58,673	16,481	16,332

Standard errors are clustered by legislator and appear in parentheses. Columns (1) and (2) show the pooled logit marginal effects comparable with those from (4) from Table 6 and columns (3) and (4) show the logit FE marginal effects comparable with those from column (6) from Table 6

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

7.2   W-NOMINATE

This notes are based on Poole and Rosenthal (1997) Static Nominal Three-step Estimation(W-NOMINATE) using W-NOMINATE R Package.

The method relies on disagreement to locate legislators in a political space, so before starting it is required to drop legislators with less than 10 votes and roll calls with less than 2.5% of votes in the minority to avoid perfect agreement.

First, for roll call $j = 1, ..., q$ and dimension $k = 1, ..., s$, the program sets the cutting line z_{mjk} that best classify each roll call by identifying its midpoint m, and the distance to the cutting line $d_{jk} = z_{mjk} - z_{jyk}$ and $d_{jk} = z_{jnk} - z_{mjk}$ where $z_{jy/n}$ is the number of yea and nay respectively.

Second, for a given dimension, for each legislator $i = 1, ..., p$ it estimates their ideal point x_{ik} as following:

Given two legislators, i and h, it constructs the agreement score

$$A_{ih} = 100 \times \frac{\# \text{ of roll calls where i and h vote the same}}{\# \text{ of roll calls where i and h both vote}}$$

Then, it re-scales to $[0, 2]$ by $d_{ih}^* = \frac{100 - A_{ih}}{50}$ and double centers the matrix of mean distances

$$Y = -\frac{1}{2}[D^* - rJ' - Jc' + JJ'm] = XX' + E$$

where r and c are row and column mean vectors, m is the matrix mean and J is a vector of ones. It also replaces missing values by m and obtain

$$\hat{Y} = XX' + E$$

It estimates coordinates by minimizing standard squared error loss function $\mu = \sum_{i=1}^{p} \sum_{h=1}^{p} [d_{ih}^* - \hat{d}_{ih}]^2$ where $\hat{d}_{ih} = [\sum_{k=1}^{s} (\hat{x}_{ik} - \hat{x}_{gk})^2]^{1/2}$ and assumes legislator's coordinates are

$$x_{it} = x_{i0} + x_{i1}\Psi_{t1} + x_{i2}\Psi_{t2} + x_{i3}\Psi_{t3} + ... + x_{iv}\Psi_{tv}$$

where Ψ_t are Legendre polynomials and $t = 1, ..., \mathcal{T}$ is the time of each legislator in the congress.

The last step consist in assuming each legislator's utility has the form

$$u_{ijy} = \beta e^{[-\sum_{k=1}^{s} w_k^2 d_{ijy}^2/2]} \tag{5}$$

where $d_{ijy}^2 = \sum_{k=1}^{s} (x_{ik} - z_{jyk})^2$ is the euclidean distance between legislator i's ideal point vector x_i and z_{jy} vector of policy outcomes associated with Yea.

The program estimates β maximizing log likelihood for the first dimension, with weights set equal to 1, and re-scale ideal points to $[-1, 1]$ and estimates weights only for higher dimensions. Finally, it repeats the process for higher dimensions. The package constrains the coordinates to a topological closed ball of radius 1.

As stated before, scores are not comparable between congresses, however, distances from legislator's ideal point to the median ideal point of the party are.

The number of relevant dimensions is given by the number of eigenvalues greater or equal to 1. Figure 10 shows that all the congresses have more than one relevant dimension. As robustness check Table 17 presents the regressions where Ideological Distance has been computed with a single dimension, with two dimensions and with the optimal number of dimensions. By computing the Ideological distance with a single dimension, the signs remain unchanged. Only Party Power coefficient has lost its statistical significance when computing the fixed effects logit model.
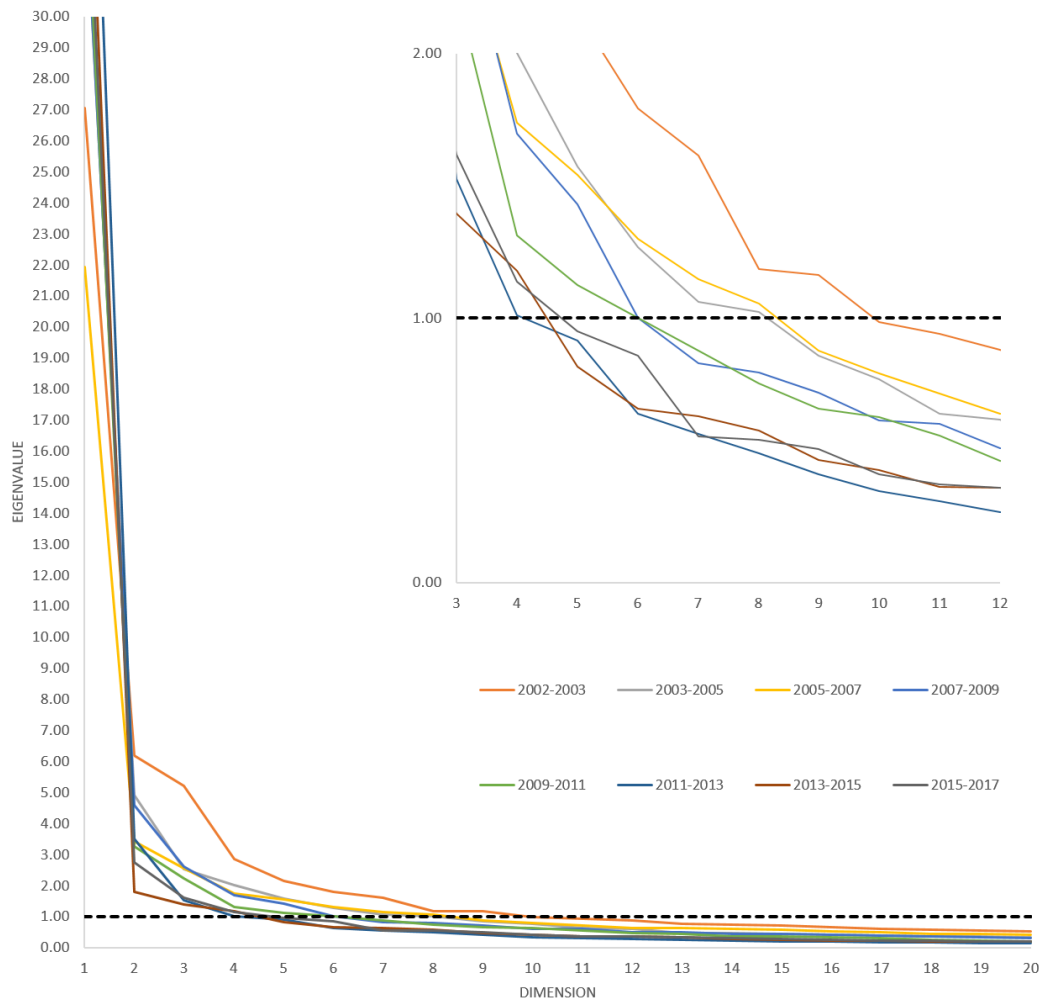
Figure 10: W-Nominate scree plot by congress

Table 17: Determinants of Party switching. Marginal effects of logit model.

	(1)	(2)	(3)	(4)	(5)	(6)
Peer Effects	0.000854***	0.000841***	0.000841***	0.00278***	0.00283***	0.00284***
	(0.0000675)	(0.0000660)	(0.0000673)	(0.000149)	(0.000147)	(0.000150)
Party Power	0.0338***	0.0380***	0.0405***	0.0340	0.0736***	0.0733***
	(0.00531)	(0.00537)	(0.00529)	(0.0225)	(0.0213)	(0.0210)
Independent	0.0134***	0.0135***	0.0146***	0.0503***	0.0490***	0.0518***
	(0.00141)	(0.00137)	(0.00140)	(0.00734)	(0.00722)	(0.00680)
Loyalty	-0.00465***	-0.00416***	-0.00429***	-0.0142***	-0.0143***	-0.0142***
	(0.00111)	(0.000994)	(0.000990)	(0.00366)	(0.00353)	(0.00357)
Party Cohesion	-0.0124***	-0.00983**	-0.00827*	-0.0315**	-0.0261*	-0.0221*
	(0.00345)	(0.00330)	(0.00326)	(0.0112)	(0.0112)	(0.0111)
Ideological Distance (1)	0.0178***			0.0639***		
	(0.00208)			(0.00743)		
Ideological Distance (2)		0.0152***			0.0411***	
		(0.00108)			(0.00386)	
Ideological Distance (O)			0.0167***			0.0447***
			(0.00117)			(0.00407)
Seniority	-0.000540*	-0.000561*	-0.000478	-0.00203	-0.00189	-0.00155
	(0.000269)	(0.000263)	(0.000254)	(0.00119)	(0.00116)	(0.00118)
National Incumbent	-0.0145***	-0.0149***	-0.0150***	-0.0430**	-0.0535***	-0.0528***
	(0.00339)	(0.00327)	(0.00318)	(0.0153)	(0.0149)	(0.0141)
Legislator FE & Time Trend	No	No	No	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	58,673	58,673	58,673	16,919	16,919	16,919

Standard errors are clustered by legislator and appear in parentheses. Columns (2) and (5) are the same as columns (4) and (6) from Table 6. Columns (1) and (3) replace the Ideological distance computed with two dimension ideal points with the Ideological distance computed with a single dimension ideal point, while columns (4) and (6) replace it with the Ideological distance computed with the optimal number of dimensions.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$