

## Party Registration Rules and Party Systems in Latin America

Yen-Pin Su

*Party Politics* published online 5 February 2013

DOI: 10.1177/1354068812472585

The online version of this article can be found at:

<http://ppq.sagepub.com/content/early/2013/02/01/1354068812472585>

---

Published by:



<http://www.sagepublications.com>

On behalf of:

Political Organizations and Parties Section of the American Political Science Association

**Additional services and information for *Party Politics* can be found at:**

**Email Alerts:** <http://ppq.sagepub.com/cgi/alerts>

**Subscriptions:** <http://ppq.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

>> [OnlineFirst Version of Record](#) - Feb 5, 2013

[What is This?](#)

# Party registration rules and party systems in Latin America

**Yen-Pin Su**

University of Pittsburgh, PA, USA

Party Politics

1-14

© The Author(s) 2013

Reprints and permission:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1354068812472585

ppq.sagepub.com



## Abstract

Existing studies have paid a great deal of attention to how electoral systems affect party politics, but there has been little discussion in the literature on the effects of party registration rules. The theoretical importance of the impact of party registration rules on party system development lies in its temporal priority to the effects of electoral systems. This study aims to fill the theoretical void by conducting a systematic analysis of the effects of party registration rules in Latin America. Using an original dataset of petition signature requirements and spatial registration requirements in 18 Latin American countries from 1978 to 2011, I conduct cross-national time-series analyses on how this institution affects the number of parties. The empirical results show that a more restrictive petition signature requirement significantly reduces the number of electoral parties in a country, while a spatial registration requirement does not significantly affect the number of parties.

## Keywords

Elections, Latin America, party fragmentation, party law, party systems

## Introduction

Studies have shown that the design of electoral institutions involves a trade-off between representation of voters and accountability of governments (Powell, 2000). This insight might best be reflected in the difference between proportional representation (PR) systems and plurality systems (Carey and Hix, 2011; Lijphart, 1999; Powell, 2000): while a PR system facilitates better representation by including more parties that represent diverse interests, plurality rule reduces the number of parties but produces a stronger and more accountable government.

The insight of the representation-accountability trade-off is also evident in the political engineering of party registration rules. Unlike many electoral institutions, party registration rules directly affect a party even before it competes in an election. A permissive registration rule might improve representation quality by encouraging more parties to participate in elections, while a restrictive registration rule might facilitate government accountability by providing incentives for elites to coordinate around viable parties and helping the voters better identify which party or parties will govern and which policies will then be made (Carey and Hix, 2011). As Katz and Mair (2009: 759; 1995) argue, however, party registration rules may be used as a tool to enhance or maintain the political advantage of existing parties (see also Rosenstone et al., 1996: 19).<sup>1</sup>

Empirically, Bischoff's (2011) analysis on advanced democracies finds that more stringent petition signature requirements and higher registration deposit significantly decrease the chance of new party formation (see also Gauja, 2010; Hug, 2001; van Biezen and Rashkova, 2011). Rashkova's (2010) study on European parliamentary elections shows that while ballot access rules suppress the number of parties, public funding has no significant effect on the number of parties (see also Scarrow, 2006).

It is not clear, however, whether the above findings should extend to new democracies. In Eastern Europe, Tavits (2008) demonstrates that while a monetary deposit for registering a new party deters the emergence of new parties, an increase in the number of required petition signatures is positively associated with the predicted count of new parties. Catón and Tuesta Soldevilla (2008) in their case study of Peru find that a more restrictive petition signature requirement has limited effects on reducing the number of parties.

Paper submitted 8 June 2012; accepted for publication 9 September 2012

### Corresponding author:

Yen-Pin Su, University of Pittsburgh, 4600 Posvar Hall, Pittsburgh, PA 15260, USA.

Email: yes5@pitt.edu

These mixed results from the existing literature on new democracies show that the puzzle of party registration rules remains unsolved. Surprisingly, given that the development of party systems is so crucial for new democracies, the impact of party registration rules in Latin America has received limited attention in the literature. Despite a good deal of work on documenting various party laws in this region (Molenaar, 2012; Nohlen et al., 2007; Zovatto, 2006), there is little research that empirically examines the consequence of party registration rules. While some small-N studies about the impacts of registration rules on the formation of ethnic parties have generated valuable insights (Birimir, 2004; Van Cott, 2005), a more systematic analysis is necessary to better understand how party registration rules affect party systems.

The major task of this article is to fill these gaps in the literature. It focuses on two kinds of party registration rules in Latin America: petition signature requirements and spatial registration requirements. Petition signature requirements mandate a number of signatures or affiliated members that the applicants of new parties must collect in order to register a party before competing in elections. A spatial registration requirement mandates that new party applicants must collect signatures or organize local party branches in a specified geographical manner that exceeds more than one constituency. I argue that these party registration rules impose a certain degree of party formation costs for the political elites' strategy of entering the electoral arena.

In line with institutional explanations proposed by Cox (1997), I posit that the number of parties should decrease with the restrictiveness of party registration rules. I test this theoretical assertion on an original dataset of petition signature requirements and spatial registration requirements in 123 legislative elections in Latin America from 1978 to 2011. I find that more stringent petition signature requirements have a strong reductive effect on the number of electoral parties, while a spatial registration requirement does not significantly affect the number of parties.

This article proceeds as follows. The first section outlines the theory of party registration rules and competing views in explaining party system development. The second section presents a comprehensive analysis of petition signature requirements and spatial requirements for party registration in Latin America. The third section describes my data and presents the findings. The final section discusses the implications of the analyses and develops conclusions.

## Strategic entry, institutions and party system development

Cox's (1997) theory of strategic entry suggests that the emergence of new parties results from political elites' cost-benefit calculation about whether to enter the electoral arena or not. Specifically, Cox contends that such rational

calculation is conditioned by the costs of entry, benefits of office and probability of garnering support in the election (Bischoff, 2011; Tavits, 2006, 2008).

### *Party formation cost and institutions*

Regarding the cost of entry, Tavits (2008: 115) argues that new entrants need to consider two types of party formation cost (Hug, 2001): the cost to register a party and the cost to win a seat. In the comparative studies on strategic party entry in Europe, petition signature requirements, monetary deposits for registration and public funding for parties are important factors that influence political elites' calculation about how costly it is to register a party (Hug, 2001; Tavits, 2006, 2008). A more restrictive petition signature requirement and a higher monetary deposit for registration indicate a higher level of party formation cost, while the existence of public funding available to parties can help lower such cost. However, the effect of public funding on new party entry is less automatic because it depends on whether these parties are able to receive a certain threshold of electoral support (Tavits, 2006: 102).

A spatial registration requirement is also an important institution that imposes party formation costs. Such an institution affects party system development by making it difficult for the entry of the parties that are not capable of having a broad base of support (Catón and Tuesta Soldevilla, 2008: 153). Birimir (2004: 16) demonstrates that the removal of spatial registration rules in Ecuador in 1995 led to the emergence of an important regional-based indigenous party for running the 1996 election. Hicken (2008: 87) shows that the spatial registration requirements in Indonesia resulted in a reduced number of parties in the 2004 election.

Electoral systems are important factors that shape political elites' consideration about how costly it is to win a seat (Coppedge, 1997; Jones, 1995). Previous literature suggests that a more proportional electoral system encourages a higher level of legislative multipartism as the cost for smaller parties and new parties to win a seat is lowered (Duverger, 1954; Harmel and Robertson, 1985; Hug, 2001; Taagepera and Shugart, 1989). Studies of Latin America have shown that a party system tends to be less fragmented where presidential and legislative elections are held concurrently (Jones, 1995; Shugart and Carey, 1992). Other studies demonstrate that the level of party system fragmentation is higher in a country that adopts a larger district magnitude (Coppedge, 1997; Taagepera and Shugart, 1989) and/or a preferential voting system (Karvonen, 2004).

Given that party registration rules and electoral systems pertain to different party formation cost, the theoretical importance of party registration rules lies in its temporal priority to the effects of electoral systems in altering political parties' electoral dynamics (Birimir, 2004: 3; Norris, 2005: 84). For instance, a large district magnitude may not

produce more parties if the country has stringent party registration rules that make registering a party very costly in the first place. In this sense, studies of party system development that have exclusively focused on the effects of electoral institutions without considering the impacts of party registration rules may lead to inaccurate causal explanations (Birnie, 2004: 6).

This article focuses on two important party registration rules that have not been fully examined in the Latin American party system literature: petition signature requirements and spatial registration requirements.<sup>2</sup> Based on the previous discussion about cost of entry, both requirements produce a certain level of cost, such as time, manpower and organizational ability, for new party applicants. In short, two testable hypotheses can be generated. The first suggests that a more restrictive petition signature requirement should reduce the number of parties in a country. Secondly, it is hypothesized that a country that has a spatial registration requirement should have fewer regional-based parties and thus fewer parties overall.

### **Alternative explanations for party system development**

The second component of Cox's strategic entry model refers to the benefits of office, such as probability of the spoils of office and the potential to influence policy (Cox, 1997: 156). In her research on post-communist European countries, Birch (2003: 106, 130) argues that the existence of a directly elected presidency is seen as a more influential political office, and thus a country that has such an institution provides higher potential benefits of forming a new party to run in the elections than a country that does not have such an office.

In presidential democracies, the incentive of getting the benefits of this office is affected by different executive electoral formulas (Osborne and Slivinski, 1996). According to Shugart and Carey (1992: 209), a party system tends to be less fragmented in a plurality formula because under such a system political elites tend to form two broad coalitions in the presidential election, with one supporting the front-runner and the other supporting a major challenger. In contrast, the run-off formula may encourage more parties to run their own presidential candidates with the goal of either 'placing second in order to make the runoff themselves', or else 'enhancing their own bargaining position with one of the top two candidates in the runoff, perhaps exchanging support for policy or office concessions' (Shugart and Carey, 1992: 210). The incentive provided by a run-off system for more new parties to put forth presidential candidates will improve these parties' chances of winning seats in the legislature, and thus might lead to a higher level of legislative multipartism (Jones, 1995; Payne et al., 2007: 21; Shugart and Carey, 1992).

The third component of Cox's model is the probability of obtaining electoral support, which refers to what extent a party will be defeated in the elections. Given that this probability must be calculated before entry, forming a new party is less likely if political elites believe that a new party is not viable to contest elections. According to Cox (1997: 158), electoral viability is determined by electoral histories. For instance, it is expected that a higher number of parties contest in a founding election than in subsequent elections (Donno and Roussias, 2012: 587 f.). This is because it is not obvious who is viable and who is not in the founding election, and thus every potential entrant is perceived to have an *ex ante* equal chance to win (Cox, 1997: 152).

It is clear, however, that such uncertainty diminishes over time as certain parties have established histories of electability. Voters will have more learning experiences on how to vote strategically and tend not to 'waste' their votes on parties that have no histories of electoral viability (Tavits, 2008: 117). Therefore, the number of new parties should decrease as a democracy experiences more elections.

In addition to electoral histories, short-term economic performance is also found to affect the electoral viability of new parties (Bischoff, 2011; Tavits, 2006, 2008). The literature on economic voting has argued that voters tend to punish the incumbent party by switching their votes when the national economic performance is poor.<sup>3</sup> Hence, it is likely that more new parties will be formed when the national economy performs poorly since the probability of garnering electoral support for new parties might be higher under such conditions (Tavits, 2008: 118).

### **Party registration rules in Latin America**

This section examines the petition signature requirement and spatial registration requirements for national lower house elections in 18 Latin American countries from 1978 to 2011. I cross-checked various sources for coding these variables (Nohlen et al., 2007; Zovatto, 2006; Zovatto and Orozco Henríquez, 2008) and also inspected original party law documents provided by the official websites of each Latin American country's electoral authority, Kenneth Janda's Database of Party Laws ([www.ndi.org/db](http://www.ndi.org/db)), the Global Legal Information Network ([www.glin.gov](http://www.glin.gov)), Justia ([www.justia.com](http://www.justia.com)) and the Political Database of the Americas (<http://pdpa.georgetown.edu/>). Appendix 1 summarizes these party registration rules.

#### **Petition signature requirements**

In general, there are four subtypes of petition signature requirements in Latin America. First, a country may require the collection of a number of signatures that is no less than a certain percentage of registered voters in the previous election. Second, a country may require the collection of

at least an absolute number of signatures from registered voters as affiliated members. Third, a country may require a number of signatures that is no less than a certain percentage of valid votes in the previous election. Finally, a country may require a number of signatures that is no less than a certain percentage of total votes, regardless of valid or invalid ones, in the previous election.

Although many Latin American countries have changed party laws by adopting constitutional or legal reforms, or by using presidential decrees (Molenaar, 2012), the petition signature requirement is not always the target. Argentina, Brazil, Chile and Venezuela are the countries that have consistent petition signature requirements in this study. In contrast, nine countries changed their petition signature requirements once:<sup>4</sup> of these, Costa Rica, the Dominican Republic and Panama made the requirement more permissive, while Ecuador, El Salvador, Guatemala, Mexico and Uruguay made the requirement more restrictive. Bolivia, Colombia and Honduras changed their petition signature requirements twice and made them more restrictive over time. Nicaragua also changed its petition signature requirements twice, but the first time (1996) the requirement was made more permissive and the second time (2000) more restrictive.<sup>5</sup>

Peru changed petition signature requirements the most times (4) in Latin America. The requirement became more restrictive from 1980 to 1984. The Law of Organic Elections of 1997 dramatically changed the required number of signatures from 100,000 to almost 500,000 (4 percent of the registered voters). After the fall of Alberto Fujimori, the requirement was lowered to a number that equals 1 percent of total votes in the previous general election. However, this requirement changed again in 2009, increasing to a number of signatures that equals 3 percent of total votes in the previous general election.

### *Spatial registration requirements*

Among the 18 Latin American countries, Bolivia, Colombia, Costa Rica, El Salvador, Paraguay and Uruguay have no spatial requirement in their party registration rules. In other words, as long as new party applicants are able to collect the required number of signatures it does not matter whether the signatures are collected from more than one constituency or not. In Argentina and Venezuela, there are spatial requirements for registering a national party. However, new party applicants in these two countries can choose to collect fewer signatures to form a constituency-level party in one district for running national elections. Thus, these two countries are considered as if they do not have a spatial registration requirement in this study.

Brazil's party law requires that a new party must have at least 101 founders that are living in at least one-third of the states. In Chile, a new party applicant must collect required signatures in each of the eight regions that serve as this new

party's base for registration, or in each of the three geographically adjoining regions that serve as this new party's base for registration. In Guatemala and Honduras, a party must be organized in about half of the electoral districts of the country. In the Dominican Republic, a party must organize local branches in each of the chief municipalities of the provinces and the National District. Nicaragua and Panama require a party to have a certain number of affiliated party members at different levels of regional administrative units all over the country.

In Ecuador, from 1979 to 1994, a new party or political movement must collect signatures in at least ten provinces with two of them from the most populous three provinces in the country. However, this requirement was lifted in 1995 for the registration of a political movement (Birnie, 2004: 16). From 1997 to 2003, a new party in Mexico must have 3,000 members in at least 10 states or 300 members in at least 100 of the single-member electoral districts. After 2003, the requirement increased to 3,000 members in at least 20 states or 300 members in at least 200 of the single-member electoral districts.

In Peru from 1980 to 1995, a party is required to organize local committees in at least half of the departments. This spatial registration requirement was lifted in 1993 (Birnie, 2004: 12). However, the Political Party Law promulgated in 2003 resumed the spatial registration rules, which mandates a party to organize committees with each comprised of 50 affiliated members in at least one-third of the provinces located within two-thirds of the departments.

### *Empirical analyses*

I test my hypotheses regarding the number of parties using an original dataset of party registration rules in 18 Latin American countries from 1978 to 2011. The units of analysis are first-round results of lower house legislative elections.<sup>6</sup> The sample covered in the empirical analyses include the countries that have a Polity IV score (Marshall et al. 2011) greater than or equal to 5 in or after 1978,<sup>7</sup> to ensure that the elections studied were held under a relatively open and competitive institutional environment.

There are two primary dependent variables in this study: the absolute number of electoral parties (ANEP) and the effective number of electoral parties (ENEP).<sup>8</sup> Ideally, I should measure all registered parties appearing on the ballot; however, most available election results cluster parties that received very few votes under an 'other parties' category. For this reason, I restrict the measure of ANEP only to parties receiving at least 0.5 percent of the vote.<sup>9</sup> Data for ANEP are from Nohlen (2005) and the official electoral results from each country. ENEP is calculated using Laakso and Taagepera's (1979) formula.<sup>10</sup> ENEP is simply ANEP with each party weighted by its share of votes or seats. Such operationalization takes into account



the relative size of parties in calculating the number of parties. Data for ENEP come mainly from Gallagher and Mitchell (2008), coupled with my own calculation for more recent elections.<sup>11</sup>

As mentioned, there is no single way to standardize petition signature requirements. To make different subtypes of petition signature requirements comparable, I standardize these requirements as the number of signatures as a percentage of registered voters (NSPR) for each country. NSPR is calculated as the required number of petition signatures as a percentage of the total number of registered voters in the previous election. The logic of NSPR is identical to the first subtype of petition signature requirements as mentioned before. Unlike a simple count of the absolute number of required signatures, NSPR weights such a number by the size of the electorate. This operationalization is useful because it distinguishes between countries that have the same required number of signatures but a different electorate size. Therefore, NSPR better captures the cost to register a new party.

To transform the second, third and fourth subtypes of petition signature requirement to the NSPR metric, it is necessary to use data on registered voters, valid votes and total votes. I obtained these data from the Parline database ([www.ipu.org/](http://www.ipu.org/)) and Nohlen (2005).<sup>12</sup> The calculation of NSPR becomes more complicated when a country allows both national and constituency-level parties to run in national lower house elections with different registration rules.<sup>13</sup> In such cases (i.e. Argentina, Costa Rica and Venezuela), I used the rules for registering a constituency-level party to code the country's NSPR variable. The assumption of this coding principle is that, since the constituency-level NSPR is less restrictive than the national-level NSPR, more political elites in these countries tend to pay a lower cost to register a constituency-level party rather than paying a higher cost to register a national-level party (see Appendix 2 for notes about how to make the constituency-level NSPR comparable to national-level NSPR).<sup>14</sup>

Figure 1 demonstrates the variation of NSPR in 18 Latin American countries. Panama is the country with the most restrictive petition signature requirements, whereas Argentina, Venezuela and Uruguay have the most permissive requirements among the 18 countries. The Dominican Republic and Peru have similar levels of petition signature requirements in percentage of registered voters, but the absolute number of signatures required in each country is approximately 51,000 and 160,000, respectively.

Does NSPR affect a party system? Figure 2 displays the correlation between NSPR and different measures of the number of parties. It appears that NSPR has a weak correlation with the number of parties. However, it is incorrect to infer that NSPR is not useful for analysing party systems. To further examine how NSPR might affect party system fragmentation, I conduct multivariate analyses in the next sections to investigate the effects of NSPR.

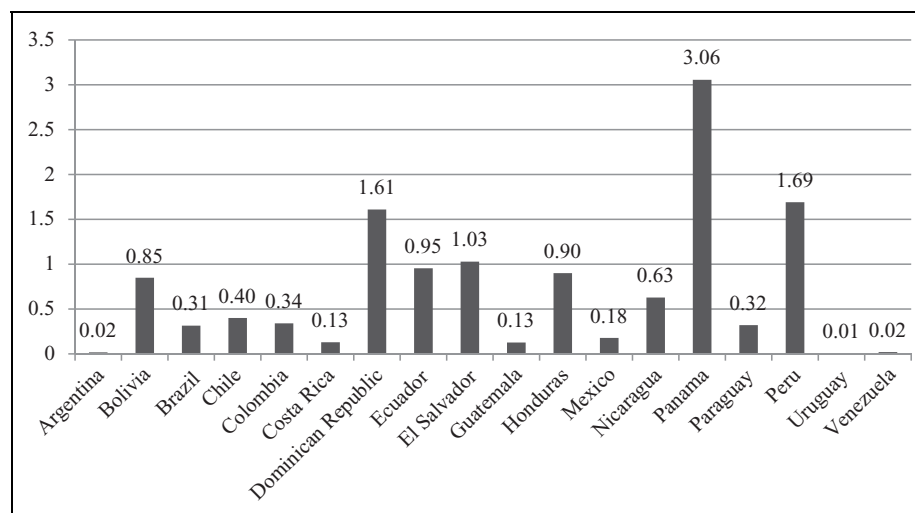
## Model specification

My primary dependent variables are ANEP and ENEP. Since ANEP is a count variable and the variance of ANEP (25.4) is more than twice its mean (10.4), a negative binomial distribution is more likely than a Poisson. Thus, I employ negative binomial regressions on this variable. In addition, I estimate ordinary least squares regressions on ENEP. Because my dataset includes multiple observations from the same country over time, observations within countries might not be truly independent, and thus the analysis entails threats of both heteroskedasticity and serial correlation. To correct for heteroskedasticity, I employ robust standard errors, clustered by country.<sup>15</sup> Moreover, I include the first lag of the dependent variable as a control to take into account any potential serial correlation of errors.

The empirical analyses test hypotheses regarding two party registration rules against the conventional explanations. My first main independent variable, NSPR, is a continuous variable that captures the degrees of party formation cost.<sup>16</sup> The other main independent variable is the spatial registration requirements, which is coded 1 if a country has such an institution and 0 otherwise. Brazil, Chile, the Dominican Republic, Ecuador (1984–1994), Guatemala, Honduras, Mexico, Nicaragua, Panama and Peru (1980–1990; 2006–2011) are coded as countries with spatial requirements for party registration.

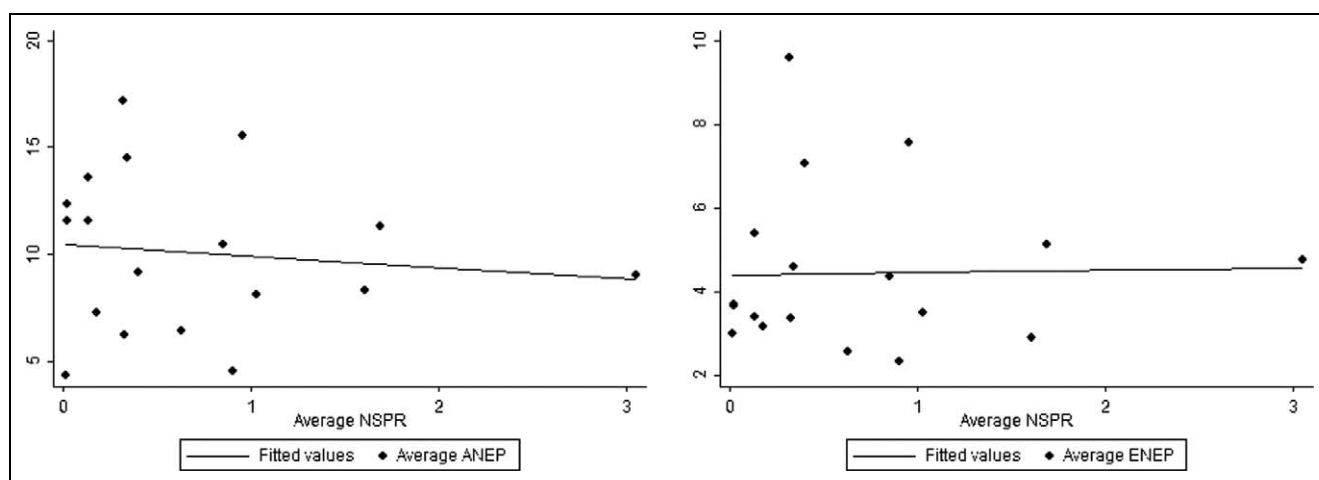
State subsidies for parties are controlled in the model as a factor that can lower the cost of entry. According to Gutierrez and Zovatto (2011), public financing for parties in Latin America can be categorized as direct subsidies or indirect subsidies. Direct subsidies are in the form of money or bonds for supporting electoral campaign activities and/or ordinary organizational activities. Indirect subsidies take various forms, such as free use of public services, tax exemptions for political donations and free advertising in state-run media. Based on Gutiérrez and Zovatto (2011: 551), I coded this variable as 0 when a country had no public subsidy rules (Bolivia 1985–1993 and 2009; Brazil 1990–1994; Colombia 1978–1982; Dominican Republic 1978–1994; Panama 1994; and Venezuela 2000–2005), 0.5 when a country only had indirect public subsidy rules (Chile 1989–2001 and Peru 1980–2001), and 1 when a country had both direct and indirect public subsidy rules.

I include the logarithmic transformation of district magnitude to control for the possibility that a larger district magnitude might encourage multipartism. Previous research has shown that the number of parties is a function of not only district magnitude but also the number of social cleavages or even the interaction of these two variables (Amorim Neto and Cox, 1997). Thus, I include average district magnitude (Wills Otero and Pérez-Liñán, 2009), ethnic fractionalization (Fearon, 2003) and an interaction term of these two variables.



**Figure 1.** Average NSPR in Latin American countries (1978–2011).

Note: NSPR indicates the required number of petition signatures as a percentage of the total number of registered voters in the previous election.



**Figure 2.** The correlation between the average NSPR and average number of parties in Latin America (1978–2011).

The next control is the timing of presidential and legislative elections. This variable is coded 1 for concurrent elections and 0 otherwise. I also control for preferential voting, which is coded 1 for countries that adopt a preferential voting system and 0 otherwise.<sup>17</sup> Another variable that I include is run-off executive electoral formula, which is coded 1 if the presidential election involves a run-off and 0 otherwise.

In addition to institutional variables,<sup>18</sup> GDP growth and the inflation rate are included as controls; these indicators are lagged by one year to capture the short-term economic impact on electoral outcomes.<sup>19</sup> Furthermore, I include two variables about electoral histories: a dummy variable for founding elections that mark a transition to democracy,<sup>20</sup> and the experience of democracy, measured by the number of years since the founding election in the country.

## Results

Table 1 reports the results from negative binomial regressions for ANEP (Model 1) and the results from OLS regressions for ENEP (Model 2). The results of Model 1 offer considerable support for my first hypothesis, showing that the petition signature requirement has a significant and negative effect on the ANEP. Contrary to the theoretical expectation, however, spatial registration rules do not significantly affect ANEP.

The control for concurrent elections attains statistical significance, suggesting that party entry in the elections tends to be lower when the presidential and legislative elections are held at the same time. The interaction of ethnic fractionalization and district magnitude has a positive and significant effect, indicating that more ethnic cleavages are positively

**Table 1.** Effects of party registration rules on the number of electoral parties.

Variable	Model 1 Absolute number of electoral parties (ANEP)	Model 2 Effective number of electoral parties (ENEP)
No. of signatures as a percentage of registered voters (NSPR)	-0.131** (0.044)	-0.423** (0.104)
Spatial registration rule	-0.090 (0.071)	0.215 (0.233)
State subsidies for parties	0.057 (0.130)	0.484 (0.565)
District magnitude	-0.265** (0.085)	-0.275 (0.175)
Ethnic fractionalization	-0.385 (0.416)	0.086 (1.004)
District magnitude x ethnic fractionalization	0.498* (0.207)	0.620 (0.492)
Presidential run-off	0.159 (0.092)	0.316 (0.194)
Concurrent elections	-0.121* (0.057)	-0.006 (0.275)
Preferential voting	0.055 (0.057)	0.369 (0.268)
GDP growth <sub>t-1</sub>	-0.001 (0.006)	-0.048 (0.026)
Inflation <sub>t-1</sub>	-0.004 (0.018)	-0.092 (0.067)
Founding election	0.181 (0.112)	0.687 (0.470)
Length of democracy	0.004 (0.003)	-0.013 (0.007)
ANEP <sub>t-1</sub>	0.036*** (0.005)	—
ENEP <sub>t-1</sub>	—	0.717*** (0.061)
Constant	2.185*** (0.234)	1.394 (0.762)
Log pseudo-likelihood	-318.29	—
Alpha	0.021 (0.017)	—
Wald chi <sup>2</sup> (14)	757.68	—
Prob > chi <sup>2</sup>	0.000	—
Clusters	18	18
Observations	123	123
Adjusted R <sup>2</sup>	—	0.756

Entries of Model 1 are negative binomial regression coefficients, while entries of Model 2 are unstandardized OLS coefficients. Clustered robust standard errors are given in parentheses (two-tailed tests). \* $p \leq 0.05$ .

\*\* $p \leq 0.01$ . \*\*\* $p \leq 0.001$ .

associated with ANEP under a larger district magnitude. The interpretation of the negative and significant coefficient of district magnitude is not straightforward because of the inclusion of the interaction term. The result suggests that in a

society where no ethnic cleavage exists (ethnic fractionalization equals zero), a larger district magnitude decreases the number of parties.

The findings from Model 2 also demonstrate that the petition signature requirement has a negative and significant effect on the effective number of electoral parties. This shows that a more restrictive petition signature requirement helps reduce the number of parties, even if the dependent variable is operationalized in a different way. Similar to the results in Model 1, a spatial registration requirement does not significantly affect ENEP. Contrary to previous studies, state subsidies for parties, economic performance, run-off systems and preferential voting systems do not appear to be significant predictors of party system fragmentation in my sample. Founding election and the length of democracy also do not exhibit significant effects on ANEP or ENEP.

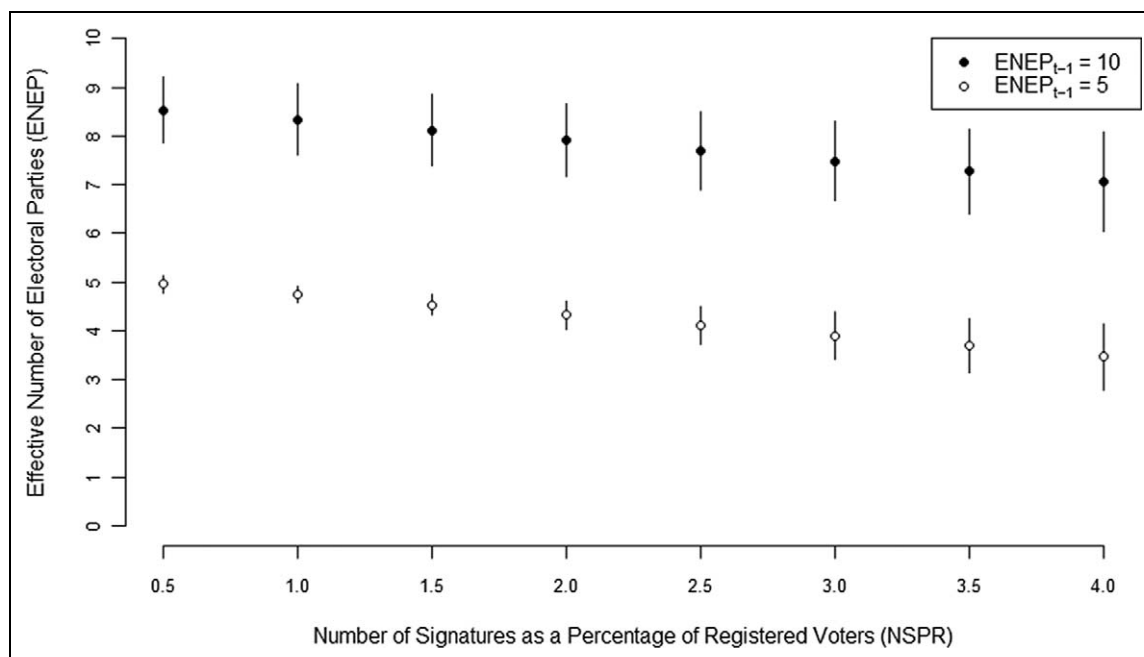
To better understand the substantive effect of NSPR, I employ a simulation technique (King et al., 2000; Tomz et al., 2003) to predict ENEP at various levels of NSPR. Figure 3 reports results of simulations for ENEP<sub>t-1</sub> at 10 (a highly fragmented party system) and at 5 (a moderately fragmented party system) in the beginning, with all other independent variables at their means. In both scenarios, higher values of NSPR correspond to lower values of ENEP, suggesting that more stringent party registration rules might reduce the effective number of electoral parties.

### Robustness tests

To ensure that my findings are not sensitive to coding decisions for the independent variable, I recode my petition signature requirement as the number of signatures as a percentage of valid votes in the previous election. Unlike NSPR, which is weighted by the number of registered voters, the new measure of the petition signature requirements is weighted by the number of valid votes. The results of the re-estimation are consistent with those reported in Table 1. Results are also substantively unchanged when I substitute the ethnic fractionalization measure by Fearon (2003) with a similar measure from Alesina et al. (2003).

Finally, to ensure that my findings of ENEP in Table 1 are not driven by extreme cases, I conducted a series of diagnostic tests to identify outliers. Based on predicted standardized residuals and studentized residuals, Brazil 2006, Brazil 2010, Ecuador 1984 and Ecuador 1986 elections are clear outliers that have unusual values of ENEP. The overall influence test based on Cook's Distance measure also confirms that they are the most influential observations. I include a dummy for each of these three observations and re-estimate the model. The results reveal that the effect of petition signature requirements is not driven by these extreme cases.





**Figure 3.** Predicted effective number of electoral parties at different levels of NSPR.

Notes: The dots are point estimates and the lines represent 95 percent confidence intervals.

### Selection issues

A potential threat to the inference for my analysis stems from the possibility that electoral institutions are not exogenous to party system characteristics (Benoit, 2007; Remmer, 2008). This may be particularly true for the case of petition signature requirements because political elites in many Latin American countries often chose to adopt reforms in making this institution more restrictive in order to reduce the level of party system fragmentation. Another endogeneity issue pertains to certain latent variables that link the petition signature requirement with the number of parties. For instance, Catón and Tuesta Soldevilla's (2008: 153) case study of Peru shows that restrictive registration rules may not work in an expected way if the electoral authority in charge of the registration process fails to rigorously verify whether the applicants met all the necessary requirements or not. Thus, how the petition signature requirements affect party systems may depend on how well the electoral authority implements the laws. Without taking into account this latent variable, my OLS results on ENEP might be flawed.

A stronger test of the causal order between these variables can be performed by using instrumental variable regression. I use the degree of density of registered voters in a country as an instrument for NSPR. For my purposes, a valid instrument should be a good predictor of petition signature requirements but should have no direct effect on the number of parties. The density of registered voters, operationalized as the total number of registered voters in a country divided by the country's territorial area, meets both criteria. The relevance of this instrument suggests that in a

densely populated environment it should be less costly in terms of time, manpower and organizing efforts for the applicants of new parties to look for registered voters to collect their signatures, holding other factors constant. Hence, it is expected that the signature requirement might be more restrictive to counterbalance the relatively low party formation cost resulting from higher levels of registered voter density. At the same time, there is no reason to suspect a link between the number of parties and the degree of registered voter density in a country.

I use the instrumental variable approach to re-estimate the equations of Model 1. Results indicate that the selection is not driven by my main finding: the petition signature requirement has a significant and negative effect on ENEP.<sup>21</sup> In short, the results of the instrumental approach mirror those of Table 1. Overall, I am confident that my findings are robust to different model specifications.

### Conclusion

This study is motivated by the lack of comparative examination on party registration rules and their effects in Latin America. Using an original dataset on petition signature requirements and spatial requirements for party registration, I systematically compare the persistence and change of these institutions in Latin America from 1978 to 2011. In addition, I empirically test the effects of this institution on Latin American party systems, showing that a more restrictive petition signature requirement significantly reduces the number of parties, while a spatial registration

requirement does not. To my knowledge, this article is the first empirical study of the effects of party registration rules on party system development in this region.

My findings carry important substantive and theoretical implications. The results suggest that petition signature requirements pose a party formation cost on political elites' strategic behaviour in entering the electoral arena. Because such an institution involves trade-offs between representation and accountability, one implication of this study for institutional engineers is that a careful design of party registration rules can help shape the development of party systems in a particular way.

In addition, my findings highlight the theoretical relevance of pre-election institutional factors. The standard institutional-sociological models of party system analyses largely focus on the institutions that can affect electoral dynamics only *after* the parties have been formed, such as

district magnitude and run-off systems. Without taking into account party registration rules, however, research using the conventional models is likely to be biased. My new data therefore help correct possible omitted variable bias and will be a useful resource for future electoral studies.

This study creates new opportunities for a broader research agenda for electoral systems. One extension of my analyses is to explore the interactive effects of party registration rules with other institutional factors on party systems. Are restrictive petition signature requirements more effective in reducing the number of parties in different institutional contexts? How do such requirements interact with other institutions to help soften the representation-accountability trade-off and achieve both objectives? These questions remain to be explored for a more nuanced understanding of how party formation costs condition party politics

## Appendix I. Party registration rules and lower house elections in Latin America (1978–2011)<sup>a</sup>

Country	Lower house election years	Minimum number of signatures required for registering a party for national lower house elections
Argentina	1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011	District (Provincial) party: A number of signatures that equals 0.4% of registered voters in a district in the previous lower house election (about 0.017% of registered voters at the national level). National party: Fulfil the requirement of being a regional party in at least five districts.
Bolivia	1985, 1989, 1993 1997 2002, 2005, 2009	A number of signatures that equals 0.5% of valid votes in the previous general election. A number of signatures that equals 1% of valid votes in the previous general election. Political party/political movement: A number of signatures that equals 2% of valid votes in the previous general election.
Brazil	1998, 2002, 2006, 2010	A number of signatures that equals 0.5% of valid votes in the previous general election, with 101 founders living in at least one-third of the states.
Chile	1989, 1993, 1997, 2001, 2005, 2009	A number of signatures that equals 0.5% of valid votes in the previous lower house election in each of the eight regions that serve as this new party's base for registration, or in each of the three geographically adjoining regions that serve as this new party's base for registration.
Colombia	1986, 1990 1991, 1994, 1998, 2002 2006, 2010	10,000 signatures of registered voters. 50,000 signatures of registered voters. A number of signatures that equals 2% of valid votes in the previous lower house election. <sup>b</sup>
Costa Rica	1978, 1982, 1986, 1990, 1994, 1998, 2002, 2006 2010	Provincial party: A number of signatures that equals 0.1% of registered voters in one district in the previous lower house election (about 0.014% of registered voters at the national level). National party: 3,000 signatures of registered voters. Provincial party: 1,000 signatures of registered voters in a district. National party: 3,000 signatures of registered voters.

(continued)

(continued)

Country	Lower house election years	Minimum number of signatures required for registering a party for national lower house elections
Dominican Republic	1978, 1982, 1986, 1990, 1994 1998, 2002, 2006, 2010	A number of signatures that equals 3% of valid votes in the previous lower house election. A number of signatures that equals 2% of valid votes in the previous lower house election. <sup>c</sup>
Ecuador	1984, 1986, 1988, 1990, 1992, 1994 1996, 1998, 2002, 2006, 2009	Political party/political movement: 0.5% of the registered voters in the previous lower house election, being organized in at least 10 provinces with two of them from the most populous three provinces in the country. Political party: A number of signatures that equals 1.5% of the registered voters in the previous lower house election, being organized in at least 10 provinces with two of them from the most populous three provinces in the country. Political movement: A number of signatures that equals 1.5% of registered voters in the previous lower house election with no spatial requirements.
El Salvador	1988, 1991 1994, 1997, 2000, 2003, 2006, 2009	3,000 signatures of registered voters. A number of signatures that equals 3% of valid votes in the previous lower house election.
Guatemala	1999, 2003 2007, 2011	2,000 signatures of registered voters with half of them being literate, being organized in 50 municipalities in at least 12 departments. A number of signatures that equals 0.3% of registered voters in the previous lower house election, being organized in 50 municipalities in at least 12 departments.
Honduras	1985 1989, 1993, 1997, 2001 2005, 2009	10,000 signatures of registered voters in the previous lower house election. 20,000 signatures of registered voters in the previous lower house election. 50 founders + a number of signatures that equals 2% of valid votes in the previous lower house election. <sup>d</sup>
Mexico	1997, 2000, 2003 2006, 2009	A number of signatures that equals 0.13% of registered voters in the previous election, with 3,000 members in at least 10 states or 300 members in at least 100 of the single member electoral districts. A number of signatures that equals 0.26% of registered voters in the previous election, with 3,000 members in at least 20 states or 300 members in at least 200 of the single member electoral districts.
Nicaragua	1990 1996 2001 2006, 2011	9 members at the national level, 7 members in each of the 9 regions, 7 members in each of the 15 departments and 5 members in each of the 153 municipalities. 9 national committee members, 7 members in each of the 17 departments/autonomous regions and 5 members in at least half of the 153 municipalities. A number of signatures that equals 3% of registered voters in the previous election, plus 9 national committee members, 7 members in each of the 17 departments/autonomous regions and 5 members in each of the 153 municipalities. 9 national committee members, 7 members in each of the 17 departments/autonomous regions and 5 members in each of the 153 municipalities.
Panama	1999 2004, 2009	A number of signatures that equals 5% of valid votes in the previous presidential election. A number of signatures that equals 4% of valid votes in the previous lower house election. <sup>e</sup>
Paraguay	1993 1998, 2003, 2008	A number of signatures that equals 0.5% of valid votes in the previous presidential election. A number of signatures that equals 0.5% of valid votes in the previous Senate election.

(continued)

(continued)

Country	Lower house election years	Minimum number of signatures required for registering a party for national lower house elections
Peru	1980	40,000 signatures of registered voters, with party committees organized in at least half of the departments.
	1985, 1990	100,000 signatures of registered voters, with party committees organized in at least half of the departments.
	2000	A number of signatures that equals 4% of registered voters in the previous election.
	2001, 2006	A number of signatures that equals 1% of total votes in the previous general election.
	2011	A number of signatures that equals 3% of total votes in the previous general election. <sup>f</sup>
Uruguay	1989, 1994, 1999, 2004	500 affiliated members from registered voters.
	2009	A number of signatures that equals 0.05% of registered voters in the previous election.
Venezuela	1978, 1983, 1988, 1993, 1998, 2000, 2005	Regional party: A number of signatures that equals 0.5% of registered voters in one state in the previous lower house election (about 0.02% of registered voters at the national level). National party: An authentic certificate showing that the party has been organized in at least 12 states.

Sources: Nohlen et al. (2007); Zovatto (2006); Zovatto and Orozco Henríquez (2008); Kenneth Janda's Database of Party Laws ([www.ndi.org/db](http://www.ndi.org/db)); the Global Legal Information Network ([www.glin.gov](http://www.glin.gov)); Justia ([www.justia.com](http://www.justia.com)), and the Political Database of the Americas (<http://pdba.georgetown.edu/>).

<sup>a</sup>For the sake of space, I exclude legal information for each requirement, such as law numbers. This information is available upon request.

<sup>b</sup>This rule applies only to parties that seek benefits such as access to state media and public financing (Hernández Becerra, 2006: 345).

<sup>c</sup>Between 1978 and 2010, a party must be organized in each of the chief municipalities of the provinces and the National District.

<sup>d</sup>Between 1981 and 2009, a party must be organized in at least half of the municipalities and half of the departments.

<sup>e</sup>From 1989 to 2009, a party must have no less than 15 affiliated members in at least 40% of total districts, 20 members in each of the 9 provinces and 10 members in each of the 5 indigenous regions (Comarca).

<sup>f</sup>The spatial registration requirement was dropped in 1993 and resumed in 2003. For the 2006 and 2011 elections, a party must organize committees with each comprised of 50 affiliated members in at least one-third of the provinces located within two-thirds of the departments.

## Appendix 2. Notes on converting a constituency-level NSPR to a national-level NSPR

In order to make countries that use constituency-level NSPR comparable to other countries that use national-level NSPR for the purpose of empirical tests, I converted the constituency-level NSPR by dividing it by the number of constituencies. The derived outcome indicates the average national-level NSPR. For instance, registering a district party in Argentina for national lower house elections requires a number of signatures that is no less than 0.4% of registered voters in the district. Since Argentina has 24 electoral districts (provinces), the average national-level NSPR will be 0.017% (which equals 0.4% divided by 24), indicating that registering a party in Argentina requires an average number of signatures that is no less than 0.017% of registered voters.

Here, I provide a simple example to illustrate the logic of the conversion from a constituency-level NSPR to a national-level NSPR. Suppose that a country has four districts, and the registered voters in district A, B, C and D are 100, 200, 300 and 400, respectively. If registering a district party for running in national lower house elections requires a number of signatures that is no less than 10% of the registered voters in a district,

it then requires 10 registered voters' signatures to form a party in district A, 20 signatures to form a party in district B, 30 signatures to form a party in district C and 40 signatures to form a party in district D. Hence, it requires an average of 25 signatures (the average of 10+20+30+40), or 2.5% of registered voters in the country, to form a district party.

Therefore, a constituency-level NSPR of 10% is equivalent to a national-level NSPR of 2.5% in this country. When the data on constituency-level registered voters are unavailable, one can simply divide the constituency-level NSPR (10%) by the number of districts (4) to derive the average national-level NSPR. This conversion is not perfect because it fails to take into account the different degrees of the restrictiveness of signature requirements within a country. For instance, it should be easier to form a party in district A than in district D, *ceteris paribus*. Still, using this conversion method facilitates the comparison of petition signature requirements between countries.

## Acknowledgements

I thank Ignacio Arana for his valuable suggestions on earlier versions of this study. Additionally, I thank Scott Morgenstern, Aníbal Pérez-Liñán, Lawrence Zigerell, and the journal's anonymous referees for their helpful comments. All remaining errors are my responsibility.

## Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

## Notes

1. I thank an anonymous reviewer for this point.
2. Previous literature suggests that fees or a monetary deposit for party registration is an important factor when analysing party system development. To the best of my knowledge, however, systematic data about this variable are unavailable in the existing Latin American party system literature.
3. See Lewis-Beck and Stegmaier (2000) for an overview on economic voting literature.
4. Paraguay changed the petition signature requirement in its Electoral Code of 1996, but the change was moderate (see Appendix 1).
5. On 8 November 2002, Nicaragua's Supreme Court in its *Sentencia* No. 103 declared unconstitutional and inapplicable the petition signature requirement of 3 percent of registered voters' signatures (Álvarez, 2006: 649). Thus, this 3 percent rule was applied in the 2001 election only.
6. Because the political dynamics in presidential elections and legislative elections are different, I do not compare elections across the two settings. Focusing on lower house elections makes my study comparable to most empirical work on party system development.
7. The cut-off Polity IV score of 5 follows Quackenbush and Rudy (2009).
8. An alternative measure of party system fragmentation is the number of parties that gained one or more seats in the legislature (legislative parties). I estimated regressions on the absolute number of legislative parties (ANLP) and effective number of legislative parties (ENLP) (the results are available upon request). The results show that NSPR has a significant effect on reducing ANLP while it has no significant effect on ENLP. The non-result for ENLP makes sense because there exists a selection effect from being a party that is allowed to run in the election to a party that wins seats in the legislature. Since the effect of NSPR comes prior to the effect of electoral system, NSPR should not have an independent effect on ENLP. I thank an anonymous reviewer for this point.
9. I re-estimated the regressions using a count of parties that received at least 1% of the votes as the dependent variable. The effect of the petition signature requirement remains substantively unchanged, suggesting that the results are not driven by the choice of cut-off point.
10. The ENEP is calculated as  $N = 1/\sum v_i^2$ , where  $N$  is the effective number of electoral parties, and  $v_i$  is the vote-share of the  $i$ th party in the lower house election.
11. I also estimated regressions on the data for effective number of parties provided by Carey and Hix (2011). Results are substantively similar.
12. For countries using the second subtype, NSPR is calculated as the required absolute number of signatures divided by the total number of registered voters in the previous election. For countries using the third subtype, I first multiplied the required percentage rule by the number of valid votes in the previous election to obtain the absolute number of signatures required; then I divided this number by the total number of registered voters to calculate NSPR. Last, for countries using the fourth subtype, I multiplied the required percentage rule by the total number of votes in the previous election to derive the absolute number of signatures required; then I divided this number by the total number of registered voters to calculate NSPR.
13. Chile, the Dominican Republic, Honduras and Panama allow independent candidates registered at the constituency level to run in national legislative elections. However, since I focus on the number of parties rather than candidates, I consider only these countries' registration rules for parties.
14. An anonymous reviewer suggests I use constituency as a unit of analysis when a country allows party formation at the constituency level. I did not do so because most countries allow the formation of national parties only. Moreover, using constituency as a unit of analysis requires data collection at the constituency level, which is beyond the scope of this study. My way of converting the district-level NSPR to national-level NSPR is not perfect, but I believe that it makes sense.
15. My panel dataset is unbalanced and has too few time periods to employ regressions with panel-corrected standard errors (Beck, 2001). Fixed effects cannot be used because the variables of ethnic fractionalization are time invariant.
16. Because I impose no coding criteria as to the effect of petition signature requirements on the outcome of the election, my measure of the independent variable is not endogenous to the dependent variable.
17. I use Payne et al. (2007) and Wills-Otero and Pérez-Liñán (2005) to code this variable.
18. Ideally, I should control for electoral threshold in the empirical analyses. Beck et al. (2003) have data for this variable for many countries in the world, but unfortunately the data are incomplete for most Latin American countries. I have used imputation to deal with missing data for the variable, included this variable when re-estimating the model, and found that my major results do not change significantly.
19. The data for the two indicators are coded from the World Development Indicators (WDI). I took the natural log of the inflation rate to prevent a small number of cases of hyperinflation from skewing the results. When there is deflation, I first converted the negative inflation rate to the positive value, took the natural log of that value and then placed a negative sign on it.
20. Data for founding election year are from Huntington (1991: 275) and Power and Garand (2007).
21. The model shows that the F-test statistic in the first stage is larger than 10, indicating that the instrument is not weak (Staiger and Stock, 1997). Another weak instrument test shows that the Cragg–Donald statistic (Cragg and Donald, 1993), which is the smallest eigenvalue of the matrix analogue of the F-statistic from the first-stage regression, exceeds the Stock–Yogo critical values (Stock and Yogo, 2005) for a model with one



endogenous regressor and one instrument, which is 16.38. This test strongly rejects the null hypothesis of weak instruments.

## References

- Alesina A, Devleeschauwer A, Easterly W, et al. (2003) Fractionalization. *Journal of Economic Growth* 8: 155–194.
- Álvarez G (2006) Regulación Jurídica de Los Partidos Políticos en Nicaragua. In: Zovatto GD (ed.) *Regulación Jurídica De Los Partidos Políticos En América Latina*. México: IDEA Internacional, 641–670.
- Amorim Neto O and Cox GW (1997) Electoral institutions, cleavage structures, and the number of parties. *American Journal of Political Science* 41: 149–174.
- Beck N (2001) Time-series-cross-section data: What have we learned in the past few years? *Annual Review of Political Science* 4: 271–293.
- Beck T, Clarke GR, Groff A, Keefer P and Walsh P (2003) New tools in comparative political economy: The database of political institutions. *World Bank Economic Review* 15: 165–176.
- Benoit K (2007) Electoral laws as political consequences: Explaining the origins and change of electoral institutions. *Annual Review of Political Science* 10: 363–390.
- Birch S (2003) *Electoral Systems and Political Transformation in Post-Communist Europe*. New York: Palgrave Macmillan.
- Birnir JK (2004) Stabilizing party systems and excluding segments of society? The effects of formation costs on new party foundation in Latin America. *Studies in Comparative International Development* 39: 3–27.
- Bischoff CS (2011) New parties in advanced democracies: Causes and barriers to participation. *Working Paper Series on the Legal Regulation of Political Parties*, No. 11.
- Carey JM and Hix S (2011) The electoral sweet spot: Low-magnitude proportional electoral systems. *American Journal of Political Science* 55: 383–397.
- Catón M and Tuesta Soldevilla F (2008) Political parties in conflict-prone societies in Latin America. In: Reilly B and Nordlund P (eds) *Political Parties in Conflict-Prone Societies: Regulation, Engineering and Democratic Development*. New York: United Nations University Press, pp. 126–157.
- Coppedge M (1997) District magnitude, economic performance, and party-system fragmentation in five Latin American countries. *Comparative Political Studies* 30: 156–185.
- Cox GW (1997) *Making votes count: strategic coordination in the world's electoral systems*. Cambridge: Cambridge University Press.
- Cragg JG and Donald SG (1993) Testing identifiability and specification in instrumental variable models. *Econometric Theory* 9: 222–240.
- Donno D and Roussias N (2012) Does cheating pay? The effect of electoral misconduct on party systems. *Comparative Political Studies* 45: 575–605.
- Duverger M (1954) *Political Parties, their Organization and Activity in the Modern State*. New York: Wiley.
- Fearon JD (2003) Ethnic and cultural diversity by country. *Journal of Economic Growth* 8: 195–222.
- Gallagher M and Mitchell P (eds) (2008) *The Politics of Electoral Systems*. Oxford: Oxford University Press.
- Gauja A (2010) *Political Parties and Elections: Legislating for Representative Democracy*. Burlington: Ashgate.
- Gutiérrez P and Zovatto D (eds) (2011) *Financiamiento de los Partidos Políticos en América Latina*. Washington, D.C.: Instituto Internacional para la Democracia y la Asistencia Electoral.
- Harmel R and Robertson JD (1985) Formation and success of new parties. *International Political Science Review* 6: 501–523.
- Hernández Becerra, A (2006) Regulación Jurídica De Los Partidos Políticos En Colombia. In Daniel Zovatto G. (ed.), *Regulación Jurídica De Los Partidos Políticos En América Latina*. México: IDEA Internacional, 331–366.
- Hicken A (2008) Political engineering and party regulation in Southeast Asia. In: Reilly B and Nordlund P (eds) *Political Parties in Conflict-Prone Societies: Regulation, Engineering and Democratic Development*. New York: United Nations University Press, 69–94.
- Hug S (2001) *Altering Party Systems: Strategic Behavior and the Emergence of New Political Parties in Western Democracies*. Ann Arbor, MI: University of Michigan Press.
- Huntington SP (1991) *The Third Wave: Democratization in the Late Twentieth Century*. Norman, OK: University of Oklahoma Press.
- Jones MP (1995) *Electoral Laws and the Survival of Presidential Democracies*. Notre Dame: University of Notre Dame Press.
- Karvonen L (2004) Preferential voting: Incidence and effects. *International Political Science Review* 25: 203–226.
- Katz RS and Mair P (1995) Changing models of party organization and party democracy: The emergence of the cartel party. *Party Politics* 1: 5–28.
- Katz RS and Mair P (2009) The cartel party thesis: A restatement. *Perspectives on Politics* 7: 753–766.
- King G, Tomz M and Wittenberg J (2000) Making the most of statistical analyses: Improving interpretation and presentation. *American Journal of Political Science* 44: 347–361.
- Laakso M and Taagepera R (1979) Effective number of parties: A measure with application to West Europe. *Comparative Political Studies* 12: 3–27.
- Lewis-Beck MS and Stegmaier M (2000) Economic determinants of election outcomes. *Annual Review of Political Science* 3: 183–219.
- Lijphart A (1999) *Patterns of Democracy: Government Forms and Performance in Thirty-six Countries*. New Haven, CT: Yale University Press.
- Marshall MG, Jagers K and Gurr T (2011) *Polity IV Project: Political Regime Characteristics and Transitions, 1800–2010*. College Park, MD: Center for International Development and Conflict Management, University of Maryland. Available at: [www.systemicpeace.org/polity/polity4.htm](http://www.systemicpeace.org/polity/polity4.htm).
- Molenaar F (2012) Latin American regulation of political parties: Continuing trends and breaks with the past. Working Paper Series on the Legal Regulation of Political Parties, No. 17.

- Nohlen D (ed.) (2005) *Elections in the Americas: A Data Handbook*, vols. 1–2. New York: Oxford University Press.
- Nohlen D, Zovatto D, Orozco J and Thompson J (eds) (2007) *Tratado de Derecho Electoral Comparado de América Latina*. Mexico, D.F.: Instituto Federal Electoral.
- Norris P (2005) *Radical Right: Voters and Parties in the Electoral Market*. Cambridge: Cambridge University Press.
- Osborne MJ and Slivinski A (1996) A model of political competition with citizen-candidates. *Quarterly Journal of Economics* 111: 65–96.
- Payne JM, Zovatto D and Díaz MM (2007) *Democracies in Development: Politics and Reform in Latin America*. Washington, D.C.: Inter-American Development Bank.
- Powell GB (2000) *Elections as Instruments of Democracy*. New Haven, CT: Yale University Press.
- Power TJ and Garand JC (2007) Determinants of invalid voting in Latin America. *Electoral Studies* 26: 432–444.
- Quackenbush SL and Rudy M (2009) Evaluating the monadic democratic peace. *Conflict Management and Peace Science* 26: 268–285.
- Rashkova E (2010) Political learning and the number of parties: Why age matters. PhD Thesis, University of Pittsburgh, USA.
- Remmer KL (2008) The politics of institutional change: Electoral reform in Latin America, 1978–2002. *Party Politics* 14: 5–30.
- Rosenstone SJ, Behr RL and Lazarus EH (1996) *Third Parties in America*. Princeton, NJ: Princeton University Press.
- Scarrow S (2006) Party subsidies and the freezing of party competition: Do cartel mechanisms work? *West European Politics* 29: 619–639.
- Shugart MS and Carey JM (1992) *Presidents and Assemblies: Constitutional Design and Electoral Dynamics*. Cambridge: Cambridge University Press.
- Staiger D and Stock JH (1997) Instrumental variables regression with weak instruments. *Econometrica* 65: 557–586.
- Stock JH and Yogo M (2005) Testing for weak instruments in linear IV regression. In: Andrews DWK and Stock JH (eds) *Identification and Inference for Econometric Models*. Cambridge: Cambridge University Press, 80–108.
- Taagepera R and Shugart MS (1989) *Seats and Votes: The Effects and Determinants of Electoral Systems*. New Haven, CT: Yale University Press.
- Tavits M (2006) Party system change: Testing a model of new party entry. *Party Politics* 12: 99–119.
- Tavits M (2008) Party systems in the making: The emergence and success of new parties in new democracies. *British Journal of Political Science* 38: 113–133.
- Tomz M, Wittenberg J and King G (2003) *CLARIFY: Software for Interpreting and Presenting Statistical Results*. Version 2.1. Stanford University, University of Wisconsin and Harvard University. Available at: <http://gking.harvard.edu/>.
- Van Biezen I and Rashkova E (2011) Breaking the cartel: The effect of state regulation on new party entry. Working Paper Series on the Legal Regulation of Political Parties, No. 12.
- Van Cott DL (2005) *From Movements to Parties in Latin America: the Evolution of Ethnic Politics*. Cambridge: Cambridge University Press.
- Wills Otero L and Pérez-Liñán A (2005) La Evolución de Los Sistemas Electorales en América: 1900–2004. *Colección* 16: 47–82.
- Wills Otero L and Pérez-Liñán A (2009) *Electoral Systems in the Americas, 1900–2008* (Version 3). Department of Political Science, University of Pittsburgh.
- Zovatto D (ed.) (2006) *Regulación jurídica de los partidos políticos en América Latina*. México: IDEA Internacional.
- Zovatto D and Orozco Henríquez J (eds) (2008) *Reforma política y electoral en América Latina 1978–2007*. México: IDEA Internacional.

### Author biography

**Yen-Pin Su** is a PhD candidate in the Department of Political Science at the University of Pittsburgh. His research focuses on political parties, elections, and social movements in Latin America and East Asia. His book, ‘Social Movements and Democratization in Mexico’, was published by the Taiwan International Studies Association in 2006 (in Chinese).