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Rules for Party Subsidies and Electoral Volatility in Latin America

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Abstract

Prior research has argued that public subsidies for parties matter for explaining electoral volatility, but the empirical results have been inconclusive. This article addresses this puzzle by examining how different rules for direct state funding affect different types of electoral volatility, using data from lower chamber elections in eighteen Latin American countries from 1978 through 2014. Focusing on volatility caused by new party entry and old party exit (party replacement volatility) and volatility caused by vote switching among existing parties (stable party volatility), it finds that countries with less strict eligibility thresholds for party subsidies tend to have lower levels of party replacement volatility. However, the empirical analysis does not provide sufficient evidence that the eligibility thresholds for party subsidies matter for predicting stable party volatility. Overall, this article suggests that less strict eligibility thresholds for party subsidies help produce stable party systems by reducing risks associated with party replacement volatility.

Keywords: party system; public subsidies; party laws; electoral volatility; Latin America

Resumen

Estudios previos han sostenido que los subsidios públicos para los partidos políticos son importantes para explicar la volatilidad electoral, pero los resultados empíricos no han sido concluyentes. Este artículo hace frente a este rompecabezas examinando cómo las diferentes reglas para los subsidios de partidos afectan los diferentes tipos de volatilidad electoral, utilizando datos de elecciones de la cámara de diputados en dieciocho países latinoamericanos desde 1978 hasta 2014. Enfocándose en la volatilidad causada por la entrada de nuevos partidos y la salida de los antiguos partidos (volatilidad de reemplazo de partidos) y la volatilidad causada por el cambio de votos entre los partidos existentes (volatilidad de partido estable), este artículo demuestra que los países con umbrales de elegibilidad menos estrictos para los subsidios de partidos tienden a tener niveles más bajos de volatilidad de reemplazo de partidos. Sin embargo, el análisis empírico no proporciona pruebas suficientes que indiquen que los umbrales de elegibilidad para los subsidios de partidos sean importantes para predecir la volatilidad de partido estable. En general, este artículo sugiere que los umbrales de elegibilidad menos estrictos para los subsidios de partidos ayudan a producir sistemas de partidos estables al reducir los riesgos asociados con la volatilidad de reemplazo de partidos.

Palabras clave: sistema de partidos; subsidios públicos; leyes de partidos; volatilidad electoral; América Latína

The institutionalization of party systems matters for the quality of democratic representation and political accountability (Morgan 2018; Powell 2000; Schleiter and Voznaya 2018). One important indicator of party system institutionalization is electoral volatility (Mainwaring 2018), namely, the net vote share that shifts between parties from one election to the next. Scholars have argued that party systems with a low electoral volatility tend to help institutionalize political uncertainty (Przeworski and Sprague 1986) and facilitate programmatic representation (Mainwaring and Torcal 2006). In contrast, party systems with high electoral volatility tend to produce populist leaders (Weyland 1999, 384) and discourage incumbent parties from making long-term policy commitments (Mainwaring and Scully 1995).

What explains the variation in electoral volatility across different countries? Previous studies have examined the effects of political institutions (Roberts and Wibbels 1999), national economic performance (Remmer 1993), and ethnic cleavages (Madrid 2005). Conventional wisdom holds that public subsidies for parties have a considerable influence on party system development in democracies (Bolleyer 2013; Casal Bértoa and Spirova 2019; Katz and Mair 1995; Van Biezen 2004; Van Biezen and Kopecký 2001). Casas-Zamora's (2005) study of advanced democracies shows that countries that provide direct state funding (DSF) for parties have a higher level of electoral volatility.[1] However, focusing on new democracies, Birnir (2005) finds that electoral volatility tends to be lower in a country where DSF for parties is available. The mixed findings suggest that the link between public funding and electoral volatility is contested.

To address the puzzle about the effect of DSF on electoral volatility, I contend that it is necessary to decompose the concept of electoral volatility into "party replacement volatility" and "stable party volatility" (Cohen, Salles Kobilanski, and Zechmeister 2018), in which the former is caused by the entry and exit of parties from the party system and the latter is caused by vote shifts among established parties. Moreover, it is also necessary to differentiate rules for public subsidies by eligibility thresholds and to test how different rules affect different types of electoral volatility.

In this article, I argue that countries with less strict eligibility thresholds for DSF enhance the survival of most existing parties and prevent new parties from achieving greater success. Accordingly, I test hypotheses that suggest that countries with less strict eligibility thresholds for DSF tend to have lower levels of party replacement volatility and stable party volatility, compared to countries that provide no public funding and compared to countries that have stricter eligibility thresholds.

Using data from lower chamber elections in eighteen Latin American countries from 1978 through 2014, the empirical analysis shows that less strict eligibility thresholds for DSF correlate with lower levels of party replacement volatility. But the analysis does not provide statistically significant evidence that the provision of DSF, regardless of the level of barrier, associates with stable party volatility. The study is distinctive in that it provides a comprehensive dataset on DSF and tests explanations about different rules for DSF on different types of electoral volatility. It confirms the crucial role of public subsidies for party development in new democracies; more importantly, it contributes to the literature by presenting evidence that less strict eligibility thresholds for DSF help decrease party replacement volatility and reduce the risks associated with party replacement volatility, such as weakening of electoral accountability and a sudden rise of antiestablishment parties.

[1] I focus on studying state funding, instead of private funding, for two reasons. First, this research aims to join the debates regarding public funding for party development. Second, cross-national time-series data for private funding rules for Latin American countries are not available.

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Theoretical perspectives

Why and how state funding for parties matters

Stable and well-functioning party systems are essential for the functioning of democracy (Mainwaring and Torcal 2006). One important institutional factor related to party system development is public funding for political parties. Why does such funding matter? It facilitates the integrative links between the state and civil society (Pierre, Svåsand, and Widfeldt 2000, 4); it helps parties lower the cost of maintaining a substantial staff and institutionalized expertise (Bruhn 2016, 218); and it helps parties socialize their supporters into party rules (Bolleyer and Ruth 2018, 291). In countries where no adequate public subsidies are provided for parties, high turnover among parties is more likely to occur because the high levels of financial uncertainty are likely to jeopardize parties' organizational sustenance (Birnir 2005, 919–921; Booth and Robbins 2010, 632).

While public funding might help parties survive, some studies posit that it might undermine the quality of democratic representation. In particular, Katz and Mair's (1995) "cartel party" thesis suggests that, in many Western European countries, existing parties collude to establish rules that allocate public money to themselves. As a result, public funding is used to legally enhance major parties' dominant position in the electoral process (Molenaar 2014). Moreover, such funding makes existing parties increasingly dependent on the state (Van Biezen and Kopecký 2001), alienates the rank-and-file membership (Bruhn 2019), and makes the party organization increasingly centralized (Pierre, Svåsand, and Widfeldt 2000, 3).

Many recent studies have examined the role of public funding for party system institutionalization (Booth and Robbins 2010; Bruhn 2016; Sanches 2018). Using the level of electoral volatility (i.e., the Pedersen Index)[2] as an indicator of party system institutionalization, Casas-Zamora's (2005, 44–45) analysis of advanced democracies showed that the introduction of DSF increases electoral volatility.[3] In contrast, focusing on seventeen new democracies in Europe, Birnir's (2005) empirical analysis demonstrates that electoral volatility tends to be lower in a country where DSF is available. Unlike the two studies mentioned above, Birnir's (2010) analysis of Western European democracies does not provide sufficient evidence that DSF is associated with electoral volatility.

The discussion above suggests that the evidence for the effects of DSF on electoral volatility is inconclusive. One important point that needs to be reexamined is the measure of electoral volatility. While the Pedersen Index is a useful indicator that captures overall support changes in a party system, it masks different patterns of electoral change. Specifically, recent studies follow the ideas of Rose and Munro (2003) and Birch (2003) to disentangle total electoral volatility into two subtypes of volatility: volatility due to the entry and exit of parties, and volatility that stems from vote shifts among existing parties. These two subtypes of volatility match with Powell and Tucker's (2014) "Type A volatility" and "Type B volatility" and Cohen, Salles Kobilanski, and Zechmeister's (2018) "party replacement volatility" and "stable party volatility."[4]

[2] The Pedersen Index, calculated by halving the sum of the absolute change in vote shares (or seats) of all parties from one election to the next (Pedersen 1979), has been commonly used as an indicator for party system institutionalization (Mainwaring and Torcal 2006). See Casal Bértoa, Deegan-Krause, and Haughton (2017) for a critical discussion about electoral volatility measures.

[3] In addition to DSF, there are two other categories of party subsidies: indirect state funding (e.g., free media access) and specific state funding (e.g., subsidies for caucuses in the legislature). As Casas-Zamora and Zovatto (2016, 28–29) contend, DSF is the most important of the three categories. Following Birnir (2005) and Casas-Zamora (2005), this article exclusively focuses on analyzing the effects of rules for DSF.

[4] Using different measurement methods, Birch (2003) distinguishes "party replacement" and "electoral volatility," and Mainwaring, Gervasoni, and España-Nájera (2017) distinguish "extra-system volatility" and "within-system volatility."

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Substantively, different types of party volatility matter differently. Stable party volatility indicates a "healthy component of representative democracy" because power reallocation between parties over time is a relevant part of a democratic regime (Powell and Tucker 2014, 124). In contrast, party replacement volatility is associated with party system instability that might pose challenges to the democratic process (Powell and Tucker 2014, 124). A higher level of party replacement indicates that many established parties lose support and eventually exit the party system and that new parties are gaining greater support, which suggests a move toward party system dealignment due to the decline of voters' partisan attachments, politicization of new issues, or sudden rise of anti-establishment parties.

Methodologically, it is important to clarify whether the total electoral volatility is mainly driven by one of the two types of volatility, or by both (Cohen, Salles Kobilanski, and Zechmeister 2018). Birnir (2005) and Casas-Zamora (2005) examine the relationship between DSF and total volatility, but their proposed hypotheses seem to be derived from different types of volatility. Casas-Zamora (2005, 43–45) argues that DSF increases volatility because voters tend to switch their votes among existing minor parties; therefore, it is likely that Casas-Zamora's (2005) hypothesis is about stable party volatility. Birnir (2005, 918–919) contends that countries that provide no DSF tend to have higher volatility because minor parties are more likely to exit the party system; therefore, it is likely that Birnir's hypothesis focuses on party replacement volatility. In short, the research design of these two studies might be problematic because they use total volatility as the dependent variable to test hypotheses about a particular subtype of volatility.

Rules for direct state funding, party survival, and different types of electoral volatility

To better assess the effect of DSF on electoral volatility, it is necessary to examine party replacement volatility separately from stable party volatility. My main argument suggests that DSF matters for reducing party replacement volatility. The theoretical link between DSF and party replacement volatility pertains to the survival of established parties. DSF can be considered as a kind of "public venture capital" for established parties (Birnir 2005), and it is particularly important in countries where private funds are scarce and party membership fees are not reliable financial sources for parties (Bruhn 2019). Casal Bértoa (2017, 696) argues that DSF not only helps foster the continuity of existing parties but also discourages new party entries, and consequently it encourages the stability of the competition structure in the party system.

Eligibility thresholds for DSF determine the number of parties that are able to survive,[5] which in turn affects electoral volatility. A less strict eligibility threshold for DSF might reduce party replacement volatility through two mechanisms. First, a less strict eligibility threshold for DSF increases the number of parties eligible for DSF, which in turn helps more parties survive. When many established parties are entitled to receive DSF, they have both the incentives and the means to invest in building a routinized infrastructure (Bolleyer and Ruth 2018). To be qualified for DSF, parties are often required to be formally established, maintain detailed information about party officials and members, organize locally, and submit regular financial and work reports (Bruhn 2016, 221). DSF provides predictable financial support for parties to hire full-time professional staff to tackle these tasks for routinizing party organization, which helps parties develop strong internal organization and campaign effectively.

Second, it is possible that, when there are numerous established parties in the party system, new parties are less likely to gain notable electoral success. Tavits (2008, 121)

[5] The present study mainly focuses on the eligibility thresholds for DSF, but it is noteworthy that the actual amount of available DSF varies greatly by context (see Bruhn 2016, 223).

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contends that, while poor government performance makes it more likely that discontented voters support the opposition, "when most of the existing parties have had a chance to serve in government, voters may reject the opposition, because they were not satisfied with the performance of the opposition parties when these parties had a chance to serve in government." This argument suggests that voters tend to consider existing parties that do not have governing experience as viable alternatives for voicing voters' disapproval with the government, and when such parties are few, voters might turn to support new parties. Tavits's (2008) analysis supports this theoretical expectation in a different way, showing that the vote shares for new parties tend to decrease when a country has more existing parties without governing experience.

In my dataset, Brazil is a typical case in which a less strict eligibility threshold for DSF correlates with low party replacement volatility. In 1995, Brazil introduced a highly generous party-financing system in which the total amount of party subsidies tripled (Samuels and Zucco 2016, 344), and many Brazilian parties have used DSF to strengthen their party organization since then (Bruhn 2016, 233). In 2007, DSF provided 88.3 percent of the financial resources for the Brazilian Republican Party (PRB), a party that gained only one seat in the 2006 lower chamber election, and the party distributed 30 percent of its total funding to subnational party organizations (Ribeiro 2009, 39-41). In 2012, DSF for registered parties was US$178 million (Ribeiro 2014, 94), and each of the nine largest parties that competed in the 2010 election had a local party office (directories or provisional committees) in more than 70 percent of the country's 5,565 municipalities (Ribeiro 2013, 252). Thirty parties participated in the 1998 general election, and twenty-five of them participated in every election from 1998 through 2014; moreover, the average vote share for new parties was merely 2.9 percent during this period.

The discussion above suggests that countries with less strict eligibility thresholds for DSF tend to have a lower level of party replacement volatility. A less strict eligibility threshold for DSF not only helps the survival of many minor parties but also discourages voters from voting for new parties when the country has many established parties without governing experience, which are seen as viable alternatives if the voters are disappointed with the government's performance. In short, a less strict eligibility threshold for DSF might make existing parties less likely to exit the party system and make new parties less likely to gain notable electoral support. Accordingly, I propose the first testable hypothesis:

> H1: A country with a less strict eligibility threshold for DSF tends to have a lower level of party replacement volatility.

Moreover, a less strict eligibility threshold for DSF enables many parties to use the subsidies to "invest in strong ties to social organizations and civil society, holding membership drives, and building an activist base" (Bruhn 2016, 231; see also Casal Bértoa 2017). These efforts might contribute to developing a support base that helps the party have stable electoral performance over time. For instance, from 1996 to 2012, 57 percent of the Brazil's Workers' Party (PT) funding came from DSF (Ribeiro 2014, 95), which was used for expanding local-level organization, recruiting new party members, and creating participation channels for party members (Samuels and Zucco 2016). In 2007, 94 percent of the Brazilian Democratic Movement's (PMDB) funding came from DSF, and the party distributed 56 percent of its total funding to subnational party organizations (Ribeiro 2009, 39–41). In short, a less strict eligibility threshold for DSF is expected to reduce stable party volatility. Accordingly, the second hypothesis is:

> H2: A country with a less strict eligibility threshold for DSF tends to have a lower level of stable party volatility.

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Rules for direct state funding in Latin America

One contribution of this article to existing work on political institutions in Latin America is to present a comprehensive dataset on DSF. Uruguay (1928) and Costa Rica (1956) are the pioneers in adopting DSF. Brazil (1971), Nicaragua (1974), and Ecuador (1978) introduced DSF in the 1970s. Honduras (1981), El Salvador (1983), Guatemala (1985), Colombia (1985), Paraguay (1990), and Panama (1997) have continued to provide DSF since the introduction of their first party finance regulations. Some Latin American countries introduced indirect public subsidies and then introduced DSF, including Argentina (1961), Mexico (1987), and Chile (2003) (Casas-Zamora and Zovatto 2016, 93). In the Dominican Republic, Electoral Law 5884 permits parties to receive funding from the private sector only, and the country did not introduce DSF for parties until Law 275–97 was passed in 1997 (Cueto 2011).

In Peru, indirect public funding was introduced in 1966, and DSF for parties was introduced in 2003 in Law 28094. The third Transitory Provision of the Law stipulates that DSF would be applied as of January 2007 under the discretion of the government, but in fact DSF was not provided until June 2017 (ONPE 2017). Bolivia and Venezuela are the only two Latin America countries that recently reversed the trend of cartelizing use of party finance laws. Bolivia introduced DSF in 1997 but it was eliminated in 2008. In Venezuela, DSF was introduced in 1973, but the 1999 Constitution prohibits parties from receiving such funding (Casas-Zamora and Zovatto 2016, 93).

For countries that provide DSF, parties must pass a particular eligibility threshold based on vote percentage or representation in the lower chamber. In most cases, the threshold coincides with the threshold for keeping a party's legal personality; in other words, as long as a party is able to keep its legal personality, it is eligible to receive DSF.[6] As Table 1 shows, the eligibility threshold varies across countries and time. The less strict thresholds (< 1%) allow most of the registered parties to receive DSF. In Argentina (1985–) and Brazil (1971–), all registered parties that run in elections are eligible to receive DSF, and the requirement for keeping party registry is not strict. In both countries, the laws do not require parties to pass a specific vote percentage threshold in the previous election for keeping party registry, and thus I coded their rules for DSF as less strict.

In El Salvador (1988–1991), Honduras (1981–1985), Nicaragua (1996), and Uruguay (1954–), the vote percentage threshold for keeping the legal personality of a party is less than 1 percent. In the Dominican Republic (1997–), the law stipulates that a party must gain 2 percent of the votes in the presidential election to keep registry and receive DSF. However, the law also allows parties to form coalitions, and the overall performance of the coalition determines whether each member party can retain its registry. In reality, many minor parties avoid losing their registry by joining coalitions with larger parties.[7] Therefore, most registered parties in the Dominican Republic (1997–) have been able to receive DSF.

The majority of Latin American countries have laws that have a stricter eligibility threshold for DSF. Table 1 indicates that the strictest eligibility threshold requires parties to receive at least 10 percent of the vote to be eligible to receive DSF, which was adopted by Venezuela (1973–1987) and Ecuador (1978–1987). The most commonly adopted eligibility threshold is 4 percent, which can be observed in Costa Rica (1949–), Ecuador (2000–), Guatemala (1985–2003), Nicaragua (2000–), and Panama (2003–).

[6] Notable exceptions are Colombia (1991–) and Paraguay (1993–), where the threshold for receiving public funding is higher than the threshold for keeping party registry.

[7] Beginning in 2018, the Dominican Republic's Law 33-18 stipulates that a party will lose its legal personality if it fails to obtain at least 1 percent of the votes in the presidential election, whether it joins a coalition or not (Espinal 2018).

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Table 1. Vote percentage thresholds for direct state funding, by country and year of legislative election in Latin America (1978–2014)

Country	Elections	Threshold	Country	Elections	Threshold
Argentina	1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011, 2013	<1%	Guatemala	1990, 1994, 1995, 1999, 2003	4%
Bolivia	1993	No public funding		2007, 2011	5%
	1997, 2002, 2005	3%	Honduras	1985	<1% (10,000 votes)
	2009, 2014	No public funding		1989, 1993, 1997, 2001	Between 1% and 1.2% (20,000 votes)
Brazil	1990, 1994, 1998, 2002, 2006, 2010, 2014	<1%		2005, 2009, 2013	2%
Chile	1993, 1997, 2001	No public funding	Mexico	1991, 1994	1.5%
	2005, 2009, 2013	2.5%*		1997, 2000, 2003, 2006, 2009, 2012	2%
Colombia	1986, 1990	No public funding	Nicaragua	1996	<1%
	1991, 1994, 1998, 2002, 2006, 2010	2%		2001, 2006, 2011	4%
	2014	3%	Panama	1999	5%
Costa Rica	1982, 1986, 1990, 1994, 1998, 2002, 2006, 2010, 2014	4%		2004, 2009, 2014	4%
Dominican Republic	1982, 1986, 1990, 1994	No public funding	Paraguay†	1993, 1998, 2003, 2008	1%
	1998, 2002, 2006, 2010	<1%		2013	2%
Ecuador	1984, 1986	10%	Peru	1985, 1990, 1995, 2000, 2001, 2006, 2011	No public funding
	1988, 1992, 1994, 1996, 1998	5%	Uruguay	1989, 1994, 1999, 2004, 2009, 2014	<1%
	2002, 2006, 2009, 2013	4%	Venezuela	1983	10%
El Salvador	1988, 1991	<1%		1988, 1993, 1998	5%
	1994	1%		2000, 2005, 2010	No public funding
	1997, 2000, 2003, 2006	3%			
	2009, 2012	2%			

Sources: See the online appendix.

*The law stipulates that DSF be available for registered parties that nominated candidates. However, the law stipulates that a party's legal personality will be cancelled if it fails to gain 5 percent of the valid votes cast in a lower house election, in at least eight regions or in at least three contiguous regions. Because there are sixteen regions in Chile, it makes sense to code the vote percentage threshold as 2.5 percent.

†In Paraguay, the law stipulates that parties must pass the electoral threshold for the most recent two elections to keep the party's legal personality.

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Research design, measurement, and estimation

This article examines the effect of different rules for DSF on different types of electoral volatility in eighteen Latin American countries from 1978 through 2014. The unit of analysis is a pair of consecutive lower chamber elections (e.g., Argentina 1983–1985). I choose to study Latin American countries for two reasons. First, in comparison to Western advanced democracies, the level of electoral volatility is exceptionally high in Latin America (Roberts 2015, 35). The high party system instability suggests the presence of more deeply rooted destabilizing factors. Second, Latin American countries are ideal for performing empirical analyses of electoral volatility. Because all Latin American countries have adopted presidentialism, the executive system can be held constant in the empirical analyses and will not be a concern as an intervening variable.

Dependent variables

Following the work of Powell and Tucker (2014) and Cohen, Salles Kobilanski, and Zechmeister (2018), I use the formula for constructing the Pedersen Index (Pedersen 1979) to generate my two main dependent variables for the analysis. The first dependent variable is party replacement volatility, which pertains to volatility due to (1) the absolute value of vote change for the established parties that contested the election at time $t-1$ but not the election at time t, and (2) the vote share of new parties that participated at time t but not at time $t-1$. Party replacement volatility is calculated by halving the sum of the above two components:

$$\text{Party replacement volatility} = \frac{\left|\sum_{i=1}^{n} P_{i(t-1)} + \sum_{j=1}^{n} P_{j(t)}\right|}{2}$$

where i denotes disappearing parties that contested only the election at time $t-1$ and j denotes new parties that contested only the election at time t.

Stable party volatility, the second dependent variable, pertains to vote switching among established parties, which is calculated by halving the sum of the absolute change in established parties' vote shares between time $t-1$ and time t:

$$\text{Stable party volatility} = \frac{\sum_{i=1}^{n} \left|P_{it} - P_{i(t-1)}\right|}{2}$$

where i denotes established parties. In principle, each measure of volatility ranges from 0 to 100. A zero for party replacement volatility indicates that there are no established parties exiting the system and there are no new parties entering the system; a score of 100 indicates that all established parties are replaced by new parties. In contrast, the formula for constructing the Pedersen Index uses only vote shares of established parties to calculate stable party volatility. In my dataset, the correlation between these two variables is not high ($r = 0.33$), suggesting that the level of party replacement volatility is not strongly correlated with the level of stable party volatility.

When calculating different types of volatility, one challenge is how to define an established party and a new party, and the coding rules determine not only the estimates but also the empirical results in different ways (Casal Bértoa, Deegan-Krause, and Haughton 2017). For addressing the issues of party change due to name change, splits, mergers, or coalitions, I largely follow the coding rules of Mainwaring, Gervasoni, and España-Nájera (2017).[8] However, while those rules consider that an established party will never become a

[8] I did not follow Cohen, Salles Kobilanski, and Zechmeister's (2018) coding rule that considers all cases of party name changes, mergers, splits, and coalitions as new parties, because this rule tends to overestimate party replacement volatility for a number of cases.

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new party under any circumstance, I follow Cohen, Salles Kobilanski, and Zechmeister (2018) coding rule to consider an established party as a new party at time *t* if it did not participate at time *t−1*. This is because the reentry of an established party implies that this party and new parties are in the same disadvantageous position to compete with established parties that participated in consecutive elections.

In this article, most electoral data are compiled from official results on the website of each country's electoral administrative body; when the official data are unavailable, I rely on sources that provide national-level data (Nohlen 2005) and district-level data (Eichorst and Polga-Hecimovich 2014; Kollman et al. 2019; Lublin 2019; Mustillo 2012).[9] Using the district-level data allows me to avoid lumping minor parties that received few votes into a category of "others" for most cases[10] and thus ensures highly accurate measures for my dependent variables.[11] For the countries that democratized in the 1980s or 1990s, only the lower chamber elections after the first democratic election are included.

Independent variables

The primary independent variable in this study is a dichotomous variable for *Less Strict Eligibility Thresholds for DSF*. This variable is coded 1 if a country had a vote percentage eligibility threshold for DSF for the second election in an electoral pair that is smaller than 1 percent, and 0 otherwise. I consider the threshold under 1 percent as the less strict threshold because it ensures that DSF be distributed to a large number of parties, including those that have governing experiences and those that do not. There is some variation for the observations within this threshold category. For instance, El Salvador's (1985–1991) eligibility threshold was 0.5 percent, while Uruguay's (1989–2004) eligibility threshold was five hundred votes, a threshold under 1 percent. To save the degrees of freedom in the model, any threshold under 1 percent is included in the less strict eligibility threshold category. The second independent variable is a dummy variable for *Stricter Eligibility Thresholds for DSF*. This variable is coded 1 if a country adopts a vote percentage eligibility threshold for DSF that is equal to or larger than 1 percent, and 0 otherwise.[12] The reference category in the models is countries that do not provide DSF.[13] The coding of these variables is based on various sources (Casas-Zamora and Zovatto 2015; Gutiérrez and Zovatto 2011; Revenga Sánchez 1993; Zovatto 2006) and original party law documents provided by the official websites of each country's electoral authority. While the eligibility thresholds do not account for the actual amounts of DSF, they suggest how accessible it is for small parties to receive DSF.

[9] See the online appendix for data sources for calculating my dependent variables. There are several other measurement issues for the calculation of volatility scores. First, for countries that allow independent candidates to run in elections, I combine all independents as one category for an election. Second, for countries that adopt a mixed electoral system, I combine parties' votes gained in each tier of electoral system for the calculation. Third, for countries that adopt a panachage electoral system, I follow Mustillo and Polga-Hecimovich's (2018) "naive" way for calculating parties' vote shares under a free list proportional representation system, which considers the sum of a party's panachage votes as its total votes.

[10] In my dataset, observations that have an "others" category due to data limitation include Colombia (1978–2002), Paraguay (1993), and Peru (1995).

[11] Previous studies have determined which parties to include in the analysis by either considering whether a party has passed a particular vote percentage threshold (Powell and Tucker 2014) or whether the party gained at least one seat in the previous election (Lago and Torcal 2020). This article does not set any threshold, to ensure that as many parties as possible be included in the analysis. For instance, in my dataset, the total number of parties that have participated in elections in Argentina and in Venezuela is 410 and 973, respectively.

[12] I use the variation inflation factor (VIF) test performed by Stata to check for multicollinearity for the two independent variables. The VIF statistics for the threshold <1 % category and the threshold ≥ 1% category are modest (2.72 and 2.45, respectively).

[13] I excluded from the analysis the cases of Bolivia (1985–1989) and Colombia (1978–1982) because these cases had no legal regulation of political financing, and thus the variables about public funding should be coded as missing.

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As Birnir (2005, 927) indicates, using dummy variables to denote different eligibility thresholds for DSF is more appropriate methodologically than using an ordinal variable that captures different thresholds. This is because dummy variables do not impose linearity on the relationship between the independent variable and the dependent variable. Among the 137 observations in my dataset, 22 observations are coded 1 for *No DSF*, 36 observations are coded 1 for *Less Strict Eligibility Thresholds for DSF*, and 79 observations are coded 1 for *Stricter Eligibility Thresholds for DSF*.

Control variables

The empirical models control for a number of variables that could potentially influence the electoral volatility variables. First, I control for *Party System Fragmentation*, operationalized as the effective number of electoral parties in the first election of an electoral pair. Studies show that a country with more parties might have a higher level of electoral volatility (Roberts and Wibbels 1999), presumably because a higher number of parties better permits voters to switch to a different party if the voters' policy preference or perception of party competence changes. In addition, as Cox (1997) suggests, smaller district magnitudes encourage elite coordination for electoral alliances and thus predict fewer parties. Therefore, *District Magnitude* controls for the possibility that permissive electoral systems tend to associate with higher levels of party system fragmentation (Cox 1997) and higher electoral volatility (Mainwaring, Gervasoni, and España-Nájera 2017; Powell and Tucker 2014). My measure is the natural log of average district magnitude for the second election in an electoral pair.[14] Furthermore, Andrews and Bairett (2014, 311) argue that the presence of an upper chamber might encourage elite coordination in the lower chamber for passing a parliamentary agenda, and such legislative coalitions might mutually promote electoral alliances (Cox 1997). Therefore, I follow Andrews and Bairett (2014) and include *Levels of Coordination Required with the Upper Chamber*, operationalized as the proportion of seats in the upper chamber in relation to the sum of seats in both chambers for the second election of an electoral pair.[15]

Moreover, previous research has shown that a higher level of ideological polarization in the party system will decrease the level of electoral volatility "by anchoring parties and their constituencies in highly differentiated ideological positions" (Roberts and Wibbels 1999, 579; see also Su 2014). Therefore, models control for *Ideological Polarization*, which is the level of party system ideological polarization for the first election of an electoral pair. The measure of ideological polarization is calculated using Singer's (2016) formula:

$$\text{Polarization} = \sqrt{\sum_{i=0}^{n} V_i(\text{LR}_i - \text{LR}_{mean})^2}$$

where i represents each party, V is the vote share, and LR is left-right ideology scores drawn from estimates of the ideological position of parties in lower chamber elections between 1990 and 2014 (Baker and Greene 2011; Baker 2015).[16] This measure estimates the weighted average distance between the party's ideology score and the weighted mean ideology score in a lower chamber election. A low polarization score suggests that the ideology scores of most parties are close to the weighted mean. Because this measure is weighted by vote share, a party system where minor parties have more extreme ideological positions than larger parties will have a lower polarization score than a party system where larger parties have more extreme ideological positions than smaller parties.

[14] Data for average district magnitude are from Bormann and Golder (2013).

[15] Data are from Cruz, Keefer, and Scartascini (2018).

[16] Values of the ideological scale range from 1.6 to 19. For parties in pre-1990 periods whose ideological scores are unavailable in Baker and Greene (2011) and Baker (2015), I use the first available ideology score for the parties in the datasets. This coding rule assumes that a party's ideology does not change much over time.

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Institutional Discontinuity is controlled for in the empirical models, as studies find that electoral dynamics among parties will become more unstable after a fundamental alteration in important political institutions (Madrid 2005; Roberts and Wibbels 1999; Su 2014). I use the index of institutional discontinuity constructed by Roberts and Wibbels (1999), which ranges from 0 to 3, assigning one point for each of the following scenarios: the adoption of a new constitution; an increase in voter turnout rate of more than 25 percentage points due to the enfranchisement for previously excluded citizens; and an irregular change in executive authority, including a president's self-coup, a forced resignation of the president, a successful presidential impeachment, or an attempted coup d'état that forced the president temporarily from office. I code this variable by measuring the number of institutional discontinuity events that occurred after the first election and before the second election in an electoral pair.[17]

Studies show that the party system might become more stable over time as voters have been more socialized for developing stronger party identification (Brader and Tucker 2001). The argument that electoral volatility diminishes over time has been supported by some studies (Tavits 2005) but not by others (Chiaramonte and Emanuele 2017; Madrid 2005). To control for this trend effect, I include a variable for *Years since Democracy*, which is measured as the logged number of years from the inauguration of a new democracy to the second election year of an electoral pair.[18]

To control for the possible effects of economic voting on electoral volatility (Kuenzi et al. 2019), the models include *GDP Growth* and *Inflation*.[19] Both variables are lagged by one year before the second election of an election pair to capture the short-term impact of economic fluctuations on volatility. Inflation is operationalized as the logged value of the inflation rate.[20] Last, I control for two variables regarding population. Madrid (2005) demonstrates that, because ethnic-based parties are generally weak or nonexistent in many Latin American countries, Indigenous people are generally poorly represented and tend to switch their support to different catch-all parties over time. Therefore, I include the percentage of *Indigenous Population* in a country's population (Madrid 2016). Moreover, I include a natural log of *Electorate Size* to control for the possibility that a larger population might hinder elite coordination in elections and thus might increase volatility (Andrews and Bairett 2014, 314). Table 2 reports descriptive statistics for the dependent variables, independent variables, and control variables.

Estimation techniques and model specification

Following previous empirical studies of electoral volatility (Birnir 2005, 2010; Powell and Tucker 2014), I use an ordinary least squares (OLS) regression model.[21] Because of the cross-sectional time-series structure in my data, observations within countries may not

[17] Institutional discontinuities in my dataset are for new constitutions adopted before elections (Bolivia 2009, Brazil 1990, Colombia 1991, Dominican Republic 2010, Ecuador 1984, 2002, and 2009, Guatemala 1990, Paraguay 1993, Peru 1995, and Venezuela 2000), increases in electoral turnout of more than 25 percentage points due to enfranchisement (Ecuador 1984 and Peru 1985), and irregular changes in executive authority before elections (Argentina 2003, Bolivia 2005, Brazil 1994, Ecuador 1998, 2002, and 2006, Guatemala 1994 and 2015, Honduras 2009, Nicaragua 2011, Paraguay 2003 and 2013, Peru 1995 and 2001, and Venezuela 1993 and 2005).

[18] I used the natural log transformation of this trend variable because I expect a diminishing effect of this variable.

[19] Data for these economic indicators are from the World Bank's World Development Indicators, http://data.worldbank.org/data-catalog/world-development-indicators.

[20] Following Kurtz and Brooks (2008), I assume that the impact of inflation below 1 percent (including deflation) on electoral volatility is indistinguishable from that of an inflation rate of 1 percent. Thus, the logged inflation rate for these cases is coded zero.

[21] The results do not change much for models that were estimated with random effects (i.e., the RE regression).

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Table 2. Descriptive statistics

	Mean	Standard deviation	Minimum value	Maximum value
Party replacement volatility	8.78	8.69	0	58.29
Stable party volatility	17.45	10.42	3.73	69.79
Total volatility	26.23	15.61	4.18	83.48
No DSF	0.16	0.37	0	1
Less strict eligibility threshold for DSF	0.26	0.44	0	1
Stricter eligibility threshold for DSF	0.58	0.49	0	1
Party system fragmentation	4.55	2.19	1.68	11.38
Average district magnitude (ln)	1.47	0.69	0	2.94
Upper chamber coordination	0.12	0.13	0	0.39
Ideological polarization	4.23	1.30	1.35	8.02
Institutional discontinuity	0.21	0.46	0	2
Years since democracy (ln)	2.83	0.73	0.69	4.17
GDP growth	3.70	3.74	−12.31	18.29
Inflation (ln)	2.30	1.45	0	7.85
Indigenous population	9.58	12.47	0	41.52
Electorate size (ln)	15.89	1.17	14.05	18.77

Note: The total number of observations is 137, except for average district magnitude (131).

be truly independent from one to another. Therefore, I employ Huber-White sandwich robust variance estimators clustered by countries to obtain robust standard errors for the estimated coefficients.[22]

In this study, two different sets of models have been specified. The first considers the effects of dummy variables for different eligibility thresholds for DSF, and the second model includes the aforementioned independent variables as well as the control variables. Models have been defined as follows:

$$\text{Volatility (1)} = \beta 0 + \beta 1 \text{ less strict threshold} + \beta 2 \text{ stricter threshold} + \epsilon$$

$$\text{Volatility (2)} = \beta 0 + \beta 1 \text{ less strict threshold} + \beta 2 \text{ stricter threshold} + \beta 3 \text{ party system fragmentation} + \beta 4 \text{ average district magnitude (ln)} + \beta 5 \text{ upper chamber coordination} + \beta 6 \text{ ideological polarization} + \beta 7 \text{ institutional discontinuity} + \beta 8 \text{ years since democracy (ln)} + \beta 9 \text{ GDP growth} + \beta 10 \text{ inflation (ln)} + \beta 11 \text{ indigenous population} + \beta 12 \text{ electorate size (ln)} + \epsilon$$

[22] I did not use fixed-effects estimators because they are unable to produce results for the time-invariant variables in my model. I also did not include a lagged dependent variable to control for the possibility of serial correlation because the Wooldridge test for autocorrelation in panel data (using Stata xtserial command) indicates that it is not a serious concern for my models.

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Table 3. Models for different types of electoral volatility in lower chamber elections in Latin America

	Model 1 Party replacement volatility	Model 2 Stable party volatility	Model 3 Party replacement volatility	Model 4 Stable party volatility
Less strict eligibility thresholds	−9.048* (3.437)	−8.461 (6.018)	−4.365* (1.580)	−3.114 (3.836)
Stricter eligibility thresholds	−4.106 (3.502)	−8.309 (3.502)	−2.468 (5.614)	−7.017 (1.913)
Party system fragmentation	—	—	0.196 (0.477)	1.127 (0.574)
Average district magnitude (ln)	—	—	0.148 (1.192)	−4.888 (2.553)
Upper chamber coordination	—	—	0.558 (5.956)	−15.832 (11.436)
Ideological polarization	—	—	−0.160 (0.472)	−2.289* (0.904)
Institutional discontinuity	—	—	4.153 (2.107)	7.987*** (1.795)
Years since democracy (ln)	—	—	2.108* (0.932)	3.574 (1.748)
GDP growth	—	—	0.113 (0.133)	−0.266 (0.300)
Inflation (ln)	—	—	0.204 (0.393)	−0.787 (0.399)
Indigenous population	—	—	0.308*** (0.043)	0.100 (0.144)
Electorate size (ln)	—	—	0.294 (0.740)	0.303 (1.154)
Constant	13.521***	24.468***	−4.189	16.715
	(3.469)	(5.521)	(10.773)	(15.404)
R-squared	0.116	0.087	0.345	0.403
N	137	137	131	131

Note: Main entries are OLS estimates with robust standard errors clustered by country in parentheses. The reference category is countries that do not provide DSF.
*$p \leq 0.05$; **$p \leq 0.01$; *** $p \leq 0.001$, two-tailed tests.*

Empirical results

Table 3 presents results for the empirical models predicting different types of electoral volatility in Latin America.[23] Models 1 and 2 examine the effects of differing eligibility thresholds for DSF, while Models 3 and 4 estimate the effects of the independent variables with control variables taken into account. All models use countries that do not provide DSF for parties as the reference category.

The results show strong support for H1. In Model 1 and Model 3, the less strict eligibility thresholds variable has a negative and statistically significant coefficient. Substantively, the finding in Model 3 suggests that a country with a vote percentage eligibility threshold for DSF that is smaller than 1 percent has a party replacement volatility score that is 4.4 lower than a country that provides no DSF for parties. In addition, the results in Model 1 and Model 3 show that a country with a stricter eligibility barrier for making parties eligible for receiving DSF has a lower party replacement volatility score than a country

[23] Results for total volatility are in the online appendix.

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that provides no DSF. However, the analysis does not provide statistically significant evidence for this finding.[24]

Regarding the results for stable party volatility (Models 2 and 4), less strict eligibility thresholds and stricter eligibility thresholds have negative coefficients but they do not reach statistical significance. This statistically insignificant finding suggests that, although less strict eligibility thresholds help existing parties be more likely to survive, they do not necessarily reduce stable party volatility. If numerous parties are able to survive due to a low eligibility threshold for DSF, the level of electoral competition might be higher and thus increase the level of stable party volatility, as Casas-Zamora's (2005) study implies. However, it is also possible that many existing parties might use DSF to strengthen their ties with voters, and thus the level of stable party volatility might be lower (Casal Bértoa 2017). In short, there is no strong statistically significant evidence for supporting H2.

Surprisingly, some control variables do not have theoretically expected impacts on any type of electoral volatility. Against the expectation based on economic voting theory, the estimated coefficients of GDP growth and inflation rate do not achieve statistical significance. Moreover, I find that party system fragmentation, average district magnitude, upper chamber coordination, and electorate size have no clear impact on any type of electoral volatility in my sample.

In contrast, the results for one control variable clearly indicate that different theoretical arguments should be used for explaining different types of electoral volatility. Table 3 indicates statistically significant evidence that a higher level of ideological polarization decreases stable party volatility, but the effect of polarization on party replacement volatility is not statistically significant. A seemingly unrelated estimation (SUEST) performed by Stata indicated evidence at the $p < 0.05$ level that the coefficients for polarization differed between Models 3 and 4. While Roberts and Wibbels (1999) find that a more ideologically polarized party system tends to have lower total electoral volatility, my finding provides a new insight by showing that the reduction effect of ideological polarization is stronger for stable party volatility than for party replacement volatility.

Table 3 also indicates that the coefficient for institutional discontinuity is positive and statistically significant for stable party volatility but statistically insignificant for party replacement volatility. However, the SUEST test showed a lack of statistically significant evidence that the coefficients for institutional discontinuity differed between Model 3 and Model 4. In Model 3, the coefficient for years since democracy is statistically significant and positive, indicating that party replacement volatility tends to increase over time. However, contrary to Weghorst and Bernhard (2014, 18), my analysis in Model 4 did not provide statistically significant evidence that years since democracy has an effect on stable party volatility. Moreover, while Madrid (2005) demonstrates that total electoral volatility increases with a larger Indigenous population, my finding shows that a larger Indigenous population increases party replacement volatility, but the effect of Indigenous population on stable party volatility is statistically insignificant. However, SUEST tests indicated a lack of statistically significant evidence that the coefficients for years since democracy and the coefficients for Indigenous population differed between Model 3 and Model 4. Overall, my analyses suggest that it is necessary to look beyond total electoral volatility by testing different explanations on different types of volatility.

[24] To further examine whether less strict eligibility thresholds help reduce party replacement volatility more than stricter eligibility thresholds, I performed the Stata *lincom* estimation. Model 1 results indicate that the coefficient for less strict eligibility threshold differs at $p < 0.01$ from that for stricter eligibility thresholds. However, the Stata *lincom* estimation for Model 3 shows that such a difference between these two eligibility threshold variables is not statistically significant ($p = 0.3$).

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Robustness tests

To test the robustness of my findings, I conducted a series of robustness checks and sensitivity tests based on Models 3 and 4 (see the online appendix for results). First, to consider the possibility that certain statistical outliers are driving my results, I conducted regression diagnostics of studentized residuals and Cook's distance to identify these outliers.[25] The re-estimated results do not change much if I include fixed effects dummy variables for these observations or drop them from the models. Second, to make sure that the empirical results are not driven by the particular operationalization of the dependent variables, I recoded the dependent variables using Birch's (2003, 122–123) measures of "party replacement" and "electoral volatility." The reestimated results remain largely similar.

Third, to make sure that the empirical results are not driven by the choice of 1 percent cutoff point, I recoded this variable using a 2 percent eligibility threshold as the cutoff point. The reestimated results indicate that the coefficient for eligibility thresholds below 2 percent is negative and statistically significant for party replacement volatility, suggesting that using a different cut-off point for operationalizing the less strict eligibility threshold does not significantly affect the main finding. Fourth, I conducted another robustness check using Birnir's (2005) research design, which includes dummy variables that pertain to different eligibility thresholds for DSF. I followed this strategy by including dummy variables for vote percentage thresholds smaller than 1 percent (less strict eligibility thresholds), to vote percentage thresholds equal to 1 percent, 2 percent, 3 percent, 4 percent, 5 percent, and 10 percent.[26] With seven different eligibility thresholds for DSF being included for the test of party replacement volatility, the results remain largely unchanged for the variable of less strict eligibility thresholds.

To summarize, the empirical findings are robust across different operationalizations of dependent variables and different model specifications. The robustness checks reinforce the general theoretical expectation that less strict eligibility thresholds matter for explaining party replacement volatility.[27]

Conclusion

Previous research has argued that direct state funding (DSF) for parties has an important influence on the electoral volatility of party systems, which is an important aspect of party system institutionalization. However, I argue that the causal mechanism that explains electoral volatility requires consideration of how different rules for public subsidies affect different types of electoral volatility. Using lower chamber electoral data for eighteen Latin American countries from 1978 through 2014, my empirical analyses show that countries that provide DSF for most parties that participated in elections tend to have lower levels of party replacement volatility than countries that provide no such funding. In contrast, I find that countries that require parties to achieve a higher threshold for being eligible for DSF do not necessarily have a lower level of party replacement volatility. This article does not provide statistically significant evidence that the provision of DSF, regardless of the level of barrier, correlates with vote-switching volatility between existing

[25] For party replacement volatility, the outliers are Guatemala (1999–2003), Peru (2000–2001, 2006–2011), and Venezuela (1993–1998). For stable party volatility, the outliers are Bolivia (2005–2009) and Venezuela (2000–2005, 2005–2010).

[26] There are nine observations coded 1 for "threshold = 1%," twenty observations coded 1 for "threshold = 2%," eleven observations coded 1 for "threshold = 3%," twenty-four observations coded 4 for "threshold = 4%," twelve observations coded 1 for "threshold = 5%," and five observations coded 1 for "threshold = 10%."

[27] One possible endogeneity issue in my analysis is that politicians might change party finance laws to secure their parties' survival. My tests demonstrate that the possible endogeneity between less strict eligibility thresholds and party replacement volatility might not be a serious concern. See the online appendix for details.

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parties. In short, a lower barrier for DSF tends to reduce the type of electoral volatility caused by party replacement while not significantly impacting volatility among stable political parties.

My analyses carry important theoretical implications. While Birnir (2005) finds that DSF decreases total volatility and thus that DSF matters for party system institutionalization, this article provides a more nuanced insight by showing that DSF serves as public venture capital primarily for established parties. The empirical results suggest that, compared to no DSF, a less strict eligibility threshold for DSF tends to produce a lower level of party replacement volatility, which is consistent with the expectation that very generous public financing for parties will prevent new parties from gaining stronger electoral support. In addition, my study does not provide evidence that DSF barriers inhibit voters from switching votes among existing parties. While it is common that a democratic country experiences party volatility to some extent, it is preferable not to have a higher level of party replacement volatility, because such volatility is more likely to associate with negative political consequences, such as lack of accountability and lack of development of party reputations, than is stable party volatility.

This article's approach facilitates a better understanding of the mechanism about the effect of rules of direct state funding on electoral volatility in Latin America while also bringing to bear conventional explanations of party system development around the world. The empirical analysis shows that the theorized effect of some variables should influence different types of electoral volatility in different ways. For instance, while Madrid (2005) finds that total electoral volatility tends to be lower in a highly polarized party system, my analysis suggests that a higher level of party system polarization tends to decrease stable party volatility but not party replacement volatility. In short, this study provides strong evidence that DSF serves as public venture capital for established parties. It also provides a critical reappraisal of the implications of the cartel party thesis for the relationship between DSF and party system institutionalization in new democracies. Last, but not least, one important substantive implication of this study is that an institutional design of a less strict eligibility threshold for party subsidies can support more stable party systems and greater political accountability, by discouraging the emergence of new parties with anti-system tendencies while not discouraging vote-switching between existing parties.

Supplementary material. To view the online appendix for this article, please visit https://doi.org/10.1017/lar.2022.9

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