

# *Explaining Electoral Volatility in Latin America: Evidence at the Party Level*

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## ABSTRACT

Many existing explanations of electoral volatility have been tested at the country level, but they are largely untested at the individual party level. This study reexamines theories of electoral volatility through the use of multilevel models on party-level data in the lower house elections of 18 Latin American countries from 1978 to 2012. Testing hypotheses at different levels, it finds that irregular institutional alteration increases electoral volatility for all the parties in a country, but the effect is more significant for the presidential party. At the party level, the results show that while a party that is more ideologically distinctive than other parties tends to experience lower electoral volatility, party age is not a statistically significant factor for explaining party volatility.

Many studies of democracy have underscored that political parties play an important role in linking diverse social forces with democratic institutions, channeling societal demands, managing sociopolitical conflicts, holding government officials accountable to the electorate, and legitimizing the regime (Dix 1992; Sartori 1968). Political parties with stable and consistent support across elections foster more effective programmatic representation (Mainwaring and Zoco 2007, 157) and facilitate the institutionalization of political uncertainty (Przeworski and Sprague 1986). In contrast, party systems with extremely high electoral volatility tend to produce populist leaders (Weyland 1999, 384), hamper electoral accountability (Mainwaring and Torcal 2006), and even have a negative impact on voter turnout (Robbins and Hunter 2012).

In comparison to Western Europe and the United States, the level of electoral volatility is exceptionally high in Latin America (Payne et al. 2002). In the 1990s, the overall electoral volatility in this region was about twice that in the developed world (Roberts and Wibbels 1999). Given that rapid vote choice changes and unpredictable election campaigns are prevalent political characteristics of this region (Baker et al. 2006), what explains the variation in electoral volatility in Latin American countries? Previous work on electoral volatility has provided explanations about political institutions (Roberts and Wibbels 1999), national economic performance (Remmer 1991, 1993), ethnic heterogeneity (Madrid

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Table 1. Electoral Volatility in Mexico

Election Period	Country-level Volatility (Pedersen Index)	Party	Party-level Volatility (Absolute Value of the Vote Change in %)
2000–2003	4.2	PRI	0.3
		PAN	7.3
		PRD	0.8
		Others	8.5
2003–2006	7.0	PRI	8.6
		PAN	2.4
		PRD	11.5
		Others	5.4
2006–2009	10.7	PRI	10.0
		PAN	4.6
		PRD	16.8
		Others	11.4

2005a), and democratic experience (Mainwaring and Zoco 2007). While these explanations have been tested at the country level, they are largely untested at the individual party level, even though that is the level at which the effects of certain relevant explanatory factors are expected to work.

In addition, one problem of the studies that focus on country-level electoral volatility is that the measure of aggregate electoral volatility masks patterns of party electoral volatility (Morgenstern and Potthoff 2005, 30). Table 1 illustrates an example comparing the difference between country-level volatility and party-level electoral volatility for Mexico. The country-level volatility is operationalized as the Pedersen Index (Pedersen 1983), which is calculated by halving the sum of the absolute change in all party vote shares (or seats) between two elections, while the party-level volatility is measured as the absolute value of the change of a party's vote share between elections.

Table 1 shows that there is a great variation in aggregate electoral volatility as well as party volatility in Mexico. More important, it demonstrates that merely inspecting the Pedersen Index might be misleading for analyzing electoral volatility. For instance, the Pedersen Index of 4.2 for Mexico's 2000 and 2003 elections tells nothing to reveal that the Partido Acción Nacional (PAN) was more volatile than the Partido de la Revolución Democrática (PRD) and the Partido Revolucionario Institucional (PRI). Moreover, although the Pedersen Indices in Mexico show that the elections have become more volatile since the 2000 election, the Pedersen Indices do not show that the volatility of the PRI and the PRD drove the overall electoral volatility in Mexico and that, in contrast, the incumbent PAN had relatively low volatility.

Why do some parties have higher levels of electoral volatility than others? Do factors known to cause volatility at the country level also operate at the party

level? Do certain party attributes condition the effects of other factors on electoral volatility? This article aims to address these questions by bringing evidence at the party level into the analysis through the use of multilevel models. Using party-level data in the lower house elections of 18 Latin American countries from 1978 to 2012, this study applies a hierarchical linear model (HLM) to test hypotheses about electoral volatility at different levels.

The empirical results demonstrate that an irregular institutional discontinuity, such as a significant enfranchisement or a forced presidential resignation, greatly increases the presidential party's electoral volatility. At the party level, the analysis finds that a party with a higher level of ideological distinctiveness has lower volatility. In sum, relative to previous work, this study is distinctive in that it uncovers patterns of electoral volatility and provides a better understanding of the dynamics of party politics in new democracies.

## **WHY STUDY PARTY-LEVEL ELECTORAL VOLATILITY?**

This study provides an original analysis of electoral volatility by considering both country-level and party-level factors. In general, electoral volatility refers to the phenomenon in which voters switch vote choice between elections. At the country level, many previous studies have used the Pedersen Index to operationalize the level of aggregate electoral volatility (Birch 2003; Kuenzi and Lambright 2001; Mainwaring and Scully 1995; Mainwaring 1999; Roberts and Wibbels 1999). However, as Mair (1997, 66) argues, aggregate volatility measurements such as the Pedersen Index explain little about the persistence or decay of political cleavages. Mainwaring et al. (2010) contend that the Pedersen Index fails to distinguish between the volatility caused by vote switches from one party to the other and the volatility caused by the entry and exit of parties from the political system (see also Powell and Tucker 2014).

More important, the Pedersen Index provides no information about the volatility of individual parties. As table 1 shows, a higher level of aggregate electoral volatility does not necessarily imply that all the parties in the country are equally volatile between elections. In his analysis of the Argentine party system, Levitsky indicates that "while it is true that electoral volatility has increased over the last decade ... such 'de-freezing' has occurred predominantly on the anti-Peronist side of the Peronist/anti-Peronist cleavage" (1998, 461). In this sense, merely inspecting the measure of aggregate volatility might lead to incorrect inferences about volatility patterns of individual parties.

Party volatility considers the degree to which a party's average vote is stable across two consecutive elections. A stable electoral performance not only matters for a party's long-term survival, but also "enables politicians to craft legislative programs serving established constituencies and to target vote-seeking strategies" (Ames et al. 2012, 51). Previous studies about country-level electoral volatility have considered various competing theoretical explanations, but some of the tested

hypotheses are actually derived from behavioral patterns of individual parties (Mustillo and Mustillo 2012, 432–33). For instance, Roberts and Wibbels (1999) use the average age of the political parties that received more than 10 percent of the vote to indicate the level of a country's party system institutionalization, and consider it an independent variable for explaining country-level volatility. This operationalization reflects an analytical challenge for examining party institutionalization theory: if the age of individual parties matters, then the party level, rather than the country level, should be the most appropriate level for testing the theory.

## EXPLAINING PARTY VOLATILITY

Unlike previous studies of electoral volatility that focus on country-level explanations, this study asks, is a party's electoral volatility determined by country-level factors, features of the party, or both? To test hypotheses at different levels, this study adopts a multilevel model for empirical analyses. This section discusses various competing theoretical arguments about party electoral volatility at different analytical levels.

### Party-level Hypotheses: Party Age and Ideological Distinctiveness

Roberts and Wibbels (1999) argue that it takes time for a party system to be institutionalized. The authors suggest that parties in an older party system are expected to have deeper organizational and societal roots than those in a younger party system.<sup>1</sup> As a party system ages, it becomes more institutionalized and thus it “will discourage electoral volatility by closing off the electoral marketplace, narrowing the range of viable alternatives, and socializing voters to embrace established partisan identities” (Roberts and Wibbels 1999, 578). The argument that electoral volatility diminishes over time has been supported by various empirical studies (Lupu and Stokes 2010; Madrid 2005a; Tavits 2005).<sup>2</sup>

While Roberts and Wibbels's thesis of party system institutionalization sheds light on the relationship between democratic learning and party system stabilization, their empirical finding merits greater scrutiny. For one thing, Roberts and Wibbels's operationalization of party system age ignores the variation of party age within a country. Thus their argument might imply that party volatility will be generally higher in an older party system, regardless of how old a party is in that country. This implication might be problematic because the established parties that have long enjoyed widespread partisan loyalties should perform better in elections (Lupu and Stokes 2010, 92). In this sense, older parties should have lower levels of electoral volatility than younger parties because the former tend to have stronger party organizations that can help secure stable support.

Roberts and Wibbels also impose a coding criterion for operationalizing the party system institutionalization variable. Specifically, the authors use the average age of parties that obtained at least 10 percent of the vote as the indicator of the

level of party system institutionalization. This operationalization might be problematic because the selection threshold excludes parties that obtained vote shares of less than 10 percent, thus assuming that these parties are simply and equally unimportant. To avoid this problem, I argue that it is more proper to test the hypothesis of age at the party level. Accordingly, I propose the following hypothesis:

*H1. The level of a party's electoral volatility will diminish with the age of the party.*

Another testable party-level hypothesis of this study pertains to the effect of a party's ideological distinctiveness. As the spatial voting theory suggests, voters are less likely to switch votes between parties when the distance of policy (or ideology) position between parties is large (Bartolini and Mair 1990; Downs 1957). Thus, a highly polarized party system might "reduce electoral volatility by anchoring parties and their constituencies in highly differentiated ideological positions" (Roberts and Wibbels 1999, 579). The theory of party system polarization has an important implication for analyzing electoral volatility at the party level. If the theory holds, a party that is more distinctive in its ideological position should have a more stable electoral performance.<sup>3</sup> In short, I propose the following hypothesis:

*H2. A party that has a higher level of ideological distinctiveness (from the rest of the parties in the system) will have lower electoral volatility.*

### **Cross-level Explanations: Presidential Party, Economy, and Institutional Change**

Whether a party holds the presidency can be an important party-level attribute that conditions the effects of other explanatory factors. Historically in Latin America, the presidency has been considered an extraordinarily important institution in terms of its dominant political power (Mainwaring and Shugart 1997). As Bonvecchi and Scartscini (2011, 2) argue, however, presidents "are often singled out and blamed or rewarded for the state of the economy and public affairs" (see also Mainwaring 1993, 214). In other words, voters tend to assign greater responsibility for certain policy outcomes to the president and the president's party and take into account the retrospective evaluation of these outcomes in their vote choices.<sup>4</sup>

Economic voting theory argues that some citizens will respond to the waxing and waning of the economy by shifting their votes to reward or punish officeholders (Echegaray 2005; Lewis-Beck 1988). The proposition that economic conditions shape election outcomes in democratic countries is robust for studies using individual survey data (Lewis-Beck and Stegmaier 2000). By implication, economic hardship can be expected to increase overall electoral volatility by undermining the loyalties and support for the incumbent party and by increasing the opposition parties' votes. By contrast, in a better economic climate, one would expect that voting patterns for the existing parties would remain largely unchanged.

Empirical analyses of electoral volatility at the country level find inconsistent evidence about economic voting theory. Remmer's studies (1991, 1993) demon-

strate that economic performance has a significant impact on electoral volatility in Latin America. The evidence from advanced democracies also shows that economic performance matters for country-level electoral volatility (Bischoff 2013). However, recent analyses of new democracies in postcommunist Europe (Epperly 2011) and Africa (Ferree 2010) show that economic voting is not a crucial factor in explaining party system volatility.

One possible explanation for these inconsistent findings revolves around the level of analysis. Specifically, since economic voting theory suggests that national economic performance will affect the extent of vote switches between the incumbent party and opposition parties, it is more appropriate and necessary to test this argument at the party level. If the economic voting argument holds, it is expected that the presidential party should have lower electoral volatility when the economic performance is better because the voters tend to keep supporting the presidential party to maintain the status quo (Roberts and Wibbels 1999, 577). Conversely, the presidential party is expected to have a higher level of electoral volatility when the economy is in crisis.

In contrast, economic voting theory does not clearly suggest how the national economy influences the electoral performances of nonpresidential parties. In most Latin American countries, the constitutional designers empower the presidents and thus “free opposition legislators from direct responsibility in national policy issues” (Morgenstern et al. 2008, 174). As Mainwaring (1993, 221) indicates, “even though members of several parties often participate in cabinets, the parties are not responsible for the government.” It is possible that a higher level of electoral volatility for the presidential party leads to higher levels of electoral volatility for all opposition parties. However, the opposition parties’ volatility might not change much in a highly fragmented party system if the lost votes of the presidential party were evenly gained by every nonpresidential party. In this sense, the level of electoral volatility for nonpresidential parties can be high or low regardless of the economic performance. In short, I propose the following hypothesis:

*H3. The presidential party will have a lower level of electoral volatility when the national economic performance is strong.*

The second cross-level explanation relates to the interaction between a presidential party and institutional discontinuity. As the literature of rational choice institutionalism indicates, institutions matter because political actors’ behavior is driven mainly by a strategic calculus involving the limitations and opportunities that particular institutional or organizational settings offer (Hall and Taylor 1996). The persistence of institutions that regulate political competition helps parties to socialize their voters over time and upholds the legitimacy of a democratic regime. Therefore, a fundamental alteration or an irregular discontinuity in important political institutions is expected to have a “shock” effect on the equilibrium of elections (Roberts and Wibbels 1999).

Based on evidence from Latin American countries, Roberts and Wibbels (1999) and Madrid (2005a) find that the electoral dynamics of a party system are

greatly altered by the adoption of a new constitution, a significant enfranchisement, or irregular changes in the executive branch, such as a presidential “self-coup” (*autogolpe*) or a forced resignation of the president. Although these dramatic and irregular alterations of existing institutions are found to increase electoral volatility at the country level, it makes sense that such shocks should also influence party-level electoral volatility.

In particular, it is expected that such irregular institutional changes will increase the volatility of the presidential party to a greater extent. Recent political developments in Latin America suggest that this hypothesis is reasonable. For instance, in Ecuador, the adoption of a new constitution in 2008 helped the incumbent Alianza PAIS to increase its level of voter support in the 2009 election. In Peru, Alberto Fujimori’s self-coup in 1992 and the adoption of a new constitution in 1993 helped to dramatically increase votes for the presidential party Cambio 90 in the 1995 election. In contrast, irregular removal of presidents also leads to higher electoral volatility for the presidential party, but in a negative direction. The 2009 Honduran coup d’état with the removal of President Manuel Zelaya made his Partido Liberal de Honduras (PLH) suffer a significant loss in the election at the end of the year. Similarly, the resignation of Fujimori in Peru led to a fiasco for the governing Cambio 90-Nueva Mayoría in the 2001 election.

However, an irregular institutional alteration might increase the electoral volatility of not only the presidential party but also nonpresidential parties. This might make sense, but in the context of Latin American multiparty systems, how votes shift between the presidential party and the nonpresidential parties is unclear. While some nonpresidential parties might have a higher level of electoral volatility than others, the presidential party should have the highest level of electoral volatility among all the parties facing the shock of institutional discontinuity. Based on the discussion above, I propose the following hypothesis:

*H4. The presidential party will have a higher level of electoral volatility after irregular institutional discontinuity.*

### **Alternative Explanations of Party Volatility**

The empirical analysis in this study controls for a number of factors that are likely to affect party volatility. First is the size of a party. Previous studies have found that a party with a larger size tends to lose votes in the subsequent election, regardless of whether the party is in government or in the opposition (Hix and Marsh 2007, 501). The effect of party size on electoral volatility, however, is unclear. It is possible that a larger party should have a lower level of electoral volatility because it might have greater organizational capability to secure its supporters’ loyalty. However, smaller parties, especially those with a strong regional base, might also have low electoral volatility; this is because such parties are able to sustain their survival by securing a small but strong portion of the electorate over time.

At the country level, the analysis controls for party system fragmentation and ethnic fractionalization. First, according to Pedersen (1983), electoral volatility

increases with the number of parties in a system because having more parties suggests that the ideological difference between the parties is small, so that voters tend to switch votes from one party to another between elections. The hypothesis of party system fragmentation has been tested only at the country level in previous literature (Madrid 2005a; Roberts and Wibbels 1999; Tavits 2005), but it is also possible that a fragmented party system will increase electoral volatility at the party level.

Another factor that might explain electoral volatility is the presence of social cleavages. Existing theory suggests that stronger ethnic cleavages help stabilize party systems by providing quality representation of distinct ethnic groups and establishing strong linkages with them (Lipset and Rokkan 1967). However, as Madrid (2005a) argues, this expectation might not hold in Latin America, where most party systems have been composed principally of catch-all parties that have drawn support from a variety of social groups. In such contexts, electoral volatility tends to be higher, because minority ethnic groups are less likely to form strong partisan identities (Birnie and Van Cott 2007; Madrid 2005a).<sup>5</sup> In short, it is expected that parties in a highly ethnically fragmented social context will have higher levels of electoral volatility.

## MEASUREMENT AND DATA

The unit of analysis in this research is party-elections-country (e.g., the Partido dos Trabalhadores 1994–98 in Brazil). The dependent variable, party electoral volatility, is measured as the absolute value of the change of a party's vote share between two consecutive elections. In principle, the value of this variable ranges from 0 to 100, where higher numbers indicate a higher level of electoral volatility for the party.<sup>6</sup>

The data include 187 parties in the lower house elections of 18 Latin American countries from 1978 to 2012.<sup>7</sup> Most electoral data are compiled from Nohlen 2005 and official electoral results on the website of each country's electoral administrative body. For the countries that democratized in the 1980s or 1990s, only the elections after the first democratic election are included. Since Latin American countries have different timing of democratization and term length, the data structure of this analysis is unbalanced. Because most available election results lump small parties that received very few votes into an "other parties" category, I select the parties that obtained at least 1 percent of votes in the observational period and participated in at least two consecutive elections.

Presidential party is a dichotomous variable, measuring whether a party is the president's party or not before an election. A party is coded 1 if, at the time of the election, the party holds the presidency, and 0 otherwise. For a party that was founded before the year of the most recent democratic period, party age is measured as the number of years between the election year in which the party participated and the most recent inauguration year of a democratic period in the country.<sup>8</sup> For a party that was founded after the beginning of the most recent democratic period, party age is measured as the number of years between the election year in which the party partic-



ipated and the year when the party was founded. I consider a country as a democracy when it has a Polity IV score (Marshall and Jaggers 2011) greater than or equal to 6.<sup>9</sup>

Ideological distinctiveness is constructed using data from Baker and Greene 2011. This variable captures the extent to which a party is distinct in its ideological position from another party that has the nearest ideological position. To construct the ideological distinctiveness variable, I take the difference between the ideology score of a party and the ideology score of the nearest party. A higher value of the distinctiveness score indicates that the party is more ideologically distinct from other parties in the country. A zero value of the distinctiveness score indicates that a party has the same ideology score as another party.

To test the economic voting hypothesis, I use two economic indicators: GDP growth<sub>t-1</sub> and inflation<sub>t-1</sub>.<sup>10</sup> Both variables are lagged by one year to capture the short-term economic impact on volatility.<sup>11</sup> Inflation<sub>t-1</sub> is operationalized as the logged value of the inflation rate for the year before the election year.<sup>12</sup> To test whether the effects of economic factors are conditioned by whether a party holds the presidency, I include GDP growth<sub>t-1</sub>\*presidential party and inflation<sub>t-1</sub>\*presidential party in the model.

In addition, to test whether a shock of institutional alteration will affect the presidential party to a greater extent, I include two variables: institutional discontinuity and institutional discontinuity\*presidential party. I use the index constructed by Roberts and Wibbels (1999) to measure institutional discontinuity. The index ranges from 0 to 3, assigning one point to each of the following types of discontinuities: the adoption of a new constitution; an increase in voter turnout of more than 25 percent due to the enfranchisement of new voters; and an irregular change in executive authority, including a presidential *autogolpe*, a forced resignation of the president, the ouster of the president due to impeachment, or a failed coup d'état attempt when the president was temporarily ousted from the office.<sup>13</sup>

Finally, I control for one party-level variable and one country-level variable in the model.<sup>14</sup> Party size is measured as the vote share of the party in the previous election.<sup>15</sup> Party system fragmentation<sub>t-1</sub> is measured as the index of the effective number of parties (ENP; Laakso and Taagepera 1979), lagged by one election.<sup>16</sup> Ethnic fractionalization is measured as Fearon's ethnic fractionalization index (2003).

## ESTIMATION TECHNIQUES AND MODEL SPECIFICATION

I employ a hierarchical linear model (HLM) on my three-level data. Unlike the one-level model that has been employed in the previous literature on electoral volatility (Madrid 2005a; Roberts and Wibbels 1999; Tavits 2005), the HLM allows me to test particular hypotheses at appropriate levels. Moreover, multilevel models allow researchers to conduct different levels of analyses in a single model and to explore cross-level interaction effects (Gelman and Hill 2007; Steenbergen and Jones 2002).

In this study, the three-level model is specified as a level-1 submodel that describes different observations of volatility for a given party, which is composed of equations 1, 3, 4, and 5 below; a level-2 submodel that describes how the observations of volatility differ across parties, which is composed of equation 2; and a level-3 submodel that describes how these observations differ across countries, which is composed of equation 6. The three-level model is estimated by using restricted maximum likelihood estimation (REML). In contrast to full MLE estimation, REML takes into account the degrees of freedom consumed by estimation of the fixed effects by eliminating fixed effects from the likelihood function (Steenbergen and Jones 2002, 226). The formal equation of the full specified multilevel model can be specified as

$$Y_{tij} = \pi_{0ij} + \pi_{1ij}Age_{tij} + \pi_{2ij}Size_{tij} + \pi_{3ij}Pres_{tij} + \pi_{4ij}GDP_{tij} + \pi_{5ij}Infla_{tij} + \pi_{6ij}Insti_{tij} + \pi_{7ij}Pres_{tij} * GDP_{tij} + \pi_{8ij}Pres_{tij} * Infla_{tij} + \pi_{9ij}Pres_{tij} * Insti_{tij} + \pi_{10ij}ENP_{tij} + \varepsilon_{tij} \quad (1)$$

$$\pi_{0ij} = \beta_{00j} + \beta_{01j}Distin_{ij} + \zeta_{0ij} \quad (2)$$

$$\pi_{1ij} = \beta_{10j} + \zeta_{1ij} \quad (3)$$

$$\pi_{2ij} = \beta_{20j} + \zeta_{2ij} \quad (4)$$

$$\pi_{3ij} = \beta_{30j} + \zeta_{3ij} \quad (5)$$

$$\beta_{00j} = \gamma_{000} + \gamma_{001}Ethn_j + u_{00j} \quad (6)$$

where in equation (1), Pres, Age, Size, GDP, Infla, Insti, and ENP are time-varying covariates.<sup>17</sup>  $\pi_{0ij}$  is the regression coefficient that represents mean party volatility,  $\pi_{kij}$  are regression coefficients that link  $k^{th}$  (1, 2, 3, ..., 10) covariates to  $Y_{tij}$ , and  $\varepsilon_{tij}$  is a random error term for party  $i$  in country  $j$  at time  $t$ . ENP and Ethn are not interacted with Pres in equation 1 because I do not expect interaction effects of ENP and Pres or interaction effects of Ethn and Pres on party volatility. In equation 2,  $\beta_{00j}$  is the average party-level intercept in country  $j$ ;  $\beta_{01j}$  is the regression coefficient that links Distin, a time-invariant party-level covariate, to  $\pi_{0ij}$ ; and  $\zeta_{0ij}$  is the deviation, or residual, of the party's intercept from the predicted value. In equations 3, 4, and 5,  $\beta_{10j}$ ,  $\beta_{20j}$ , and  $\beta_{30j}$  are the slope for Age, Size, and Pres, respectively; and  $\zeta_{1ij}$ ,  $\zeta_{2ij}$ , and  $\zeta_{3ij}$  are the random error terms.<sup>18</sup> In equation 6,  $\gamma_{000}$  is the grand mean of party volatility;  $\gamma_{001}$  represents the regression coefficient that links Ethn, a time-invariant country-level covariate, to  $\beta_{00j}$ ; and  $u_{00j}$  is the random error term for country  $j$ . The error terms for all of the equations are assumed to be random and normally distributed.

Table 2. Multilevel Model of Party Electoral Volatility in Latin America

	Coefficient	Standard Error
Party-level Predictors		
Party Age ( $\beta_{10}$ )	-0.019	0.024
Party Size <sub>t-1</sub> ( $\beta_{20}$ )	0.173***	0.019
Presidential Party <sub>t-1</sub> ( $\beta_{30}$ )	1.865	1.195
Ideological Distinctiveness ( $\beta_{01}$ )	-0.342*	0.181
Country-level Predictors		
GDP Growth <sub>t-1</sub> ( $\pi_4$ )	0.136***	0.047
Inflation <sub>t-1</sub> ( $\pi_5$ )	-0.131	0.137
Institutional Discontinuity <sub>t-1</sub> ( $\pi_6$ )	0.901**	0.446
Party System Fragmentation <sub>t-1</sub> ( $\pi_{10}$ )	0.234*	0.130
Ethnic Fractionalization ( $\gamma_{001}$ )	2.724	3.470
Cross-level Predictors		
Presidential Party <sub>t-1</sub> *GDP Growth <sub>t-1</sub> ( $\pi_7$ )	-0.178	0.120
Presidential Party <sub>t-1</sub> *Inflation Rate <sub>t-1</sub> ( $\pi_8$ )	-0.416	0.329
Presidential Party <sub>t-1</sub> *Institutional Discontinuity <sub>t-1</sub> ( $\pi_9$ )	9.097***	1.101
Constant ( $\gamma_{000}$ )	0.720	1.774
Variance Components		
Level-3 Random Variance ( $\mu_{00j}$ )	2.609	0.616
Level-2 Random Variance ( $\zeta_{0ij}, \zeta_{1ij}, \zeta_{2ij}, \zeta_{3ij}$ )	0.046	0.017
Level-1 Random Variance ( $\epsilon_{ijj}$ )	4.305	0.133
Goodness-of-Fit		
Log Likelihood		-2071.565
AIC		4175.129
BIC		4248.061
Observations		705
Wald Chi <sup>2</sup> (12)		271.13
Prob > Chi <sup>2</sup>		0.000

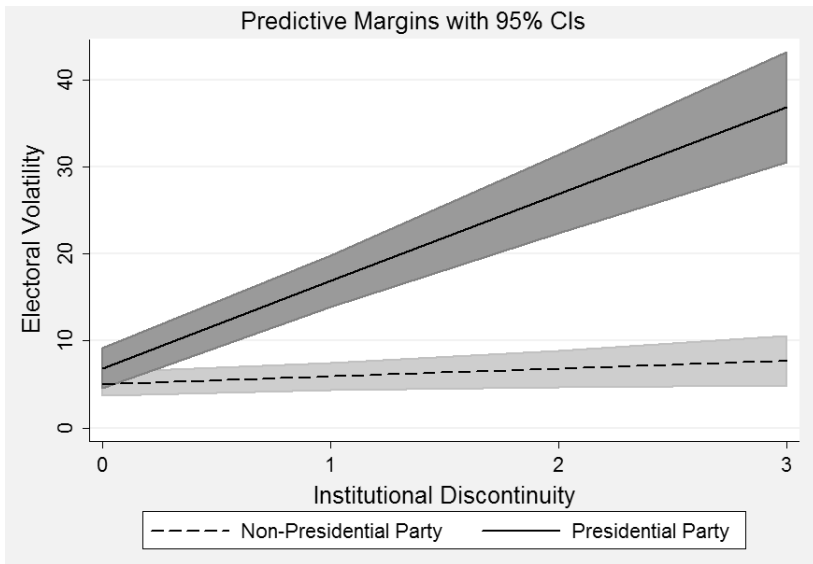
\*\*\* $p \leq 0.01$ , \*\* $p \leq 0.05$ , \* $p \leq 0.1$

## EMPIRICAL RESULTS

Table 2 displays the results of the hierarchical linear model with full specification described in equations 1 through 6. Ideological distinctiveness has a negative and statistically significant effect on party electoral volatility, suggesting that a party that has a more distinctive ideological position tends to have a more stable electoral performance. This finding indicates that the theory of ideological polarization and electoral volatility applies not only at the country level (Madrid 2005a; Roberts and Wibbels 1999; Tavits 2005) but also at the party level, which is a more appropriate level for empirical tests.

Moreover, contrary to the theoretical expectation, the effect of party age is statistically insignificant, showing that a party might have higher or lower volatility regardless of its age. This finding does not necessarily challenge the evidence from

Figure 1. Conditional Effects of Institutional Discontinuity on Party Electoral Volatility

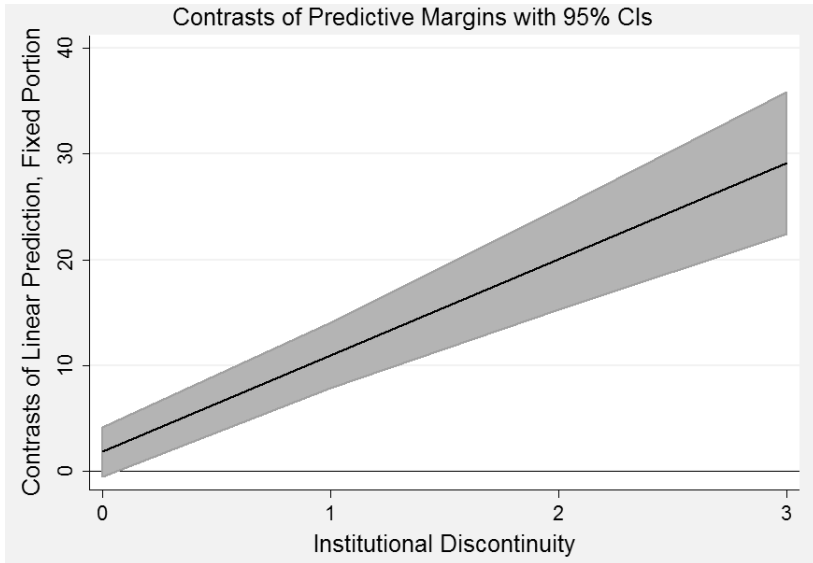


previous work that party age matters for reducing electoral volatility at the country level (e.g., Roberts and Wibbels 1999), but one important implication of this finding is that the theory of party institutionalization might not travel well across different levels of analysis.

For the economic voting hypothesis, the results show that both  $\text{inflation}_{t-1} * \text{presidential party}$  and  $\text{inflation}_{t-1}$  do not attain statistical significance, indicating that a party might either have a more volatile or stable electoral performance regardless of a country's inflation rate.  $\text{GDP growth}_{t-1}$  has a positive and significant effect, but this result should not be interpreted as an unconditional marginal effect of  $\text{GDP growth}_{t-1}$  for all parties. Instead, it suggests that a better economic performance increases the level of electoral volatility when presidential party equals zero. Substantively, with 1 percent increase in GDP growth, a nonpresidential party will have a score 0.14 units higher. The coefficient for the interaction term  $\text{GDP growth}_{t-1} * \text{presidential party}$  does not reach statistical significance and thus indicates a lack of evidence that the effect of GDP growth on party volatility differs for presidential parties and nonpresidential parties. In short, these results do not support the economic voting hypothesis of party electoral volatility.

The coefficient for  $\text{institutional discontinuity} * \text{presidential party}$  is positive and statistically significant. This finding suggests that a presidential party will have higher electoral volatility when there is an institutional discontinuity. Substantively, the marginal effect estimation shows that when a country has experienced one institutional discontinuity, a presidential party will have a volatility score 10.0 units

Figure 2. Difference Between Presidential and Nonpresidential Parties in Electoral Volatility by Institutional Discontinuity



higher, while a nonpresidential party will have a volatility score 0.9 units higher. Figure 1 presents the conditional effects of institutional discontinuity on electoral volatility for presidential and nonpresidential parties.<sup>19</sup> Figure 2 shows that the difference between presidential and nonpresidential parties in electoral volatility is not statistically significant when there is no institutional discontinuity, but such difference becomes statistically significant when there is one or more institutional discontinuity in the country. Overall, these findings show that institutional alteration shocks affect electoral volatility for the presidential party in particular rather than for every party in the country.

Among the control variables, the results show that larger parties have higher levels of electoral volatility than smaller parties. Party system fragmentation has a positive and significant effect on party volatility. In contrast, ethnic fractionalization bears little relation to party volatility in my sample, suggesting that while it helps explain country-level volatility, as several previous studies have shown (e.g., Madrid 2005a; Tavits 2005), it might not be an important explanatory factor for analyzing party-level volatility.

### Additional Analysis of Vote Change

One limitation of the electoral volatility analysis is that its measure does not take into account the direction of vote change. In other words, a higher level of volatility only indicates that a party gains or loses votes to a greater extent. This limitation might impede a better understanding of party development. For instance, the insignificant results of economic variables in table 2 might not totally contradict economic voting theory. In fact, while economic voting theory suggests that the national economy matters for explaining the presidential party's electoral performance, it does not clearly suggest whether the effect will be significantly large or small.

I therefore conducted another multilevel analysis using the relative change of a party's vote share between elections as the dependent variable.<sup>20</sup> As table 3 demonstrates, the multiplicative term  $\text{presidential party}_{t-1} * \text{gdp growth}_{t-1}$  has a positive and significant coefficient. It indicates that a positive change in GDP growth significantly increases the vote share of the presidential party. In contrast,  $\text{GDP growth}_{t-1}$  exhibits statistical insignificance. Considering these findings and the results in table 2 jointly, the evidence shows that a better economy might not reduce a presidential party's electoral volatility, but it can help the presidential party gain more votes than nonpresidential parties. Moreover, a better economy increases the levels of electoral volatility for nonpresidential parties, but the vote change can be positive or negative. Another noticeable finding in table 3 is that  $\text{presidential party}_{t-1} * \text{institutional discontinuity}_{t-1}$  does not attain statistical significance. This finding, as well as the results in table 2, suggests that an institutional alteration shock greatly increases the electoral volatility of the presidential party, but the presidential party might gain or lose votes after the shock.

While table 2 shows that ideological distinctiveness has a statistically significant impact on reducing electoral volatility, table 3 illustrates that this variable has a positive and statistically significant effect on party vote change. These findings suggest that compared to parties that lack ideological distinctiveness, a party that holds a more distinctive ideological position not only has a stabler electoral performance but also tends to gain more votes from one election to the next. Last, the effects of party size are negative and statistically significant in table 3. Considering the results of table 2 jointly, the evidence suggests that a larger party generally might have a higher level of electoral volatility and tend to lose votes between elections.

### Robustness Checks

Beyond the results already presented, I conducted extensive sensitivity analyses to check the robustness of results in table 2.<sup>21</sup> First, I reconstructed my dependent variable using Gherghina's (2012) measure of party-level electoral volatility, which is calculated as the absolute value of a party's vote share change between the two elections divided by the sum of this party's vote shares gained in the two elections. Using this variable to re-estimate my model yields results largely similar to those shown in table 2.

Table 3. Multilevel Model of Party Vote Change in Latin America

	Coefficient	Standard Error
Party-level Predictors		
Party Age ( $\beta_{10}$ )	-0.109***	0.037
Party Size <sub>t-1</sub> ( $\beta_{20}$ )	-0.225***	0.032
Presidential Party <sub>t-1</sub> ( $\beta_{30}$ )	-3.058	1.869
Ideological Distinctiveness ( $\beta_{01}$ )	1.355***	0.268
Country-level Predictors		
GDP Growth <sub>t-1</sub> ( $\pi_4$ )	-0.085	0.070
Inflation <sub>t-1</sub> ( $\pi_5$ )	-0.057	0.185
Institutional Discontinuity <sub>t-1</sub> ( $\pi_6$ )	0.093	0.646
Party System Fragmentation <sub>t-1</sub> ( $\pi_{10}$ )	-0.021	0.143
Ethnic Fractionalization ( $\gamma_{001}$ )	0.734	1.981
Cross-level Predictors		
Presidential Party <sub>t-1</sub> *GDP Growth <sub>t-1</sub> ( $\pi_7$ )	0.644***	0.188
Presidential Party <sub>t-1</sub> *Inflation Rate <sub>t-1</sub> ( $\pi_8$ )	-0.239	0.514
Presidential Party <sub>t-1</sub> *Institutional Discontinuity <sub>t-1</sub> ( $\pi_9$ )	-1.295	1.757
Constant ( $\gamma_{000}$ )	2.751**	1.234
Variance Components		
Level-3 Random Variance ( $\mu_{00j}$ )	5.12e-10	—
Level-2 Random Variance ( $\zeta_{0ij}$ , $\zeta_{1ij}$ , $\zeta_{2ij}$ , $\zeta_{3ij}$ )	0.109	0.022
Level-1 Random Variance ( $\epsilon_{ijj}$ )	6.566	0.205
Goodness-of-Fit		
Log Likelihood		-2366.879
AIC		4763.757
BIC		4832.13
Observations		705
Wald Chi <sup>2</sup> (12)		110.82
Prob > Chi <sup>2</sup>		0.000

\*\*\*p ≤ 0.01, \*\*p ≤ 0.05, \*p ≤ 0.1

Second, to test whether the results are driven by a particular cut-off point of selection criteria on party data, I re-estimated the hierarchical model using a different sample of parties, which included only the parties that obtained an average of 5 percent of vote shares in the observational period. The re-estimated results of these models are substantively equivalent to those presented in table 2.

My third robustness check was to use a different model specification by including unit fixed effects. It is possible that the relationship between party volatility and other independent variables might be a result of their joint relationship to some party-level variables that could not be included in the analyses. If we assume that the unobserved party-level factors are stable over time, we may control for their potential biasing effect by estimating models with fixed effects for each party's mean volatility intercepts. Such a model is equivalent to a model produced through the inclusion of dummy variables for all but one party in the dataset.

I estimated the party-level fixed-effects model using the Stata 12 *xtregar* module, which includes first-order autocorrelated disturbances. Results are similar to those presented in table 2. I also estimated a country-level fixed-effects model by including country dummies, and the results remain largely unchanged. To summarize, the empirical findings are robust across different samples of parties and different model specifications.

## CONCLUSIONS

High electoral volatility often characterizes electoral politics and plagues democratic stability in Latin America. Although previous studies have provided explanations for country-level volatility, few studies have attempted to analyze electoral volatility at the party level. This study contributes to the literature by “bringing the parties back” to the research agenda of electoral volatility. Testing explanations of electoral volatility at the party level, the empirical results suggest a more nuanced perspective for understanding party development in Latin America.

Considering the difference between the presidential party and nonpresidential parties, the analyses show a stronger effect from an institutional discontinuity shock for increasing a presidential party’s electoral volatility. Moreover, the empirical results show that a better economic performance does not significantly influence a presidential party’s electoral volatility. At the party level, the analysis finds that while ideological distinctiveness has a statistically significant effect on reducing party volatility, party age is not a statistically significant factor for explaining electoral volatility.

This study also demonstrates that some variables that have great explanatory power for analyzing country-level electoral volatility are not necessarily useful for explaining party-level electoral volatility. It finds that individual parties tend to have higher electoral volatility in a more fragmented party system. However, while various previous studies have found that ethnic heterogeneity has significant effects on the electoral volatility of Latin American countries (e.g., Madrid 2005a), the effect of this variable is modest for explaining party volatility in Latin America. The insignificance of ethnic fractionalization on party volatility suggests an important caveat regarding the ecological fallacy for the research on electoral volatility.

While this study sheds light on the patterns of party development in Latin America, its exploration of the dynamics of party politics does not go far enough. One next step for future studies is to construct an appropriate research design to analyze country-level and party-level volatility simultaneously, which might provide more insight about the relative importance of the same explanation (e.g., age of parties) concerning electoral volatility at different levels. Another research agenda is to explore how other party-specific features might affect electoral volatility. For instance, this study has analyzed certain macroconditions under which a presidential party might have higher or lower electoral volatility, but it will be interesting to analyze what party features (e.g., ideology) could increase or reduce volatility for a presidential party. Last but not least, it will be promising for future studies to conduct comparative analyses on party volatility in other regional contexts.



## NOTES

I thank Steven Finkel, Scott Morgenstern, Aníbal Pérez-Liñán, Lawrence Zigerell, David Barker, and the journal's anonymous referees for their helpful comments. All remaining errors are my responsibility. Summary statistics on the variables used for the analyses and the party-elections-country observations included in the analyses can be found in the author's online appendix, [www.yenpinsu.com](http://www.yenpinsu.com).

1. See Mainwaring and Zoco 2007 for an alternative explanation of the relationship between the age of a party system and the level of party system volatility.

2. By contrast, Mainwaring and Zoco (2007) and Roberts (2013) find no evidence that electoral volatility declines over time.

3. I thank an anonymous reviewer for suggesting a better operationalization to form the hypothesis and construct the variable for ideological distinctiveness.

4. Notice that I do not particularly take coalition politics into consideration for the analyses. I acknowledge that coalition politics are common in some Latin American countries (Alemán and Tsebelis 2011; Amorim Neto 2006). However, since the presidential party is generally more identifiable than nonpresidential parties in the context of Latin America, this study categorizes parties into the presidential party and nonpresidential party for reasons of simplicity.

5. Madrid's other studies (2005b, 2005c) have provided a more nuanced argument about ethnic politics and electoral volatility. Specifically, Madrid 2005c shows that the presence of a significant indigenous party helps reduce party system fragmentation in a region with a large indigenous population, and Madrid 2005b contends that the presence of a significant indigenous party has the potential to reduce electoral volatility.

6. The value of this variable ranges from 0 to 38.7 and has a mean of 4.8 and a standard deviation of 5.8. This suggests that the distribution of this variable has a large right tail. I take a natural log to transform this variable, use it to estimate the model, and find that the results are substantively similar to those presented in table 2. See the online appendix for the re-estimated results.

7. I use party coalition instead of an individual party as the unit of analysis for Chile, Mexico, and the Dominican Republic. For Ecuador, I follow Madrid (2005a), using the provincial deputy election results. I rely on the results of *votos en plancha* (votes for an entire list) for the 2002 and 2006 elections, and I rely on the results of *votación consolidada* (vote consolidation) for the 2009 election in Ecuador. For Guatemala and Nicaragua, I use the district-level electoral results. For Mexico, I rely on the single-member–district electoral results. For Bolivia and Venezuela, I rely on the two countries' PR votes.

8. This operationalization is certainly not perfect. One potential problem is that in some countries, there are parties that were formally established or registered before the most recent inauguration year of democracy. However, this operationalization can be justified in that the analysis of electoral volatility is meaningful only in the democratic context. Given that a democratic breakdown impedes party system development, the inauguration of a new democratic era suggests as a starting point that every party must learn to compete in a democratic way, regardless of the party's age. Without considering the negative impact of authoritarian rule or democratic breakdown, I re-estimated the empirical model using the "real" party age as an independent variable (the information about the founding year of a party is gathered from either the party's official website or from the website of a country's electoral authority). The results remain largely unchanged.

9. The Polity IV score ranges from -10 to 10 based on the autocracy-democracy scale. Since Peru had a democratic breakdown from 1992 to 2000, my data consider Peru (I) from 1980 to 1990 and Peru (II) from 2000 to 2011. The cut-off point of 6 follows several studies in the political science literature (e.g., Mansfield et al. 2000). Using a higher cut-off point (e.g., 7) to estimate the model yields largely similar results.

10. The economic data are from World Bank 2011.

11. I do not use unemployment rate as an economic indicator because “official unemployment rates in most Latin American societies mask much higher levels of structural underemployment, and they are not a reliable indicator of short-term fluctuations in economic performance” (Roberts and Wibbels 1999, 580).

12. Following Kurtz and Brooks (2008), I assign 1 to the observations with an inflation rate lower than 1. Accordingly, the logged inflation rate for these cases will be zero.

13. The cases scored as institutional discontinuities in my dataset are as follows. New constitutions were adopted before elections in Bolivia 2009, Colombia 1991, Ecuador 1984 and 2009, and Venezuela 2000. Increases in electoral turnout of more than 25 percent occurred in Ecuador 1984 and in Peru 1985 and 2000. Irregular changes in executive authority preceded the elections in Argentina 2003; Brazil 1994; Ecuador 1998, 2002, and 2006; Guatemala 1994; Honduras 2009; Nicaragua 2011; Paraguay 2003; Peru 2000; and Venezuela 1993 and 2005.

14. An anonymous reviewer mentioned that the patterns of party electoral volatility might differ when the legislative elections are held with or without the presidential elections. I coded a dummy variable for concurrent election and included it in the model. The results remain largely unchanged, and this variable does not attain statistical significance.

15. The measure of party size is not straightforward for some cases. First, I aggregate the vote shares of all member parties in a coalition as the size of the party coalition for Chile. Second, the size of the PJ in Argentina is calculated as the sum of the vote shares of all Peronist parties. Third, party change (e.g., party split, merger, and name change) make the use of electoral results complicated. My rule for dealing with this issue is as follows. First, when a party changed its name but had an obvious continuity with a previous party, I consider it as being the same organization. Second, if some parties competed in election T1 as separate parties but then merged for election T2, the parties were seen as separate parties in election T2, but the vote share assigned to each party was the vote share of the coalition divided by the number of parties in the merged coalition. This rule applies to the calculation of member parties' vote shares for the coalitions in Bolivia (the coalition of the ADN and the MIR in 1993), Peru (the coalition of AP and PPC in 1990, the coalition of AP and Somos Peru and the alliance of PPC and PSN in 2006, and the coalition of AP, PP, and Somos Peru and the alliance of PSN and UPP in 2011), and Guatemala (the coalition of URNG and ANN and the coalition of UNE and GANA in 2011).

16. The ENP is calculated as the inverse of the sum of squares of each party's vote share in a country. Data for ENP are from Gallagher and Mitchell 2008 and my own calculation.

17. GDP, Infla, Insti, and ENP cannot be included in the level-3 submodel (equation 6) because they are time-varying. For instance, each of the parties in a country is assigned the same value for ENP in a given election year, but the value for ENP changes from one election to the next.

18. I set equal variances for random effects and set all covariances at zero by specifying the *cov(identify)* option for my Stata *xtmixed* model. In other words, the random variances  $\zeta_{0ij}$ ,  $\zeta_{1ij}$ ,  $\zeta_{2ij}$ , and  $\zeta_{3ij}$  are set equal. In general, it is preferable to specify the *cov(unstructured)* option for the model, which allows all variances and covariances to be distinctly estimated. Unfortunately, my model fails to converge if I specify the *cov(unstructured)* option.

19. I used two Stata 12 modules, margins and marginsplot, to estimate the predicted party volatility and make the graphs.

20. I thank an anonymous reviewer for the suggestion of conducting this analysis. Using the vote share of a party as the dependent variable yields largely similar results.

21. The results for the robustness checks are available from the author on request.

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