

Candidate nomination procedures and political selection: evidence from Latin American parties

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Abstract

This paper explores empirically the role of nomination procedures on political selection and the determinants for adopting contestable selection methods such as primaries. Using data from Latin American parties, I find evidence that political competition increases probability of primary adoption. Moreover, primary nominated candidates obtained larger vote shares and during their mandate countries experienced improvements in several measures of quality of government. The results exploit within party variation and are robust to relevant identification concerns. Together, these findings suggest that nomination procedures matter for political selection and that the quality differences are significant enough to influence electoral and economic outcomes.

Keywords: Primaries, political selection, political competition, quality of politicians.

JEL classification: D72, D73, H39, O12

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1 Introduction

Good governance is regarded as a crucial prerequisite for economic development and growth (Jones and Olken, 2005; Besley et al., 2005). To achieve it, most emphasis has been given to the role of institutions that shape politician's incentives. However, another key element of the quality of government is to have an honest, competent political class (Besley, 2006).

Nonetheless the process to select good politicians (or to avoid selecting bad ones) is still not well understood. The economic literature on political selection suggests that competitive elections, informative media and adequate rewards from office play a part on improving quality of politicians (Besley, 2005). But less is known about the role of political parties. This contrasts with the political science literature which considers parties as central actors in the selection process (Bille, 2001). They do not only train and recruit politicians, but also nominate the candidates able to participate in elections. By controlling the entry to the political arena, they effectively define the set of politicians from which voters can choose.

In practice, political parties use different institutions to select their candidates. A key difference among them is the degree of democracy or participation of other stakeholders in the selection process (Gallagher and Marsh, eds, 1988; Bille, 2001; Hazan and Rahat, 2006). For example Janda (1980) reports the methods used to select national leaders in a global sample of political parties (see Table 1). The cases range from relatively democratic procedures such as direct election by party members to less participative methods like nomination by the incumbent party leader. Given this institutional heterogeneity, a relevant question is whether candidate nomination procedures matter for political selection.

However, a main challenge to answer this question is that in most countries choosing the nomination method remains a party decision (Serra, 2007) and thus it may be endogenous to the political process¹. Hence, as a preliminary step we need to understand why parties adopt a particular nomination procedure.

This paper explores empirically the role of nomination procedures on

¹The endogeneity of candidate selection methods has long been noted by political scientists who consider it one of the most important party decisions, even more than writing the manifesto, and a main feature to understand the internal balance of power (Katz, 2001; Lundell, 2004).

political selection and the determinants of party institutional adoption. The empirical strategy exploits a novel panel data of Latin American parties with information on the procedures to nominate presidential candidates, electoral outcomes and both party and candidate characteristics. The data is complemented with several measures of quality of government at country level.

Motivated by the Latin American case, I first develop a stylized model of endogenous institutional adoption in which party members choose between two alternative candidate selection methods: a contestable internal election or nomination by the incumbent party leader. For simplicity I call these procedures primary and caucus respectively.

The model provides testable predictions regarding determinants of institutional adoption and its effect on electoral performance and quality of candidates. In particular, it suggests that inter-party political competition may provide incentives to adopt contestable nomination procedures and, given the opportunity, to replace the incumbent candidate for a better politician. However, the incentives from political competition are attenuated by the loyalty or ideological attachment of party members to the incumbent candidate.

Secondly, I take the model predictions to the data and evaluate the determinants of primary adoption as well as the differences in political and economic outcomes between primary and non-primary nominated candidates. I exploit within party variation to explore primary determinants and effect on electoral performance. This feature allow me to control for unobserved time-invariant party characteristics and to address relevant concerns of bias due to omitted variables.

The empirical evidence supports the existence of a positive and significant relation between political competition and primary adoption. In average, an increase of one standard deviation in the measure of political competition increases the probability of using a primary in 5%. However the effect becomes insignificant when the candidate is the party founder or when a party is less than 10 years old. I argue that these variables reflect cases in which the loyalty or attachment of the party members towards the incumbent candidate is not too strong. Under that interpretation, these findings suggest that the internal bias towards the incumbent candidate may attenuate the incentives created by political competition.

In terms of electoral performance, I find that primary-nominated candidates obtain a larger vote share. The magnitude of the vote increase for the average candidate is 6%, a sizeable gain considering that the average vote share is 34%. More interestingly, the vote premium is decreasing on the partisan support of the candidate’s party. These findings are consistent with the electoral motivation to adopt a more contestable nomination method and with primary-nominated candidates having a better quality that broadens the party appeal among non-partisan voters. However they are mute regarding the relevance of political selection on economic policies.

To explore whether candidate differences due to the nomination procedure are economically relevant, I restrict the sample to appointed presidents and evaluate whether the quality of government differ between primary and non-primary nominated politicians. As measures of quality of government I use political risk assessments related to government anti-diversion policies, investment conditions, corruption and involvement of the military in politics. The empirical strategy exploits variation on the selection method across presidents’ parties and uses an instrumental variable approach to address relevant identification concerns. Based on the model and the empirical results on primary determinants, I use political competition interacted with party characteristics as an instrument for the nomination process.

The results suggest that during the mandate of primary-nominated presidents, the measures of political risk improved by almost one standard deviation. Overall, these findings are consistent with the argument of primaries enhancing candidate selection and, through this channel, having a positive effect on the quality of government.

Table 1: Selecting the national leader

Leader selected by	Nr.	%
Party members	1	0.8
National convention or congress	39	31.7
Parliamentary delegation of the party.	10	8.1
Party council	39	31.7
Incumbent leader	34	27.6
Total	123	100.0

Source: Janda (1980, p. 110).

1.1 Related literature

Previous work has emphasized the effect of selection methods on quality of policy platforms and on divergence from the median voter. Caillaud and Tirole (2002) develop a model in which candidate's effort can improve quality of policies and use it to identify the optimal candidate selection method. Their model suggests that competitive primaries coupled with high inter-party political competition dilute incentives to improve platform design. In their view, too much competition can be suboptimal. This paper complements their argument suggesting that political competition creates incentives to adopt competitive selection methods and improve political selection. In turn, the better quality can compensate for the lower investment on policy design.

Jackson et al. (2007) present a model linking different nomination processes to policy outcomes. They show that with exogenously determined parties both nomination by the party leader or by party members generate policy divergence from the median voter. However, the differences disappear when parties are endogenous. In a related work, Gerber and Morton (1998) find evidence that U.S. representatives from States with more closed primaries take policy positions further from the median-voter's ideal position. However, to the best of my knowledge there is no empirical study relating candidate selection methods to quality of government.

The literature on determinants of candidate selection methods is mostly theoretical. Earlier explanations focus on structural factors such as size of electoral districts (Matthews, 1985) or degree of federalism (Epstein, 1980). Using a sample of 70 countries, Lundell (2004) evaluates these hypothesis and finds that smaller parties tend to adopt more decentralized selection methods. However, he finds no significant correlation with district magnitude or territorial organization.

More recently, there is an emphasis on the informational role of primaries. For example Meirowitz (2005) develops a model in which primaries offer voters an early opportunity to signal their preferences to candidates. Serra (2007) proposes a model of endogenous primary adoption in which parties use primaries as devices to obtain information about the campaigning skills of candidates.

Castanheira et al. (forthcoming) develop a model of endogenous party organization in which politicians exert effort to improve the quality of their

electoral platform and electoral promises are enforceable. In their view, political parties adopt competitive nomination procedures to signal quality of platform to voters and to promote politicians' effort on platform design. Similar to Caillaud and Tirole (2002) inter-party competition erode incentives to improve platform design and thus to increase intra-party competition. In particular their model suggests that parties would prefer competitive nomination procedures when inter-party competition is low, voters are poorly informed or when the ego rents are relatively small. The appeal of competitive procedures reduces with the degree of partisan motivation and ideological polarization. This result is opposite to my empirical findings and model predictions. One explanation is that in the Latin American case political commitment is difficult to enforce and then the type of politician become more relevant than the design of political platforms (Besley and Coate, 1997).

The rest of the paper proceeds as follows. Section 2 develops the analytical framework to study the adoption of candidate selection methods and its relation to political competition and quality of politicians. Section 3 provides a background on Latin American parties and describes the data. Section 4 and 5 present the main results and robustness checks. Section 6 provides some concluding remarks. All proofs are in the Appendix.

2 Analytical framework

The aim of this section is to develop an empirically testable model to understand the party decision to adopt a specific nomination procedure and how it relates to political selection. The model does not attempt to provide a complete explanation of endogenous institutional adoption but to clarify the role of inter-party political competition and party characteristics on primary adoption and its effect on electoral outcomes and quality of politicians.

Consider a political party whose only role is to nominate a candidate to run in presidential elections. The party is composed of a rank-and file and professional politicians, one of them acting as the party leader. In the status quo, the party leader is also the party candidate. However, the final decision depends of the selection method used by the party members.

The party members can choose between two alternative selection methods: a caucus or a primary. In a caucus, the status quo is maintained and

the leader is ratified as the party candidate. In contrast, in a primary the leader's nomination is challenged by a randomly selected party politician and the rank-and-file chooses between both the party candidate.

The main difference between both procedures is the degree of contestability. In particular, a primary provides the option to challenge the status quo. These two procedures are more closely related to the institutions observed in the Latin American case but differ from the procedures used in US politics².

Politicians behave as office seekers maximizing their vote share net of the cost of effort to influence a selection method³. I abstract from enforceability concerns by assuming that all the politicians affiliated to a party can credibly commit to implement the party preferred ideology⁴.

Politicians are heterogenous and differ in terms of their quality q_i which is uniformly distributed on the support $[0, 1]$. The quality of the party leader q_l is exogenously determined. Following Caselli and Morelli (2004) and Besley (2005) I interpret quality as honesty or competence, but it can reflect any vertical difference valued by all voters regardless of their political ideology⁵.

The rank-and-file is composed of heterogenous risk-neutral individuals. They are all interested on maximizing the party vote share but differ on their degree of loyalty or attachment to the party leader. In particular, their utility is increasing in:

$$v + \sigma_i + \delta \tag{1}$$

where v is the party vote share, σ_i is a party member's i individual attachment toward the leader and δ is a common popularity shock. I assume that both parameters are non-negative and $\sigma_i \sim U\left[0, \frac{1}{\psi}\right]$ while $\delta \sim U\left[0, \frac{1}{\phi}\right]$. In this model, the party leader enjoys an incumbency advantage since the rank-and-file has some degree of loyalty toward her. In turn, this will make more difficult her replacement as party candidate.

Similar to Besley et al. (2005), I introduce inter-party political competi-

²In this model, *primary* refers to closed primaries in which only party members can vote while *caucus* refers to the less inclusive possible method in which the party leader, or group of leaders, decides the nomination.

³This happens for instance if the ego rents or perks from office are sufficiently high.

⁴One possible justification is that the party has some recruitment system such that only politicians with similar political ideology are affiliated. Another is that the party members have informal mechanisms to enforce electoral promises like in Alesina and Spear (1988).

⁵In the political science literature, this concept of quality corresponds to valence.

tion by considering two types of voters: partisan and non-partisan. Partisan voters have a preference bias towards the party's ideological stance though they do not participate in party decisions. For simplicity I assume that the ideological bias is strong enough for partisan voter always to prefer voting for the party. In contrast, non-partisan voters care only about the president's quality. The proportion of partisan voters is $\lambda \in (0, 1)$ and I define the political competition faced by the party as $(1 - \lambda)$.

Politician's types are perfectly observed inside the party but only imperfectly by voters. The underlying assumption is that party members have inside information due to more frequent social interaction or personal contact with party politicians. In particular, during the electoral campaign voters observe the candidates' types with probability ρ while in the complementary case they remain completely uninformed about their type and party's selection method.

There are neither re-elections nor inter-temporal decisions and all individuals live for one period. These assumptions diverge from previous models in which parties are long lived organizations (Alesina and Spear, 1988; Harrington, 1992) but they allow us to focus on the role of political competition and selection methods rather than reputation, reelection incentives or commitment devices.

The timing of the game is as follows:

1. (Party constitution) both σ and δ are realized, the rank-and-file observe q_l and vote between adopting a primary or a caucus.
2. (Candidate selection) the party nominates its candidate using the chosen selection method. Simultaneously, the opposition party nominates a random politician to run in general elections.
3. (General election) voters observe the types of both candidates with probability ρ and cast their votes.

The equilibrium concept is sub-game perfect Nash equilibrium and we can solve the game using backward induction.

2.1 General election

Let us denote the quality of the candidate from the party as q_p and the quality of the opposition party's candidate as q_p^o . Due to the strong ideological

bias, partisan voters always vote in favor of the party but non-partisan voters only vote for the party if $q_p > q_p^o$. The tie breaking rule is tossing a fair coin.

Given these responses, before the elections the expected vote share the party candidate can obtain conditional on q_p is

$$v(q_p) = \rho [q_p + (1 - q_p) \lambda] + (1 - \rho) \left(\frac{1 + \lambda}{2} \right) \quad (2)$$

where I use the property that $\Pr(q_p^o < q_p) = q_p$. Note that the candidate's vote share is increasing in both q_p and λ reflecting the two sources of votes: appeal to non-partisan voters with a high quality candidate or receive the support of ideologically motivated voters.

2.2 Candidate selection

When the party uses a caucus, the incumbent leader is the default candidate and thus $q_p = q_l$. In contrast, in the case of a primary the incumbent leader faces a randomly drawn challenger with quality q_c and the nomination is decided by the rank-and-file.

From equation (1) we obtain the condition for a party member to prefer the challenger:

$$v(q_c) > v(q_l) + \sigma_i + \delta \quad (3)$$

where $\sigma_i + \delta \geq 0$. Since $v(\cdot)$ is increasing in q_p , condition (3) implies that $q_p \geq q_l$. Thus, a party member will only vote to replace the leader as the party candidate if the quality of the challenger is sufficiently higher.

In order to avoid a corner solution I assume that

Assumption 1 $\frac{1}{2\psi} + \frac{1}{\phi} < \rho(1 - \lambda)(1 - q_l)$

This assumption says that the loyalty of party members towards the party leader is not too large. It guarantees that there is always a value of q_c such that even a leader with a maximum popularity shock can be replaced if a challenger with sufficiently high quality appears.

Let $\Delta q = Eq_p - q_l$ represents the expected quality gains from using a primary, then under assumption 1 we can prove that:

Proposition 2 *primaries improve the expected quality of the party candidate ($\Delta q > 0$). The expected gains in quality are decreasing in q_l .*

Proposition 3 *a primary-nominated candidate obtains a higher expected vote share. The expected vote premium is $\rho(1 - \lambda) \Delta q$ which is decreasing in the size of partisan voters λ*

These findings highlight the role of primaries as an option for party members to improve the quality of the incumbent candidate. In this setup, the desire of the rank-and-file to appeal to non-partisan voters and increase the party's vote share creates incentives to enhance candidate selection. The expected electoral benefit from using primaries increases when the partisan support (λ) is smaller since attracting non-partisan voters become more important. However, the gains from political selection are smaller when the incumbent leader is already of high quality.

2.3 Party constitution

At the first stage the rank-and-file vote between adopting a primary or a caucus. A party member prefers a primary if:

$$v(Eq_p) > v(q_l) + \sigma_i + \delta \quad (4)$$

Note that party members with a strong attachment to the party leader prefer not to adopt a primary because there is the possibility the leader is replaced.

From (4) we can identify the party member indifferent between primary and caucus

$$\bar{\sigma} = \rho(1 - \lambda) \Delta q - \delta > \sigma_i$$

where from proposition 2 we can replace $v(Eq_p) - v(q_l)$ by $\rho(1 - \lambda) \Delta q$.

Given the distributional assumption about σ_i and δ , the proportion of party members preferring a primary is:

$$\pi_p = \psi \bar{\sigma}$$

while the probability of primary adoption p is:

$$p = \Pr\left(\pi_p > \frac{1}{2}\right) = \phi\left[\rho(1 - \lambda) \Delta q - \frac{1}{2\psi}\right] \quad (5)$$

Expression (5) reflects the cost and benefits of using a primary. On the

one hand, the leader may be replaced by a better candidate. This is costly for party members who have an attachment or loyalty towards her. For that reason the probability of primary adoption is decreasing in $\frac{1}{2\psi}$, the average loyalty towards the leader.

On the other hand, primaries provide the option to improve the quality of the party candidate and attract non-partisan voters. In that case the party obtains an electoral benefit $\rho(1-\lambda)\Delta q$ which increases with political competition but decreases with the quality of the party leader. Thus, primaries are more likely when the party faces high political competition or when the quality of the party leader is relatively low.

Both benefit and cost are scaled up by ϕ , the density of the popularity shock δ . We can interpret this parameter as an inverse measure of the incumbent candidate's advantage. To see this note that the expected bias of the median party member towards the leader before the popularity shock is $\frac{1}{2\psi} + \frac{1}{2\phi}$. Thus everything else equal, the higher the values of ϕ , the smaller the leader's incumbency advantage.

Deriving comparative statics on (5), we can summarize the effect of political competition on primary adoption:

Proposition 4 *political competition increases the probability of primary adoption. The effect of political competition is increasing in ϕ .*

Propositions 2, 3 and 4 summarize the model's main empirical predictions. They formalize the argument that political competition, by increasing the need to attract non-partisan voters, creates incentives to adopt quality-enhancing procedures such as contestable internal elections. A direct implication is that primary-nominated candidates obtain larger vote shares and have better quality. However, the incentives from political competition can be attenuated by the loyalty or attachment of party members towards the incumbent leader. In the next sections, I explore empirically the model's insights using a data set of Latin American presidential candidates.

3 Background

3.1 The Latin American case

Latin American democracies share many institutional and historical features⁶. Their colonial heritage is reflected in their language and legal institutions. They all have civil law systems, proportional electoral systems⁷ and strong presidential governments in which the executive plays a central role in national politics.

Since late 1970s, most Latin American countries experience a new wave of democratization. The transition to democracy was not uniform but in some cases it was delayed several years. For example, Guatemala's first elections after the military junta lead by Efraín Ríos Montt was in 1986, while post-Pinochet Chile re-started having contestable elections in 1990. After returning to democracy most of the power transitions have been peaceful and involved contested elections (Valenzuela, 2004). There have been some exceptional cases of limited democracy, however they are more the exception than the rule⁸.

Latin American political parties have used different methods to nominate presidential candidates. The procedures range from nominations by party leaders and conventions to party primaries (Alcántara Sáez, 2002). The use of primaries has increased over time, in particular during the 1990s (see Figure 1). However, its adoption has been partial with only some parties using them in a given election (see Table 2). In practice it means that in a given election not all the candidates are primary-nominated.

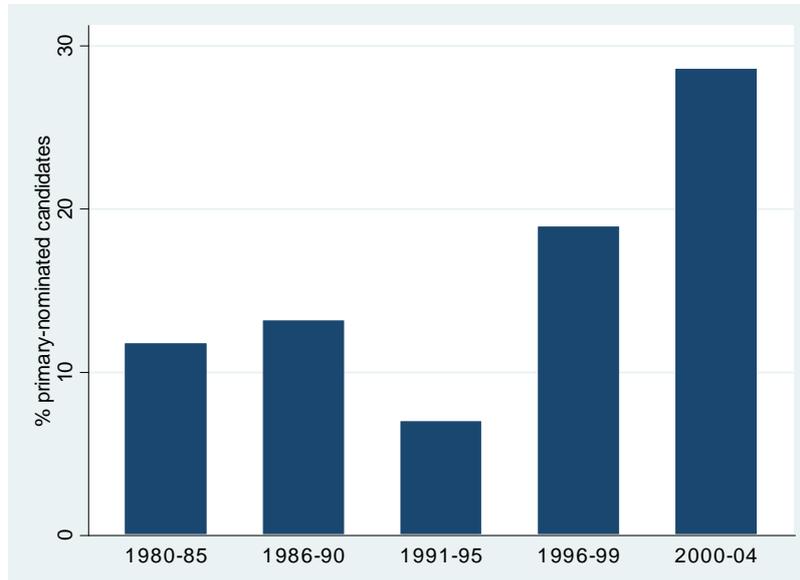
There is also variation in the institutional setup of a party over time. It is possible to observe parties switching nomination procedures between elections. For example, in Argentina the *Unión Cívica Radical* used primaries in the presidential elections of 1989, 1995 and 2003 but not in 1999; while the *Partido Justicialista* used primaries only in 1989, nominating former president Carlos Menem, but stopped using them afterwards. In Mexico, the *PRI* started holding primaries in 2000. Before, the candidate was directly

⁶In the definition of Latin America I only consider sovereign countries where Spanish or Portuguese is the official language.

⁷The only exception is Chile which uses a majoritarian system

⁸For example, during late 1990s Ecuador suffered a succession of coups and military-appointed presidents. In Peru, democracy standards deteriorated during the 1990s after Fujimori's self-coup and the 2000 presidential election was tainted by suspicions of rigging.

Figure 1: % primary-nominated candidates, by quinquennium



nominated by the incumbent president.

Choosing the selection method has been mainly a party decision. In most countries there is no legal requirement to use primaries or any particular selection method (Alcántara Sáez, 2002; Freidenberg, 2003). Only recently some countries like Uruguay, Paraguay and Panama included some form of legal obligation to use primaries in the electoral legislation. However, this requirements has not been fully enforced (see Table 2).

3.2 Data and variables

I use a panel of political parties from 17 Latin American countries. The unit of observation is the party's presidential candidate identified by both the party name and electoral process. For each party, I have information about the method used to select its presidential candidates in each general election held in the period 1978 to 2004. The initial year varies between countries reflecting the different date of transition to democracy.

The data on nomination procedures comes from Carey and Polga-Hecimovich (2006). I extent it with data on electoral outcomes and party characteristics from the Political Database of the Americas, and measures of quality of government from the International Country Risk Guide (ICRG) and Hall

Table 2: Use of primaries to select presidential candidates

Country	Legal obligation	Use of primaries in practice
Argentina	No	Partial (1989, 1995, 1999, 2003)
Bolivia	Yes, since 1999	No
Brazil	No	Partial (2002)
Chile	No	Partial (1993, 1999)
Colombia	No	Partial (1978, 1986, 1990, 1994)
Costa Rica	Yes	Partial (1978, 1982, 1986, 1998, 2002)
Dominican Rep.	No	Partial (1982, 1986)
Ecuador	No	No
El Salvador	No	Partial (2004)
Guatemala	No	Partial (2003)
Honduras	Yes	Partial (2001)
Mexico	No	Partial (2000)
Nicaragua	No	Partial (1996, 2001)
Panama	Yes, since 1997	Partial (1999)
Paraguay	Yes, since 1996	Partial (1993, 1998, 2003)
Peru	No	No
Uruguay	Yes, since 1996	All parties (1999, 2004), partial (1989)
Venezuela	No	Partial (1978, 1993)

Notes: 'Partial' means that only some parties used primaries. The year of the presidential election in which primaries were used appears in parenthesis. The sample considers presidential election in Latin America during the period 1978-2004

Sources: Alcantara (2002), Freidenberg (2003) and Carey and Polga-Hecimovich (2006)

and Jones (1999) ⁹.

I exclude some cases from the data set. Firstly, I consider only parties that obtained 5% or more vote share in presidential elections and were amongst the top four runners up. The reason for this exclusion is that many Latin American democracies have multiparty systems with a plethora of parties, some of them very small. In general, those parties have not significant chances of appointing a candidate but may run in elections to support other political objectives. Secondly, I exclude cases of presidents seeking immediate reelection. The reason behind this exclusion is that in Latin America presidential reelection is very rare and requires constitutional changes, thus these cases may reflect abnormally popular or influential politicians¹⁰.

In total, the sample includes 47 political parties that participated at least in two electoral processes (See Table 3). The number of candidates selected by the parties in the sample is 179, which implies that on average I observe 3.8 candidate selection processes by party. The sample represents a significant proportion of the parties and candidates participating in presidential elections in the period of analysis. In total it represents 72% of the parliamentary seats assigned in the period and 73% of the votes cast in presidential elections.

Candidate selection methods I consider two types of selection methods: primary and non-primary. Primary includes both open and closed primaries. In contrast non-primary considers less participative methods such as party conventions and nominations by party leaders and correspond to the *caucus* procedure defined in the analytical section.

I use a binary variable to identify the party selection method. In addition, I observe the selection method used by the party in the previous presidential election and whether other parties used primaries in the same electoral process.

Political competition In the countries studied, the election of legislators and the president is done in separated electoral processes, even though both elections may occur the same day. The vote share obtained by the presi-

⁹See Appendix B for further details on variables' definitions and data sources.

¹⁰In the period of analysis, there are four cases of incumbent presidents seeking reelection are: Alberto Fujimori (Peru), Hugo Chavez (Venezuela), Carlos Menem (Argentina) and Henrique Cardoso (Brazil). In all cases, the president was reelected.

Table 3: Dataset of political parties

Country	Nr. Electoral processes	Nr. Parties	Nr. Candidates	Cumulative % vote share	Cumulative % seat share
Argentina	5	3	9	0.60	0.50
Bolivia	5	4	16	0.68	0.75
Brazil	4	2	7	0.53	0.18
Colombia	7	2	13	0.76	0.77
Costa Rica	7	3	14	0.91	0.88
Dominican Rep	8	3	23	0.93	0.99
Ecuador	7	4	14	0.44	0.43
El Salvador	5	3	12	0.87	0.79
Guatemala	5	4	11	0.57	0.69
Honduras	5	2	10	0.96	0.96
Mexico	2	2	4	0.79	0.84
Nicaragua	3	2	5	0.76	0.74
Panama	3	2	5	0.57	0.55
Paraguay	4	2	7	0.72	0.75
Peru	5	4	10	0.59	0.60
Uruguay	4	3	11	0.89	0.90
Venezuela	4	2	8	0.80	0.78
Total	83	47	179	0.73	0.72

Notes: Sample considers only candidates from top four parties running in contested elections in the period 1978-2004. Sample excludes presidents running for immediate reelection and candidates that obtained less than 5% vote share.

dential candidate and the proportion of parliamentary seats obtained by her party (seat share) are highly correlated but not identical (see Figure 2).

Using seat share as a proxy for partisan support, I define political competition faced by party i in presidential election j as

$$\text{political competition}_{ij} = \hat{t}_j - \text{seat share}_{ij} \quad (6)$$

where *seat share* is the proportion of parliament seats obtained by the party in the legislative election held simultaneously or immediately before the presidential election¹¹, and \hat{t}_j is the second highest seat share obtained by any party in that legislative electoral process.

The measure of political competition captures the size of partisan support relative to an election specific threshold (\hat{t}_j). The reason for using this threshold is that a candidate needs at least as many votes as the second runner up to win an election¹².

The proposed indicator resembles the Ranney Index, a widely used index of political competition (King, 1989), but differs in two aspects. Firstly, it measures distance to an election-specific threshold, while an index of political competition based on the Ranney index measures distance relative to 0.5. Secondly, it uses only legislative seat share while the Ranney Index also includes other electoral results¹³.

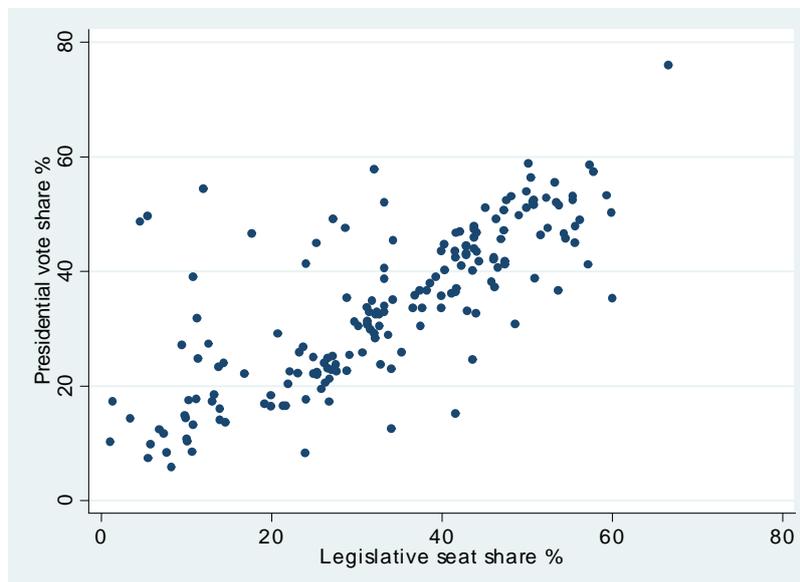
Incumbent candidate’s advantage (ϕ) Recall that ϕ is an inverse measure of the loyalty bias towards the default party candidate which in the model is also the party leader. I use the status of the candidate as party founder (*no founder*) and the party age as proxies for ϕ . The variable *no founder* is a binary indicator that adopts the value 1 if the candidate was not one of the party founders and 0 otherwise. Party age is measured as the difference between the year the election is taking place and the year the party was legally created.

¹¹In case of bicameral parliaments, I use the proportion of seats in the lower chamber (*Cámara de Diputados*).

¹²For a formal derivation of the index of political competition see Appendix C.

¹³In American politics, the Ranney Index is constructed using the proportion of seats in the lower and upper chambers of the state legislature held by the Democratic party, the Democratic proportion of the gubernatorial vote, and the proportion of terms of office for governor and each chamber of the state legislature during which the Democratic party had control (King, 1989). An index of political competition based on the Ranney Index (RI) is of the form $1 - |RI - 0.5|$.

Figure 2: Vote share and seat share



The rationale for using these variables is twofold. Firstly, party founders may have a particular charisma, popularity or reputation which facilitated them the creation of a new party. In turn, these characteristics may make party members more loyal or attached to them. In terms of the model, being a party founder would correspond to having a small ϕ .

Secondly, the age of the party may be positively related to the degree of organizational complexity and delegation. If that is the case, we could expect that in relatively old parties, the party leader's personality would be less important. Hence, the degree of loyalty she could obtain from the party members would be small. This situation would correspond to a candidate with a large ϕ .

Quality of government I use several indicators of the role of government in reducing diversion and expropriation as measures for the quality of government. The motivation for using these policies comes from the empirical evidence linking them to better investment incentives and improvements in productivity (Hall and Jones, 1999). The implicit assumption is that the role of the executive, lead by the president, is relevant enough to shape government policies. If that is the case, the quality of government can proxy

for the quality of the ruling president. This is reasonable assumption in the Latin American context given the strong presidential regime.

The variables include an index of government anti-diversion policies compiled by Hall and Jones (1999) and political risk assessments from the *International Country Risk Guide* such as: investment profile, corruption in government and involvement of military in politics¹⁴. These variables have an annual frequency while political variables, such as political competition, are specific to each president.

To link both political and economic variables, I first select the sub-sample of candidates appointed as presidents. Secondly, I identify the president ruling a country in each year. In the case of two presidents in a year (e.g. in transition years) I match the year to the president who held office most of the time. Finally, I aggregate the data taking the average value during a given president's mandate. The resulting data set contains information on 82 presidents from 18 countries.

Table 4 presents summary statistics for both the sample of presidential candidates and presidents. In the sample, around 17% of presidential candidates are primary-nominated, but the proportion is higher among presidents (40%). Parties are relative young with an average age of 50 years and median of 25 years. There is also significant proportion of party founders politically active with 30% of candidates being party founders. Note that there is within party variation in all the relevant variables. This characteristic facilitates the inclusion of party fixed effects in the empirical strategy to control for time-invariant party heterogeneity.

¹⁴See Appendix B for detailed definitions.

Table 4: Summary statistics

Variable	Obs.	Mean	Standard deviation	
			Overall	Within party
<i>Sample of political parties</i>				
Primary	179	0.168	0.375	0.277
Primary in prev. election	174	0.115	0.320	0.257
Other party uses primary	179	0.223	0.418	0.298
Seat share	179	0.335	0.152	0.098
Vote share	179	0.340	0.139	0.095
Political competition	179	-0.032	0.131	0.099
Party age	175	50.4	46.5	6.2
No founder	179	0.709	0.455	0.251
Number of candidates	179	9.587	4.835	3.262
<i>Sample of presidents</i>				
Primary	82	0.390	0.491	
Primary in prev. election	82	0.122	0.329	
Other party uses primary	82	0.220	0.416	
Political competition	82	-0.095	0.120	
No founder	82	0.707	0.458	
Index of gov. antidiv. policies	50	0.546	0.123	
Investment profile	54	5.968	1.708	
Corruption in government	57	2.996	0.936	
Military in politics	54	3.117	1.328	

4 Main results

The aim of this section is to evaluate empirically the model predictions linking primaries to better political selection and, through this channel, to different electoral and economic outcomes. As a preliminary step I explore the determinants of primary adoption in particular the role of inter-party political competition.

4.1 Determinants of primary adoption

The model suggests that the probability of primary adoption is increasing on political competition. Additionally it predicts a heterogenous effect with the effect of political competition increasing in ϕ , the inverse measure of the party leader's incumbency advantage (proposition 4).

To test these hypotheses, I use the following econometric specification:

$$primary_{ij} = \alpha_1 X_{ij} + \alpha_2 (X_{ij} * \hat{\phi}_{ij}) + \alpha_3 \hat{\phi}_{ij} + \alpha_4 W_{ij} + \eta_i + \varepsilon_{ij} \quad (7)$$

where *primary* is the selection method used by the party *i* in the presidential election *j*, *X* is the index of political competition, $\hat{\phi}$ is the proxy for the leader's incumbency advantage (i.e. an indicator of candidate not being party founder or party age), *W* is a vector of control variables and η is the party fixed effect.

In this specification, the identification of the effect of political competition on primary adoption comes from the comparison of candidates of the same party in different elections. Note that the hypotheses stated in proposition 3 imply $\hat{\alpha}_1 > 0$ and $\hat{\alpha}_2 > 0$.

Table 5 presents the estimates of the baseline specification using a linear probability model. I cluster the standard errors by political party to correct for any serial correlation in the party use of a candidate selection method. Columns (1) and (3) shows the results without the interaction term for the two measures of ϕ . In both cases, there is a positive relation between primary adoption and political competition.

Columns (2) and (4) explore heterogenous effects of political competition by including the interaction term. Note that the coefficient of the interaction term is positive and significant. This evidence suggests that the effect of

political competition is larger when the leader’s incumbency advantage is relatively small (high ϕ).

The differences on the effect of political competition by ϕ are relevant. In particular, the effect of political competition is positive only when the candidate is not the party founder or when the party age is above ten years. This finding sheds light on the internal mechanism to adopt primaries, suggesting that the bias of party members towards the incumbent leader may attenuate the incentives created by political competition.

A first concern in the estimates is the presence of omitted variables. In particular, the model suggests that the quality of leader (q_l) is positively correlated with primary adoption. However q_l is unobserved and omitted in the regression. This omission confounds the identification of the causal effect of political competition on primary adoption to the extent that q_l is correlated with the explanatory variable such as political competition and the interaction term with ϕ . To address this concern, the empirical specification includes party fixed effects. Under the assumption that any relevant omitted variable is time-invariant, the estimates would capture a causal relation between political competition and primary adoption.

Another concern is reverse causality between primary adoption and the measure of political competition. For example a party adopting primary may increase their partisan support and obtain a larger seat share which reduces the index of political competition. However in this case we could expect a downward bias on the estimates of α_1 which would make the obtained results even more conservative.

4.2 Primaries and political selection

4.2.1 Electoral performance

If the nomination procedure matters for political selection and quality of politicians is relevant for voters, we should observe different electoral performance between primary and non-primary nominated candidates. In particular, the model predicts that primary -nominated candidates have better quality and therefore obtain a larger vote share. Moreover, the additional votes are mostly from non-partisan voters attracted by the candidate’s quality instead of the party label (proposition 3).

To evaluate the relation between primary and electoral performance, I

Table 5: Determinants of primary adoption

	(1)	(2)	(3)	(4)
	Primary	Primary	Primary	Primary
Political competition	0.453 (0.261)*	-0.174 (0.131)	0.517 (0.284)*	-1.313 (0.661)*
Political competition* ϕ		0.888 (0.344)**		0.523 (0.221)**
ϕ	-0.009 (0.033)	-0.034 (0.028)	0.099 (0.062)	0.089 (0.056)
Other party uses a primary	0.237 (0.099)**	0.249 (0.099)**	0.230 (0.095)**	0.241 (0.091)**
Measure of ϕ	No party founder		Ln(party age)	
Party fixed effect	Yes	Yes	Yes	Yes
Observations	179	179	175	175
Nr. of parties	47	47	47	47
R-squared	0.09	0.11	0.11	0.15

Notes: Robust standard errors in parentheses. Standard errors are adjusted for clustering at party level. * denotes significant at 10%, ** significant at 5% and *** significant at 1%. All regressions include a post 1990 dummy. The measure of political competition is the second highest seat share in an election minus the party seat share. ϕ refers to the incumbent candidate's advantage measured by the status of the candidate as party founder and by party age.

estimate the following regression:

$$\begin{aligned} \text{vote share}_{ij} = & \beta_1 \text{primary}_{ij} + \beta_2 \text{seat share}_{ij} + \\ & \beta_3 (\text{primary}_{ij} * \text{seat share}_{ij}) + \beta_4 W_{ij} + \eta_i + \varepsilon_{ij} \end{aligned} \quad (8)$$

where *vote share* is the proportion of votes obtained by the candidate of party i in presidential elections j , *primary* is the selection method, *seat share* is the measure of partisan support, W is a vector of control variables and η is the party fixed effect¹⁵.

Similar to (7) this specification exploits within party variation and captures a causal relation as long as any omitted variable correlated with both the explanatory variables and vote share is time-invariant. The parameters of interest are β_1 and β_3 which capture the vote premium for primary-nominated candidates and the heterogenous effect by size of partisan support, respectively.

Table 6 shows the estimates of equation (8) with robust standard errors clustered by political party. The reason to cluster the errors is to correct for any serial correlation in the presidential vote share obtained by a party.

Column (1) estimates the full specification. The results show that primary-nominated candidates obtain larger vote shares and that the vote premium is decreasing on partisan support. This evidence is consistent with the model predictions and suggest that primary nominated candidates have a quality that broaden the party appeal and brings electoral benefits. Moreover, this electoral benefit is consistent with the rationale to adopt primaries as a response to political competition, since in that situation attracting non-partisan voters become more important for the party electoral success.

Column (2) estimates the baseline regression without the interaction term to obtain the average vote premium. The magnitude of the electoral benefit related to the use of primaries is relevant. The average party obtains an additional 6% vote share above their partisan support when using primaries. To put this number in context, recall that the average vote share is 34%. Hence, the primary vote premium represents an increment of 17%.

These findings are similar to the estimates of Carey and Polga-Hecimovich (2006). Using a larger data set and a different empirical specification, they

¹⁵Specification (8) can be derived from the vote share equation (2). See Appendix D for a formal derivation.

find that primary-selected presidential candidates in Latin America obtain between 4% to 6% additional vote share. The main difference with their work is the inclusion of the interaction term with *seat share* which allow us to evaluate how the vote premium varies with the size of partisan support.

Table 6: Primaries and electoral performance

	(1)	(2)
	Vote share	Vote share
Primary	0.204 (0.078)**	0.057 (0.031)*
Seatshare	0.731 (0.082)***	0.638 (0.121)***
Primary * Seatshare	-0.398 (0.164)**	
Other party uses a primary	-0.037 (0.023)	-0.036 (0.026)
Ln(number of parties)	-0.029 (0.017)*	-0.035 (0.018)*
Party fixed effects	Yes	Yes
Observations	179	179
Number of parties	47	47
R-squared	0.49	0.45

Notes: Robust standard errors in parentheses. Standard errors are adjusted for clustering at party level. * denotes significant at 10%, ** significant at 5% and *** significant at 1%.

4.2.2 Quality of government

The previous results suggest that primary-nominated candidates have a characteristic that appeals to voters. An important question is whether this quality differences are also relevant for economic policies. To address this question I estimate the following regression:

$$y_{ct} = \gamma_1 \text{primary}_{ct}^* + W_{ct} + \varepsilon_{ct} \quad (9)$$

where y is a measure of the quality of government in country c and period t , primary_{ct}^* is the method by which the ruling president was selected as candidate and W is a vector of control variables including GDP per capita and a post 1990 dummy. In order to facilitate the comparison of the results,

I use the normalized values of y . Note that in contrast to the previous regressions, this specification exploits variation between presidents.

If primary-nominated candidates are systematically better and type of politician matters for quality of government, we should observe a positive relation between $primary^*$ and y . However there are several reasons for which a simple OLS regression may lead to inconsistent estimates. Firstly, specification (9) uses $primary^*$ as a proxy for the quality of the incumbent president. This may cause an attenuation bias due to measurement error. Secondly, there may be omitted variables that drive both the adoption of primaries and the quality of government policies. For example, an informative media or strong tradition of political participation.

To address this relevant identification concerns, I use an instrumental variable approach. As instruments, I employ the drivers of primary adoption identified in the analytical framework and in the previous empirical analysis (see Section 4.1). In particular, I instrument $primary^*$ with the measure of political competition faced by the president's party, a binary variable indicating whether the president is not the party founder and the interaction term. The underlying identification assumption is that the interaction term is uncorrelated to the error term.

Table 7 displays the estimates of equation (9) using different measures of y . As a benchmark, column (1) shows the estimates of an OLS regression. There is a positive and significant correlation between primary-nominated presidents and the index of government anti-diversion policies. For the other measures of y , the correlation is positive but statistically not significant.

Column (2) runs the baseline regression using 2SLS. The estimates are larger and significant, which is consistent with an attenuation bias due to measurement error. The magnitude of the relation is relevant and suggests that primary-nominated presidents are associated with an increase of one standard deviation in the assessments of government policies.

The sample size used in the 2SLS regressions range from 50 to 57 observations and the F-statistic of the first stage is 5.9 (see Table 8). These features raise relevant concerns about the presence of weak instruments¹⁶ which may bias the point estimates and standard errors. However, as shown by Stock et al. (2002), weak instruments may produce a small sample bias

¹⁶A F-statistic above 10 is usually required to rule out weak instruments (Stock et al., 2002)

toward OLS. In that case, the 2SLS estimates would be even more conservative. In the next section, I check the robustness of the results using alternative estimation methods more robust to small sample bias and find results similar to 2SLS.

In the case of biased standard errors, I address this concern using small sample corrections in the 2SLS standard errors. As a robustness check, I use the Conditional Likelihood Ratio (CLR) test proposed by Moreira (2003) which provides a more reliable confidence interval and improves hypothesis testing (Andrews and Stock, 2005). Column (3) reports the p-values of the CLR test. In all the regressions, the confidence intervals are larger but the results of the significance tests do not differ from 2SLS.

Column (4) tests the exclusion restriction of the instruments using the Sargan-Hansen over-identification test. In all the cases, the null hypothesis that the instruments are uncorrelated with the error term and correctly excluded from the main regression is not rejected. Under the assumption that at least one of the instruments is valid, this result provides evidence in favor of a consistent estimation of γ_1 .

Table 7: Primaries and quality of government

Dependent variable	Nr. obs.	(1)	(2)	(3)	(4)
		OLS	2SLS	CLR test p-value	Overid. test p-value
1. Index of government anti-diversion policies	50	0.533 (0.169)***	0.885 (0.426)**	0.088	0.950
2. Investment profile	54	0.342 (0.267)	1.414 (0.542)**	0.013	0.926
3. Corruption in government	57	0.26 (0.317)	1.191 (0.517)**	0.051	0.464
4. Military in politics	54	0.078 (0.266)	1.080 (0.514)**	0.049	0.685

Notes: Robust standard errors in parentheses. * denotes significant at 10%, ** significant at 5% and *** significant at 1% . The estimates correspond to the parameter associated to variable primary. All regressions include $\ln(\text{real GDP per capita})$ and a post-1990 dummy. 2SLS regressions use political competition, no founder, and the interaction term as excluded instruments. The reported standard errors are corrected by small sample. Column (3) presents the p-value of 2SLS estimates using the Conditional Likelihood Ratio test. Column (4) shows the p-value of the Sargan-Hansen overidentification test. The null hypothesis is that the instruments are correctly excluded from the main regression.

Table 8 displays the first stage and reduced form regressions. I report only the results of the first stage of the model with government anti-diversion policies as dependent variable because it has the smallest number of observations. In the other cases, the sample size is larger and the results are similar. The results from the first stage (column 1) resemble the findings about the role of political competition on primary adoption. In particular, note that the probability a president is primary-nominated is increasing on the political competition faced by her party and that the effect is larger when he is not the party founder.

Columns (2) to (5) report the reduced form regressions. In all the cases, the estimates are consistent with the 2SLS findings. The factors increasing the probability of primary adoption are also positively correlated with the proxies of president's quality. This evidence highlights the role of the candidate selection method as a transmission channel linking political competition to quality of government policies.

Table 8: First stage and reduced form regressions

	(1)	(2)	(3)	(4)	(5)
	First stage	Reduced form regressions			
Excluded instruments		Index of gov. antidiv. policies	Investment profile	Corruption in gov.	Military in politics
Political competition* ϕ	2.600 (1.058)**	2.584 (1.652)	4.281 (1.583)***	4.259 (1.549)***	1.675 (1.682)
Political competition	-1.529 (1.032)	-1.504 (1.510)	-2.559 (0.898)***	-1.795 (1.110)	-0.361 (1.220)
ϕ	0.563 (0.116)***	0.480 (0.258)*	0.812 (0.293)***	0.617 (0.279)**	0.652 (0.265)**
Observations	50	50	54	57	54
F-statistic	5.90				
R-squared	0.252	0.541	0.316	0.131	0.341

Notes: Robust standard errors in parentheses. * denotes significant at 10%, ** significant at 5% and *** significant at 1% . All regressions include $\ln(\text{real GDP per capita})$ and a post-1990 dummy as included instruments and use no founder as a measure of ϕ . Column (1) reports the first stage of the 2SLS regression with the smallest number of observations.

5 Robustness checks

5.1 Determinants of primary adoption

Table 9 presents the estimates of the baseline regression using alternative measures of political competition. I use 100% as a threshold \hat{t} instead of the second highest seat share. The resulting index more closely resembles the Ranney Index. In columns (3) and (4) I also replace the contemporaneous value of seat share for the value associated with the previous presidential election to address possible reverse causality. In all cases the results are similar to the baseline regressions. Note that political competition is positively correlated with primary adoption and the effect is increasing in ϕ .

Table 10 shows additional robustness checks. Columns (1) and (2) present the results of a placebo test. The regressions have similar specification as the baseline model but the dependant variable is the selection method used by the candidate party in the previous election. Note that in this case, in contrast to the main results, the effect of political competition is insignificant.

The placebo test suggests that what matters for choosing a candidate selection method is the contemporaneous political competition. This finding reduces concerns of political competition picking up a party-specific trend towards using more primaries or being driven by the party previous constitutional decisions.

In columns (3) and (4), I restrict the sample to parties older than ten years and estimate the baseline regression. The results are similar though the point estimates are slightly larger. They suggest that the variable *no founder* is not picking up other characteristics associated with young parties such as lack of organizational infrastructure or resources to implement primaries.

5.2 Primaries and political selection

5.2.1 Electoral performance

Columns (1) and (2) in Table 11 present the results of a placebo test. The specification is similar to the baseline vote share regression but uses the selection method in the previous election as explanatory variable. In both regressions, the estimates associated with the party selection are not significant. This evidence reduces concerns that primaries are playing a reputa-

Table 9: Alternative measures of political competition

	(1)	(2)	(3)	(4)
	Primary	Primary	Primary	Primary
Political competition	0.481 (0.252)*	-0.107 (0.200)	0.358 (0.220)	-0.081 (0.134)
Political competition* ϕ		0.860 (0.332)**		0.688 (0.323)**
ϕ		-0.636 (0.250)**		-0.529 (0.251)**
Other party uses a primary	0.242 (0.099)**	0.250 (0.099)**	0.275 (0.111)**	0.284 (0.109)**
Measure of political competition	1 - party seat share		1 - party seat share in previous election	
Party fixed effect	Yes	Yes	Yes	Yes
Observations	179	179	158	158
Number of parties	47	47	47	47
R-squared	0.10	0.12	0.12	0.14

Notes: Robust standard errors in parentheses. Standard errors are adjusted for clustering at party level. * denotes significant at 10%, ** significant at 5% and *** significant at 1% . All regressions include a post 1990 dummy and use *no founder* as a measure of ϕ , the incumbent candidate's advantage.

Table 10: Determinants of primary adoption - placebo test and restricted sample

	(1)	(2)	(3)	(4)
	Primary in previous election	Primary in previous election	Primary	Primary
Political competition	0.074 (0.218)	0.011 (0.073)	0.663 (0.297)**	-0.107 (0.173)
Political competition* ϕ		0.091 (0.309)		1.008 (0.420)**
ϕ		-0.029 (0.033)		-0.055 (0.051)
Other party uses a primary	-0.021 (0.067)	-0.019 (0.068)	0.230 (0.103)**	0.232 (0.103)**
Sample		Full		Age > 10 years
Party fixed effect	Yes	Yes	Yes	Yes
Observations	174	174	147	147
Number of parties	47	47	40	40
R-squared	0.01	0.01	0.10	0.12

Notes: Robust standard errors in parentheses. Standard errors are adjusted for clustering at party level. * denotes significant at 10%, ** significant at 5% and *** significant at 1%. All regressions include a post 1990 dummy and use *no founder* as a measure of ϕ , the incumbent candidate's advantage. Columns (3) and (4) use a sub-sample of parties older than 10 years.

tional role. If that was the case, the use of primaries would increase vote share not only in the current but also in future presidential elections.

In columns (3) and (4) I restrict the sample to parties older than ten years and run the baseline specification. The estimates are similar to the main results and suggest that they are not being driven by young parties. This evidence suggest that primaries are not picking up other characteristics associated with older parties that may be relevant for a candidate electoral performance such as better inside information or better political recruitment.

Table 11: Primaries and electoral performance - robustness checks

	(1)	(2)	(3)	(4)
	Vote share	Vote share	Vote share	Vote share
Primary in previous election	0.097 (0.145)	-0.033 (0.037)		
Primary in previous election * Seat share	-0.319 (0.340)			
Primary			0.213 (0.079)***	0.05 (0.032)
Primary * Seat share			-0.439 (0.172)**	
Seat share	0.657 (0.093)***	0.604 (0.128)***	0.726 (0.106)***	0.606 (0.148)***
Sample	Full		Age > 10 years	
Party fixed effects	Yes	Yes	Yes	Yes
Observations	174	174	147	147
Number of parties	47	47	40	40
R-squared	0.44	0.43	0.46	0.40

Notes: Robust standard errors in parentheses. Standard errors are adjusted for clustering at party level. * denotes significant at 10%, ** significant at 5% and *** significant at 1%. All regressions include as control variables: *other party uses a primary* and $\ln(\text{number of candidates})$. Columns (3) and (4) use a sub-sample of parties older than 10 years.

5.2.2 Quality of government

As a first robustness check, I implement a placebo test replacing the explanatory variable *primary*. I use two alternative variables: *other party uses a primary* which captures whether other party uses a primary in the same election and *primary in previous election* which indicates whether the pres-

ident's party used primaries in the previous election. For both explanatory variables, I obtain OLS and 2SLS estimates, using the same specification and excluded instruments as in the baseline regressions.

Columns (1) to (4) in Table 12 report the results. Note that the pattern of results is different. In particular, almost all the estimates become insignificant or even negative. This evidence suggests that common factors affecting parties' institutional decisions, such as a more democratic political environment, or party time-invariant characteristics are not driving the main results.

Columns (5) replicates the baseline estimates using the Limited-Information Maximum Likelihood (LIML) estimator which is partially robust to weak instruments (Stock et al., 2002). In addition, it includes country fixed effects. This specification addresses concerns related to weak instruments and country-specific omitted variables. In this case, the estimates are similar to those obtained in the baseline regressions.

Table 12: Primaries and quality of government - robustness checks

Dependent variable	(1)	(2)	(3)	(4)	(5)
1. Index of gov. antdiv. policies	0.034 (0.372)	-0.888 (2.379)	-0.112 (0.171)	-0.161 (1.705)	1.153 (0.718)
2. Investment profile	0.017 (0.397)	-1.493 (3.988)	-0.579 (0.414)	-0.333 (1.873)	1.613 (0.924)*
3. Corruption in government	0.795 (0.421)*	2.619 (3.131)	-0.896 (0.274)***	-2.012 (1.839)	1.496 (0.636)**
4. Military in politics	0.337 (0.475)	-0.030 (2.854)	-0.553 (0.359)	-0.173 (1.228)	1.329 (0.676)**
Estimation method	OLS	2SLS	OLS	2SLS	LIML
Robustness check	explanatory variable: other party uses a primary		explanatory variable: primary in previous election		Country fixed effects

Notes: Robust standard errors in parentheses. * denotes significant at 10%, ** significant at 5% and *** significant at 1% . The estimates correspond to the parameter associated to variable primary or its substitute. All regressions include $\ln(\text{real GDP per capita})$ and a post-1990 dummy. 2SLS and LIML regressions use political competition, no founder, and the interaction term as excluded instruments. The reported 2SLS standard errors are corrected by small sample. Columns (1) to (4) use *other party uses a primary* and *primary in previous election* instead of *primary* as explanatory variable. Column (5) includes country fixed effects. LIML stands for Limited Information Maximum Likelihood.

6 Concluding remarks

Motivated by a simple model, this paper has provided empirical evidence linking candidate nomination procedures to political selection. The evidence supports that argument that party institutions, such as the nomination procedure, play an important role on political selection and can affect the electoral outcomes and ultimately the quality of government. Moreover, the results highlights another channel for inter-party political competition to improve political selection by creating incentives to adopt contestable nomination procedures.

By explicitly modeling the party decision, the model provides additional testable insights regarding the interaction of party characteristics and political competition. In particular the evidence suggests that the incentives of political competition can be attenuated by the loyalty or attachment of party members towards the incumbent leader. This bias make more difficult the adoption of institutions that may challenge the position of the leader in the status quo.

This paper shows how treating parties as organizations can enrich our understanding of the political process and its relation to economic outcomes. However, I focus only in the candidate nomination process assuming an office seeking party. In reality, parties have richer institutional setups and have other objectives besides holding office. These features may be also relevant for understanding political selection and, more broadly, how electoral incentives shape policy making.

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A Proofs

A.1 Proof of Proposition 2

Under assumption 1, there is a positive probability that a challenger with sufficiently high quality replaces the leader as party candidate. To see this recall that a party member votes for the challenger if

$$v(q_c) > v(q_l) + \sigma_i + \tilde{\delta}$$

where $\tilde{\delta}$ is the realization of δ . Thus the swing party member, indifferent between the party leader and challenger is represented by

$$\tilde{\sigma} = v(q_c) - v(q_l) - \tilde{\delta} \tag{10}$$

Using expression (2) we can rewrite (10) as $\tilde{\sigma} = \rho(1 - \lambda)(q_c - q_l) - \tilde{\delta}$. Then, the proportion of party members voting for the challenger is $\psi\tilde{\sigma}$ and thus the probability the challenger is nominated can be written as

$$\begin{aligned} \pi_c &= \Pr \left\{ \psi\tilde{\sigma} > \frac{1}{2} \right\} \\ &= \Pr \left\{ q_c > q_l + \frac{1}{\rho(1 - \lambda)} \left(\frac{1}{2\psi} + \tilde{\delta} \right) \right\} \\ &= 1 - q_l - \frac{1}{\rho(1 - \lambda)} \left(\frac{1}{2\psi} + \tilde{\delta} \right) \end{aligned}$$

which is positive for any $\tilde{\delta}$ under assumption 1.

Hence, we can write the expected quality gains before the primary election as

$$\Delta q = \pi_c (q_c - q_l)$$

which is positive because the challenger is nominated only when $q_c > q_l$. In addition, note that for similar reason Δq is decreasing in q_l .

A.2 Proof of Proposition 3

Recall that $q_p = q_l$ if a party uses a caucus and $Eq_p > q_l$ in the case of a primary. Using equation (2) we can write the difference in expected vote

share between primary and caucus nominated candidates as

$$v(Eq_p) - v(q_l) = \rho(1 - \lambda) \Delta q$$

which is strictly positive, increasing on Δq and decreasing on λ since $\Delta q > 0$ and $\lambda \in (0, 1)$

A.3 Proof of Proposition 4

Recall from equation (5)

$$p = \phi \left[\rho(1 - \lambda) \Delta q - \frac{1}{2\psi} \right]$$

thus $\frac{\partial p}{\partial(1-\lambda)} = \phi\rho\Delta q$ which is positive by proposition 2. Similarly, $\frac{\partial^2 p}{\partial(1-\lambda)\partial\phi} = \rho\Delta q > 0$.

B Variables and data sources

Primary 1 if presidential candidate was nominated by primary (open or closed), 0 otherwise.

Source: Carey and Polga-Hecimovich (2006)

Primary in previous election 1 if party used primary to select presidential candidate in the previous election, 0 otherwise.

Source: Carey and Polga-Hecimovich (2006)

Other party uses primary 1 if other party used primary in the same electoral process, 0 otherwise.

Source: Carey and Polga-Hecimovich (2006)

Seat share Proportion of seats obtained by candidate's party in lower chamber in the legislative election held simultaneously or immediately before the presidential election.

Source: Center on Democratic Performance and Political Database of the Americas

Vote share Proportion of votes obtained by party candidate in presidential elections.

Source: Carey and Polga-Hecimovich (2006)

Party age Age of party, in years, at the moment of the presidential election.

Source: Parties' websites and Political Database of the Americas

No founder 1 if candidate was not one of the party founders, 0 otherwise.

Source: Parties' websites and Political Database of the Americas

Number of candidates Number of presidential candidates in a given election.

Source: Carey and Polga-Hecimovich (2006)

Government antidiversion policies Simple average of the normalized value of the following ICRG's risk assessment variables: law and order, bureaucratic quality, corruption, risk of expropriation and government repudiation of contracts.

Source: Hall and Jones (1999)

Investment profile Assessment of factors affecting the risk of investment including contract viability, profits repatriation and payment delays. Score ranges from 0 to 4, with higher values indicating lower risk.

Source: International Country Risk Guide (ICRG)

Corruption in government Assessment of corruption within the political systems including: patronage, nepotism, secret party funding and close ties between politics and business. Score ranges from 0 to 6, with higher values indicating lower corruption.

Source: International Country Risk Guide (ICRG)

Military in politics Assessment of involvement of the military in politics. Score ranges from 0 to 6, with higher values indicating lower involvement.

Source: International Country Risk Guide (ICRG)

Real GDP per capita Real GDP per capita using Laspeyres index.

Source: Penn World Table

C Derivation of the index of political competition

Consider n parties competing in a presidential election. All of them have a candidate of similar quality and thus they rely on their partisan supporters to decide the election. Each party has a proportion of partisan supporters λ_i such that $\sum_{i \in n} \lambda_i < 1$. λ_i is a random variable with cumulative distribution function $F_i(\lambda_i)$. I assume that all F_i have identical shape but different means.

Denote the realizations of λ_i as $\hat{\lambda}_i$ and rank them by size such that $\hat{\lambda}_1 \geq \hat{\lambda}_2 \geq \dots \geq \hat{\lambda}_n$. Thus, we can write the ex ante probability that party i wins the election as $G_i(\hat{\lambda}_2) \equiv 1 - F_i(\hat{\lambda}_2)$. Since parties are competing for one position, they need to surpass the votes obtained by the second highest candidate to win the election. In that case the party becomes the one with the largest partisan support.

$G_i(\hat{\lambda}_2)$ measures the ability of the party to win the election based purely on its partisan support. This measure corresponds to the concept of political competition used in the analytical framework.

Taking a first order Taylor approximation of $G_i(\hat{\lambda}_2)$ around $E(\lambda_i)$ and using $\hat{\lambda}_i$ as the best estimator of $E(\lambda_i)$ we obtain

$$G_i(\hat{\lambda}_2) \approx c_0 + c_1 (\hat{\lambda}_2 - \hat{\lambda}_i)$$

where $c_0 = G_i(E(\lambda_i))$ and $c_1 = G'_i(E(\lambda_i))$ are positive constants.

Note that because of the assumption that all λ_i have distribution functions with identical shapes, both c_0 and c_1 are identical for all parties. Thus, to construct an empirical counterpart of $G_i(\hat{\lambda}_2)$ we can focus only in the component $(\hat{\lambda}_2 - \hat{\lambda}_i)$ since c_0, c_1 can be pinned down during the econometric estimation.

D Empirical specification of the vote share regression

Recall from equation (2) that the expected vote share a party can obtain is

$$v_i = \delta [q_p + (1 - q_p) \lambda] + (1 - \delta) \left(\frac{1 + \lambda}{2} \right)$$

and that $q_p = \Delta q + q_l$ if party uses primary and $q_{pi} = q_{li}$ otherwise.

Under the assumption that Δq and q_l are party specific but time-invariant and using the definition of q_p , we can re-write the expected vote share of the candidate from party i in electoral process j as

$$v_{ij} = \delta \Delta q_i \text{primary}_{ij} + \left(\frac{1 + \delta}{2} - \delta q_{li} \right) \lambda_{ij} - \delta \Delta q (\lambda_{ij} * \text{primary}_{ij}) + \frac{1 - \delta}{2} + \delta q_{li} \quad (11)$$

Note that in expression (11), both the partisan support λ and the selection method can vary between electoral processes.

Equation (11) resembles a random coefficient model. Assuming that $\Delta q_i = \overline{\Delta q} + \varpi_{1i}$ and $q_{li} = \overline{q_l} + \varpi_{2i}$ with ϖ_{1i}, ϖ_{2i} independent from *primary* and λ , expression (11) becomes:

$$v_{ij} = \beta_1 \text{primary}_{ij} + \beta_2 \lambda_{ij} + \beta_3 (\lambda_{ij} * \text{primary}_{ij}) + \eta + \varepsilon_{ij} \quad (12)$$

where $\beta_1 = -\beta_3 \equiv \delta \overline{\Delta q}$, $\beta_2 \equiv \frac{1+\delta}{2} - \delta \overline{q_l}$, $\eta \equiv \frac{1-\delta}{2} + \delta \overline{q_l}$ and $\varepsilon_{ij} = \varpi_{1i} [\delta \text{primary}_{ij} (1 - \lambda_{ij})] + \varpi_{2i} [\delta (1 - \lambda_{ij})]$.

Expression (12) provides the motivation for the proposed empirical specification (8).