

The Impact of Party-Switching on Legislative Behavior in Brazil

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September 27, 2004

Abstract

In this paper, I examine the impact of party-switching on legislator's roll-call votes in Brazil. About one-third of deputies change party during each four year term; some change as many as seven times. Such volatility challenges basic concepts of representation - if legislators change their policy positions to accommodate their new party, they violate the basic utility of party labels for electoral information cost reduction. This research has an additional utility. Legislative scholars agree that political parties are important parts of modern democracy, but roll-call based measures of party influence cannot separate out

*I thank Argelina Figueiredo and Fernando Limongi for generously sharing their data. For excellent research assistance, I thank Moema Bonelli.

the influence of legislators own preferences and party directives. Analyzing the behavior of switchers before and after they change party gives us leverage on this and the ongoing “do parties matter” debates. I find significant and consistent party effects on legislative behavior, even when controlling for executive influence.

1 Introduction

Political parties play a central role in maintaining accountability in modern mass democracies. Unlike the Greek city states, modern democracies delegate decision-making to elected representatives, trusting that the re-election incentive will encourage good policy making. This incentive is challenged by the complexity of modern life and government. Most citizens face severe information problems - they do not have time to monitor the daily activities of legislators, including roll-call votes, bill initiations, and committee work.

Political parties provide an essential link between citizen and representative. Parties act as essential information shortcuts. Well-defined and stable party labels enable citizens to largely ignore the day-to-day of legislative and governmental affairs, but still cast an accurate vote on election day - rewarding or punishing parties for their policy performance. This basic mechanism is an essential task of parties and in many ways the glue that makes modern democracy work.(Downs, 1957; Cox and McCubbins, 1993; Snyder Jr. and Ting, 2001; Aldrich, 1995)

Ironically, while convinced of the utility and importance of parties, political scientists have had a very difficult time actually demonstrating party influence in the legislative sphere. Especially challenging has been unraveling the mechanisms driving roll-call votes. Scholars have used diverse measures of voting cohesion and spatial models in attempts to capture party influence on legislators. But in most cases we cannot distinguish between roll-call

votes cast by a legislator for personal reasons and those cast for partisan reasons.(Krehbiel, 1993) That is, are measures of cohesion high because parties enforce discipline, because legislators in parties all think alike, or for some other reason? High party cohesion scores alone do not prove the existence of party discipline on votes.

The conundrum plagues students of American politics and has spread to the legislatures of other democracies. One such country is Brazil. After a return to democracy in 1985, Latin America's largest country was soon characterized as the "anti-party system" for its shifting coalitions, frequent party switching, low voter partisanship, and dominant executives.

The weakness of the Brazilian party system was seen as a function of both history and institutions. Mass parties were first created and manipulated by Getulio Vargas in the 1940's but a lack of grassroots organization prevented the consolidation of partisanship. In addition, the argument goes, current Brazilian institutional rules don't encourage strong legislative parties. High district magnitude combined with open-list proportional representation means that legislators should compete *within* parties for votes and should carve out constituencies by being different, not the same, as their party colleagues.(Ames, 2001, 1995a,b; Mainwaring, 1999; Carey and Shugart, 1995) Decentralized federalism should exacerbate party weakness by reducing the potential influence of national leaders.(Souza, 1998; Mainwaring, 1997, 1999)

More recent scholarship has taken a different position, arguing that Brazilian parties are relatively well-consolidated, party leaders have substantial ability to influence their flocks, and legislators vote in a disciplined fashion. Such arguments rely, as in the US Congress literature, on careful analysis of roll-call votes.(Figueiredo and Limongi, 1995, 2000)

But these findings can be subject to the same kinds of criticisms found in other legislative debates. We can't be certain that high levels of voting cohesion are the result of influential parties. In Brazil, there are two com-

peting mechanisms that might explain high cohesion. The first, as in other countries' debates, is that legislators might all cast completely undisciplined votes - but within each party have similar opinions. The second is that the powerful Brazilian president might create cohesive votes by purchasing party coalitions with pork.

Previous work on party-switching suggests a solution. If legislators are not influenced by parties, their behavior should not change when they switch party. If parties do influence legislative behavior, legislators should move closer to their new parties' preferred locations. Nokken (2000) first used this approach to examine U.S. legislators that changed parties, testing whether they changed their voting behavior to match their new party. He found significant shifts in policy positions among US legislators - evidence of party influence over legislators. His analysis is limited to the only 30 legislators to switch party in recent US history.

Form comparison, there usually more than 200 party switches during any legislative term in Brazil. In this paper, I explore the impact of parties and presidents on legislators' votes. Using roll call votes, party-switching records, and executive coalition data from the 48th, 49th, and 50th legislatures, I test a simple model of voting behavior. The results suggest strong and significant party influences over legislators, even when controlling for the powerful executive branch.

I proceed in 3 additional steps. In the next section, I provide an overview of the Brazilian political system and basic patterns of party switching. In Section 3, I build and estimate a model of party influence on switching legislators. In Section 5, I discuss my results and their implications.

2 Party Switching in Brazil

Party-switching is a long-running theme in Brazilian party politics. References to opportunistic party-switching go back as far as the mid 1800's (?) as well as in the democratic period of 1945-1964.(Schneider, 1971) Switching was largely thwarted by the military during the authoritarian regime (1964-1985), but quickly returned when affiliation rules were liberalized in the early 1980's.

Table 1 summarizes recent switching patterns for the Chamber of Deputies and Federal Senate. About a third of deputies and a fifth of senators will switch party during any four year period. Both legislatures' figures are relatively high, but switching rates for the Senate are somewhat lower than that of the Chamber. Previous work suggests that lower Senatorial switching rates reflect different electoral rules and different career patterns. The first-past-the-post system of Senate elections does not reward switchers like the Chamber's OLPR system, and Senators tend to be relatively senior members of their party. They are more likely to be in a position to push a party to change in their favor than to need to switch party because of disagreements.

Switching has declined slightly of late - by about 20% in the Chamber, and 30% in the Senate. This may reflect increasing party system consolidation and recent changes in institutional rules. Legislators' guarantee of automatic renomination has been removed, and must maintain stable party memberships months before elections. Regardless, switching rates are still quite high when compared with most countries.

Why do Brazilian legislators switch? Desposato (2002) found three core motives using interviews and data analysis. First, legislators change party in search of national and gubernatorial pork. That is, national legislators tend to switch into parties that form governing coalitions in Congress, or govern their home states. Second, legislators switch party when they are

Table 1: Party Switching Rates

	Chamber		Senate	
	49th	50th	49th	50th
Leg. Size	503	513	81	81
Number of Switches	262	212	26	17
Switching Rate	.52	.41	.32	.21
Number of Switchers	198	169	25	13

ideologically alienated within their own party. Finally, Brazil’s electoral rules make election easier in some parties than others, and legislators tend to join parties that facilitate election.

These findings concur with ongoing work in other countries. Mershon and Heller (2001) link frequent switching in Italy to electoral rules, discipline, and party size. Mejia (1999) explores switching in Ecuador, explaining variance as a function of district magnitude, party size, and party ideology. Reed and Scheiner (2002) explore the dynamics of the LDP’s breakup in Japan, finding that defection from the ruling party was a function of both legislators’ policy preferences and electoral opportunities. Turan (1985) shows that switching in Turkey varies with incumbency, district magnitude, and development.

3 Evidence

In this section, I examine roll-call votes for evidence of changes in policy positions before and after switching party. I use two approaches. First,

I examine basic measures of party agreement before and after switching. Second, I build and estimate spatial model of behavior.

3.1 Switching and Agreement Scores

We can observe basic behavioral patterns by simply comparing the extent to which switching legislators vote with their old and new parties, before and after switching. Define a legislator L 's agreement with party P , L_P as:

$$L_P = \frac{\sum_{i=1}^n I_{P_i=L_i}}{n}.$$

P_i and L_i are the party's and legislator's positions on bill i , respectively, so $I_{P_i=L_i}$ is an indicator variable coded "1" if the party and legislator agree, and "0" if they take differing positions. Effectively, this is the percentage of times that a legislator votes with a party leader's recommendation.

Table 2 compares basic party agreement scores for switchers and non-switchers for the 49th and 50th legislatures. For both groups, overall agreement is reasonably high, but defectors have slightly lower agreement scores. This echo previous work(Desposato, 2002), finding that legislators in disagreement with their own party are more likely to change party.

Table 2: Party Agreement Scores

	Legislature	
	49	50
Switchers	.75	.83
Non-Switchers	.76	.84

Table 3 reports switchers' agreement scores with their old and new parties, before and after switching. The top left cell shows mean agreement scores

while in their old parties; the bottom right cell shows the same while in their new parties. The off-diagonals show agreement with the new party *before* switching and agreement with the old party *after* switching. That is, they capture the extent to which one voted with her old party after leaving it, and the extent to which a deputy votes with her new party before even joining it.

Table 3: Switching and Party Agreement Scores

	Legislature			
	49th		50th	
	Before	After	Before	After
Old Party	.76	.64	.82	.78
New Party	.60	.73	.72	.84

Table 4: Presidents, Switching, and Party Agreement Scores

	Gov. to Gov		Gov-Opp	
	Before	After	Before	After
Old Party	.84	.81	.79	.27
New Party	.80	.84	.26	.90

If parties don't matter, then legislators should vote with their old party just as much after switching as before; if parties do influence behavior, then legislators should increase their voting with their new party, and decrease their voting with their old party. Table 3 reports pre- and post-switch agreement scores. There are clear and obvious changes in legislators' behavior,

lending support to the party influence hypothesis. In the first period, before changing, deputies voted with their party's positions about 75% percent of the time; after changing, they voted with their old party significantly less, just 64% percent of the time. Similarly, they voted with their new party just 60% of the time before switching and 73% of the time after switching. Agreement scores increased across the board for the 50th legislature, but the same basic pattern emerges, suggesting significant changes in voting behavior by legislators. Switchers do modify their voting behavior to be more like their new party after changing, providing evidence of party influence over legislators.

But are these changes simply driven by the influence of the executive? Previous work has found it difficult to parse out the dramatic influence of the powerful Brazilian president and political parties on legislative behavior (Desposato and Samuels, 2003). Table 4 parses out these effects, comparing switching between the government and opposition coalitions with agreement patterns for switching within the governing coalition. The differences between the two are striking. When switching between the government and opposition coalitions, three factors are notable. First, legislators' agreement with their party of origin are lower on average - 79%. Second, agreement with destination parties is higher - 90%. Finally, "off-diagonal" agreement scores are quite low. The implication is that there are substantial changes in voting behavior when switching between the government and opposition.

When switching simply within the governing coalition, the impact of switching is much lower but persists nevertheless. Switchers have roughly equal levels of agreement with their pre and post-switch parties - about .84 - suggesting that their switches are not driven by ideological differences with their old parties. The "off-diagonals" are lower than the actual party agreement scores. Prior to switching, deputies voted with their old party 84% of the time; after switching this fell to 81% of the time. The figures for new

parties pre and post switching are similar. The initial implication is that executives have substantial influence over deputies' behavior, but that even so, partisan considerations force switchers to change their behavior - even when within a single large governing coalition.

3.2 A Spatial Test

The agreement measures provide compelling support for the party influence hypothesis, but does not include any spatial component. We can build a model of party influence using standard spatial methods. In this section, I build a simple spatial model to test for party influence.

A standard random utility model of voting is as follows. Let θ_i be legislator i 's ideal point, β_j be the location of a "yes" vote on bill j , and α_j be the location of a "no" vote on bill j . Legislator i votes "yes" on bill j if:

$$f(\theta_i - \beta_j + \epsilon_{ij}) < f(\theta_i - \alpha_j + \epsilon_{ij})$$

and "no" if

$$f(\theta_i - \beta_j + \epsilon_{ij}) > f(\theta_i - \alpha_j + \epsilon_{ij}).$$

where ϵ_{ij} is an iid random variable and f describes legislators' utility functions. Typically, ϵ is distributed iid normal or extreme value, generating a probit or logit-like model, and f is quadratic or exponential.¹

In the above model, θ_i is effectively a combination of legislators' own preferences and pressures from party organizations and other actors. We can further separate the θ into legislator and party specific components:

$$\theta_i = (1 - \alpha)L_i + \alpha P_j$$

where

$$0 \leq \alpha \leq 1.$$

¹See Londregan (1997) and Poole and Rosenthal (1997) for additional discussion.

In this case, α measures the relative influence of parties over legislator's *observed* ideal points, which may be the result of pressure from parties, constituents, and other interests as well as each legislator's own preferences. When α is at its minimum value ($\alpha = 0$), all of legislators' behavior reflects their own preferences. When α is at its maximum ($\alpha = 1$), all of legislators' behavior reflects party preferences.

But in a system with stable party membership, this is a purely academic exercise. With only one measure of θ per legislator, θ_i is an irreducible function of legislators' own preferences, party influence, and other possible pressuring actors. Without additional information or strong assumptions, we cannot distinguish between party and legislators' preferences.

But when legislators switch party, as in the case of Brazil, we have the variance we need to estimate α . We pick an error distribution for ϵ , pick a utility function for legislators f , and estimate α via maximum likelihood or bayesian methods. Practically, however, this can be quite difficult and actual estimation requires using slow statistical languages (like R, Gauss, etc) or learning a machine language like C++ or Fortran.

For the time being, I chose to use existing technology to estimate ideal points and then “back out” the parameter of interest, α . That is, I first estimate ideal points for all unique observed legislator-party combinations, then use these ideal points to estimate α . The basic procedure is as follows:

1. Estimate ideal points for each observed legislator-party combination. In other words, if a legislator switched from the Democratic Worker's Party (PDT) to the Liberal Front Party (PFL), I will estimate two ideal points for her - one for her votes cast while in the PDT (θ_{iPDT}), and another for her votes cast while in the PFL (θ_{iPFL}).
2. Estimate party locations (P). I use two methods. First, I estimated each party's ideal point as the median of its non-switching members.

Second, I estimated a separate party ideal point by counting publicly-taken party positions as votes. When party leaders declared a party position prior to roll-call votes, for the purpose of estimating a party location, I counted that position as a party vote.

3. These steps lead to the following model of party influence:

$$\theta_i = \alpha P_k + (1 - \alpha)L_i + \epsilon_{ik}$$

This is effectively a fixed-effects model, where the dependent variable is switcher i 's ideal point while in party k , the covariate P_k measures party k 's ideal point, α is the coefficient of interest, and a fixed effect is inserted to capture $(1 - \alpha)L_i$.²

Finally, recall that there was a second alternative hypothesis in Brazil to party influence: executive influence. That is, observed changes in behavior might reflect *executive*, not partisan influence. This argument would say that changes in voting behavior reflect switching into or out of the executive's coalition, and that influence reflects the executive's powerful position as a key distributor of pork and patronage.

Minor tweaking of the preceding allows us to include executive influence:

$$\theta_i = (1 - \alpha_1 - \alpha_2)L_i + \alpha_1 P * I_{Cabinet} + \alpha_2 E.$$

where P is the President's estimated ideal point and $I_{Cabinet}$ is an indicator variable coded "1" if legislator i 's party is part of the cabinet and "0" otherwise.

- H_0 : $\alpha_1 = 0$; $\alpha_2 = 0$ Legislators are uninfluenced by parties and executives; their votes reflect only their own preferences (or those of their

²Consequently, we cannot directly estimate $1 - \alpha$, but can only get at it indirectly through the estimate of α .

constituents)³. The observable implication of this hypothesis is that there are no significant changes in the estimated ideal points of switchers.

- H_1 : $\alpha_1 > 0$ Legislator’s roll call votes are influenced by their parties. Switchers move closer to the party they switch into.
- H_2 : $\alpha_2 > 0$ Legislator’s roll call votes are influenced by the executive branch. At the extreme, if the President has influence but not the parties, we will observe changes in ideal points for legislators switching into or out of cabinet parties, but not for those switching between parties within or without the cabinet.

4 Data, Methods, and Results

4.1 Data

All roll call votes from the Chamber of Deputies, 1989-1998. I used two sources. First, I collected all roll-call votes directly from the Secretaria Geral da Mesa in Brasilia. Second, I also compared these results with Argelina Figueiredo and Fernando Limongi’s dataset of roll-call votes. Results were similar for both datasets. Ultimately, I reported results from their data because it includes party and presidential positions on key votes.

4.2 Methods

I used the Poole and Rosenthal (1997) WNOMINATE, effectively the current industry standard for ideal point estimation. Alternative approaches

³In this paper I ignore the influence of constituents and interest groups on legislators’ votes. Effectively, I lump constituency preferences and legislators’ own preferences into a single parameter, L_i .

exist, and I discuss some of the trade-offs associated with my choice in the Appendix.

4.3 Results

Tables 5 and 6 show results from estimating only party effects while excluding executive pressures. The tables report estimated values for α using both measures of party preferences discussed above, for the last three legislatures. Each value of α was estimated in a model including fixed-effects for each legislator; those estimated fixed effects are not shown. The first table shows estimates from the first dimension WMINATE scores; the second table shows second dimension estimates.

Table 5: Party Influence Measures - Dimension 1

	Legislature								
	48th			49th			50th		
	$\hat{\alpha}$	SE		$\hat{\alpha}$	SE		$\hat{\alpha}$	SE	
Party Leader	.44	.11	**	.44	.09	**	.75	.03	**
Party Median	.54	.10	**	.49	.09	**	.81	.03	**
Deputy-specific fixed-effects not shown.									
**=.01; *=.05									

Both tables show consistent and significant party influences over legislative behavior; switchers on average do change their voting to better match their new party's preferences. Party influence is significant on both dimensions using all measures for all legislators - across all twelve models. In general, the median-based estimates are larger than the party recommendation-based estimates, but the two tend to move in sync.

Table 6: Party Influence Measures - Dimension 2

	Legislature					
	48th		49th		50th	
	$\hat{\alpha}$	SE			$\hat{\alpha}$	SE
Party Leader	.37	.08	**	.22	.10	*
Party Median	.60	.09	**	.24	.11	*
Deputy-specific fixed-effects not shown.						
**=.01; *=.05						

Tables 7 and 8 add in executive influence.⁴ Several results stand out. First, for most Presidencies, both parties and presidents have substantial and statistically significant impacts on legislative behavior.⁵

Figures 1 to 4 illustrate with several examples of switchers' behavior. The graphs show the relative change in behavior of four legislators that changed party. The grey dots represent the first and second WNOMINATE scores of all legislators. The highlighted and labeled points are the party and president ideal points, based on their publicly-taken positions, reported in Figueiredo and Limongi's roll-call vote dataset. Each of the four graphs focuses on the shifting observed ideal points of a different switcher, tracked by the solid line.

In the first graph, Luiz Piauhyllino of Pernaumbuco left the leftist PSB for the President's party, the PSDB, in June of 1995. His voting obviously underwent a dramatic shift - from the bottom left corner of the graph to immediately adjacent to his new party. In the second graph, we can see a party switch between two conservative parties. Jorge Wilson changed back

⁴More details on the coding and estimation of these models is included in the Appendix.

⁵Note that I did not constrain the coefficients (or their sum) to be between zero and one.

Figure 1: Switcher's Changing Ideal Points

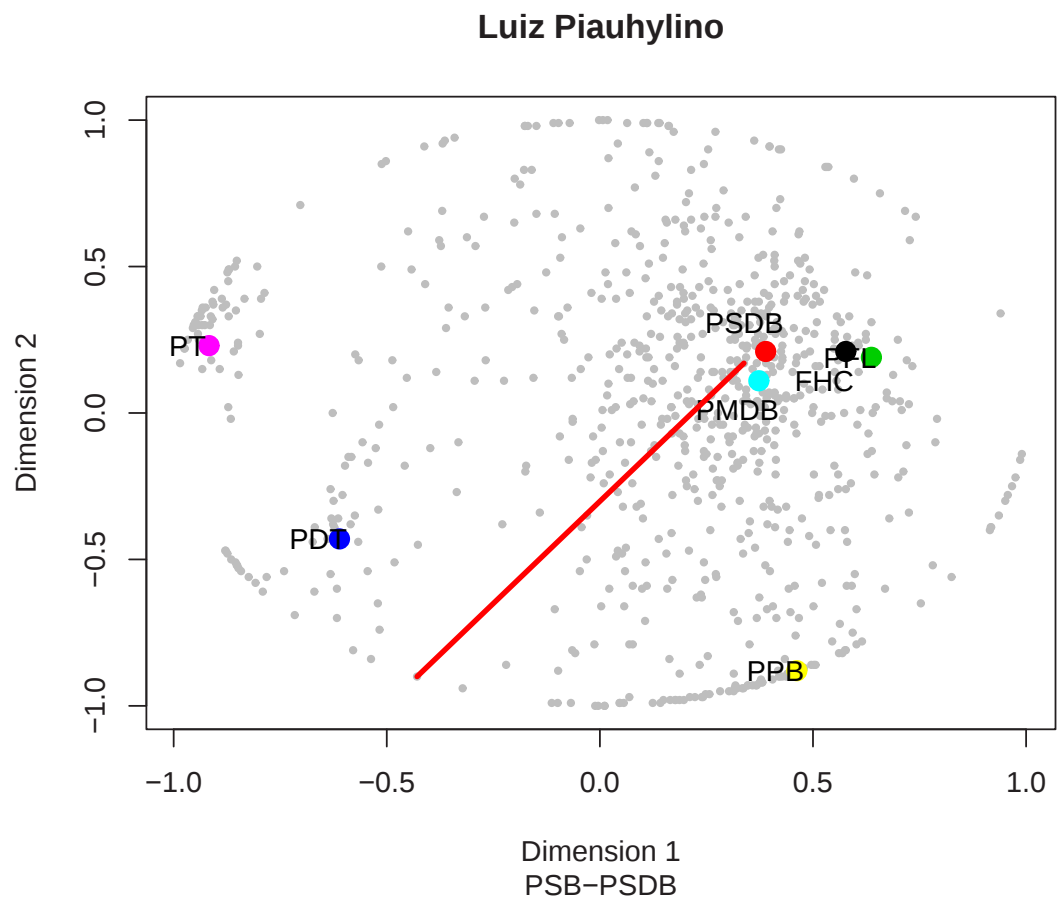


Figure 2: Switcher's Changing Ideal Points

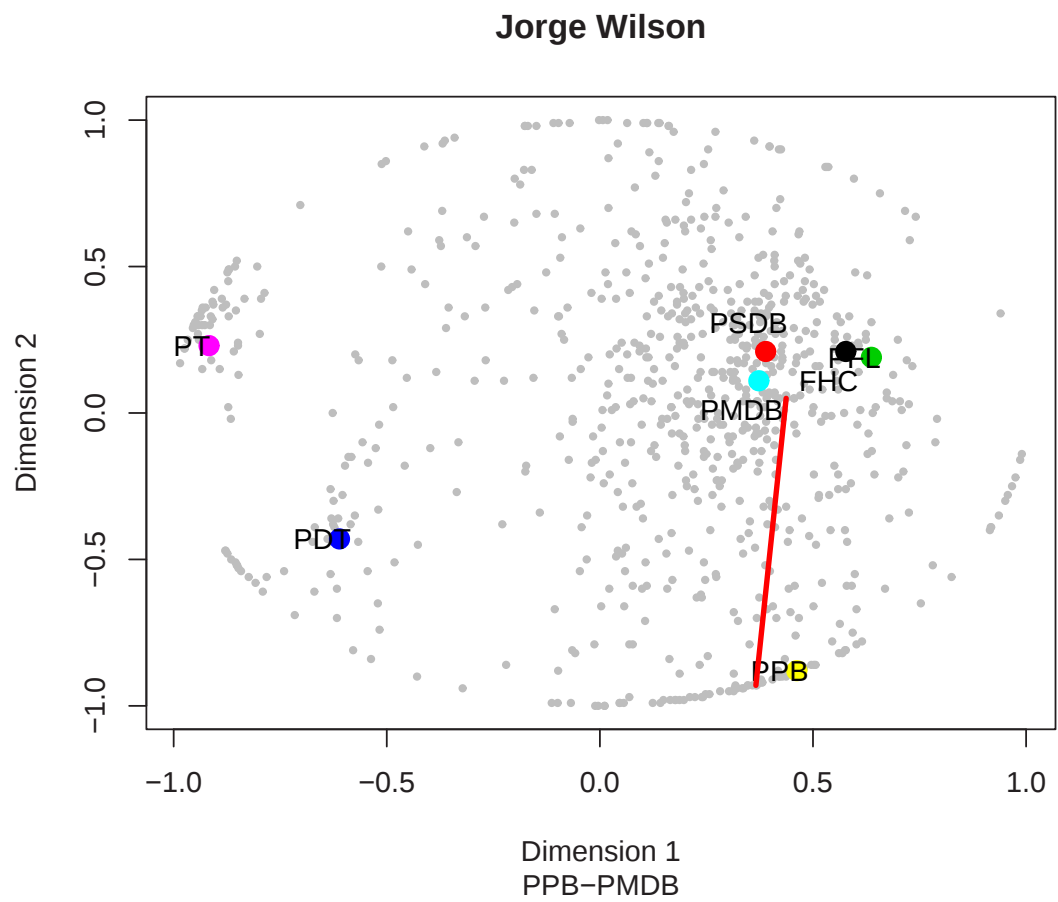


Figure 3: Switcher's Changing Ideal Points

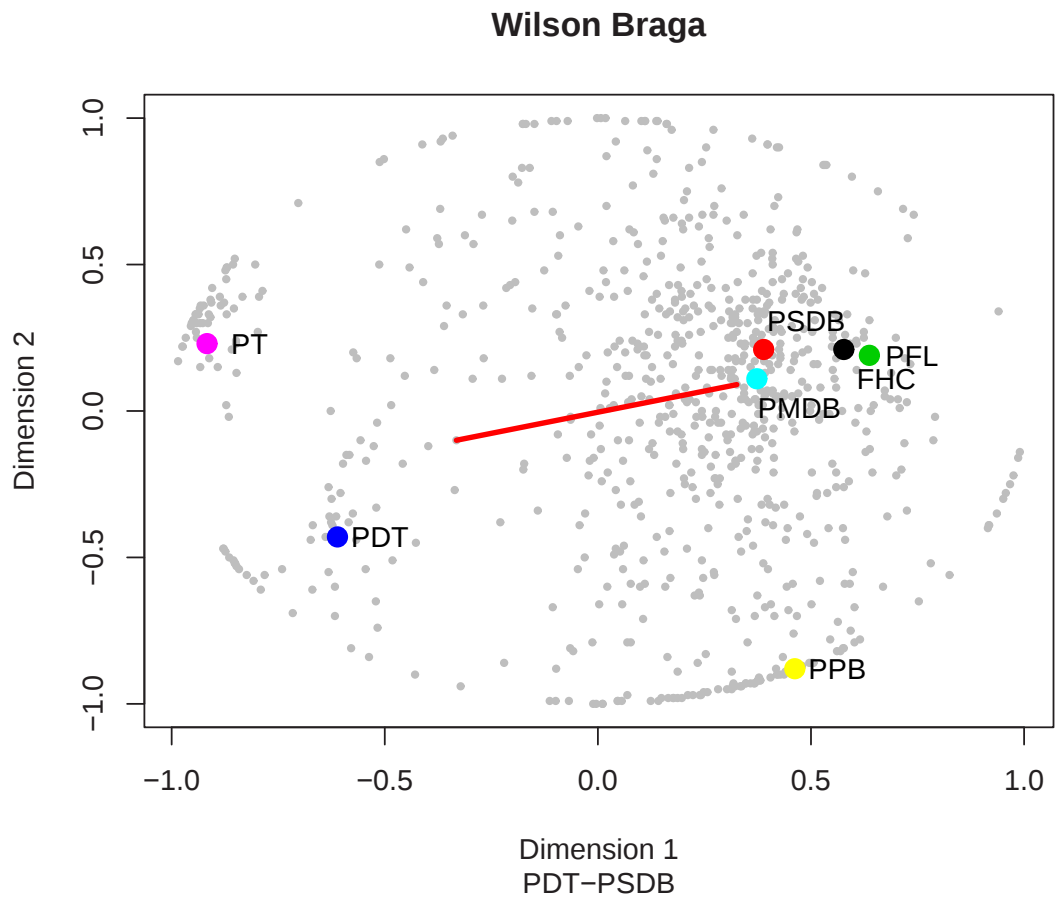


Figure 4: Switcher's Changing Ideal Points

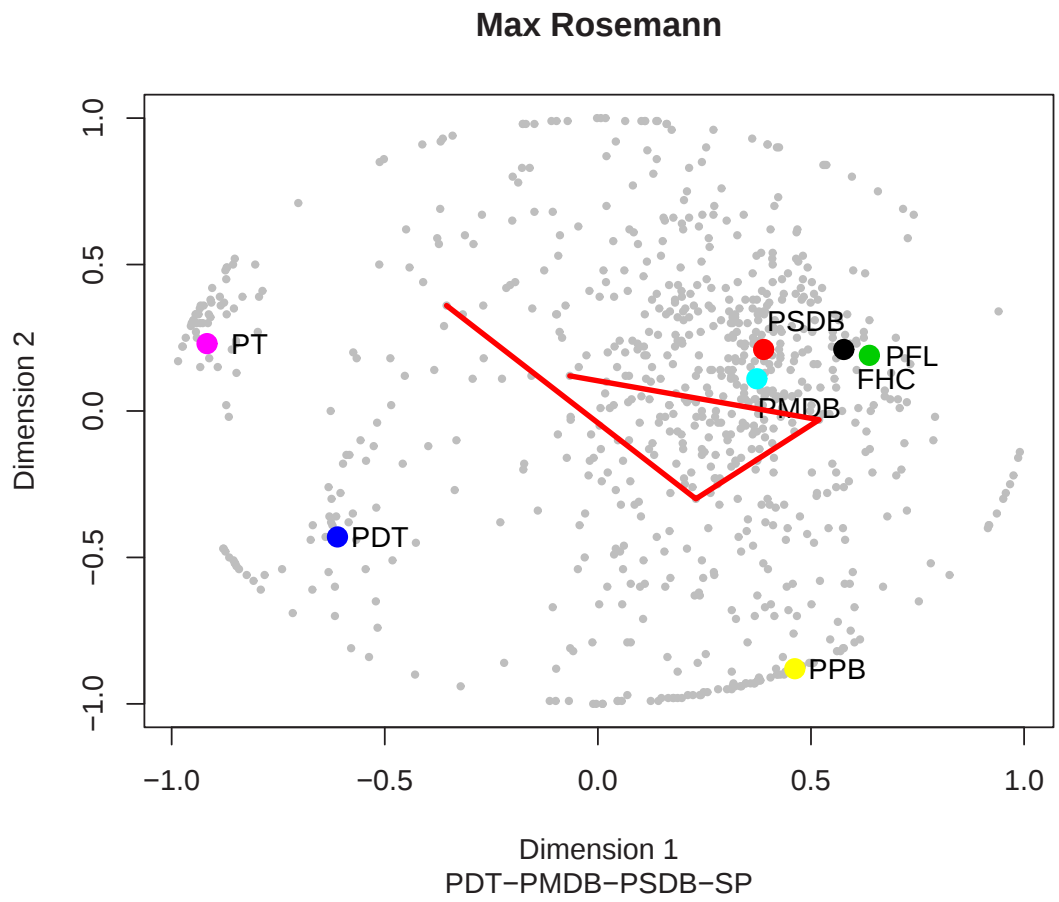


Table 7: Party vs. Executive Influence - Dimension 1

	Legislature								
	Collor			Franco			Cardoso		
	$\hat{\alpha}$	SE		$\hat{\alpha}$	SE		$\hat{\alpha}$	SE	
Party	.71	.26	**	.56	.12	**	.31	.05	**
President	.28	.12	*	.48	.12	**	.35	.02	**
Deputy-specific fixed-effects not shown.									
**=.01; *=.05									

and forth between the PMDB and PPB. Elected in the PMDB of Rio de Janeiro, he switched into the PPB in December of 1995, stayed two years, then moved back to the PMDB in October of 1997. His voting behavior underwent a simultaneous change, from a loyal PMDB member to a solid PPB voter.

The third graph shows Wilson Braga’s transition from center-left to center-right, as he switched from the leftist/populist PDT to the president’s PSDB party. He was not initially the most loyal PDT member - his PDT ideal point was relatively far from the party centroid. After switching, however, he took positions very close to the PSDB’s recommended line.

Finally, the fourth graph shows Max Rosmann’s stroll across the ideological spectrum. The legislator from Rio de Janeiro began his journey in the PDT, in the left portion of the screen, as a relatively alienated member of the PDT. He shifted to a center-right position when he joined the PMDB, moved into the core of the governing party when he joined the President’s PSDB, and finally ended nearly back where he started though this time without any party membership (“sem partido”).

These are just four examples of the basic trends observed in the data,

Table 8: Party vs. Executive Influence - Dimension 2

	Legislature								
	Collor			Franco			Cardoso		
	$\hat{\alpha}$	SE		$\hat{\alpha}$	SE		$\hat{\alpha}$	SE	
Party	.04	.11		.56	.07	**	.47	.06	**
President	-.18	.10		.30	.09	**	1.04	.43	*
Deputy-specific fixed-effects not shown.									
**=.01; *=.05									

but the emerging pattern is quite consistent. Legislators significantly change their voting behavior when switching party, and these changes can take place even with switches among the center-right parties.

5 Conclusion

Party-switching is frequently seen as evidence that “parties don’t matter”. Ironically, switching indicates that party affiliation is important to legislators - otherwise they would not switch at all. Further, recent scholarship has shown how party-switching provides a useful lens for understanding party systems, helping us gain leverage to answer the “why parties” question.

In this paper, party-switching helps address an important debate in comparative politics - how strong are Brazilian political parties? While traditionally characterized as weak, fragmented, and largely unimportant, recent work has suggested that we have underestimated Brazilian party development, but existing methods have been unable to unravel the different effects of personal, partisan, and presidential influence over roll-call votes.

My analysis of changes in party-switchers behavior finds consistent and

significant (substantively and statistically) shifts in switchers' ideal points - legislators move significantly toward their new party. These patterns persist even when controlling for presidential influence. The implication for Brazilian politics is that parties do have significant influence over deputies' behavior.

I suggest two additional lines of research to better understand the new Brazilian political system. First, we should focus on why legislators' respond to parties. Do party leaders pressure deputies and punish defectors with pork, committee assignments, and other privileges? Recent work has begun to explore these questions; additional work is needed. Second, I modeled party and presidential positions as exogenous variables, but there may be a more complex story to be told whereby both are negotiated between cabinet members.

Note, however, that while switching does enable us to measure party effects, it also poses a quandary for the nature of representation in Brazil. Normally, one would think of cohesive, programmatic parties as strengthening representation, and weak catch-all parties as weakening representation. But party switching reverses this relationship. To the extent that party membership does affect voting, parties should be able to act as information providers for voters, providing credible indicators of policy directions. But switching destroys the utility of party labels for voters - because voters do not know if their deputy is going to stay put or not! So (on average), voters cannot rely on party labels, with well-known exceptions. On the other hand, if party membership had *no* impact on voting behavior, then information demands would be much higher for voters. At the same time, voters *can* trust candidates to advance a promised policy agenda - because even if they switch party, their policy positions won't change.

A Additional Estimation Issues and Possible Solutions

This appendix discusses in more detail several of the potential problems with my methodological approach. In particular, three are the most important. Ultimately, all problems will be solved through a more “first-principles” approach - directly modeling roll-call votes along the lines of WNOMINATE.

The first problem is that the estimates suffer because the key covariates - P_j and E are estimated with error. The fixed-effects model I used assumes that all independent variables are fixed and estimated without error. However, the measures of Party and Presidents’ locations are themselves estimates, not fixed values. Lewis (2000) considers fixes when the *dependent* variable is estimated with additional error, but not the case of independent variable measurement error.

The second problem is that the WNOMINATE method - indeed, all methods for ideal point estimation - only allow “yea” and “nay” votes - ignoring the possibility of strategic and meaningful abstentions. In Brazil, abstentions are frequent, especially on the President’s major legislative initiatives. Ignoring them could attenuate estimates of executive influence.

Several solutions are possible. One is to simply code all abstentions as “nay” votes, but so doing makes equally strong and naive assumptions about voting behavior - that legislators never get sick, skip sessions to attend to constituents or meet with officials, or are otherwise indisposed. Further, previous research (Desposato, 2001) suggests that even strategic abstentions are more than just “no” votes, but something somewhere between a yes and a no vote.

The other solution, as mentioned above, is to directly estimate α_1 and α_2 from roll-call votes. A utility function for legislators could be directly written that incorporates strategic and sincere abstentions as well as the influence

of parties, presidents, and legislators' own preferences. Unfortunately this would require unreasonable amounts of programming and processing time.

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