# WHY DO PARTIES COOPERATE IN PRESIDENTIALISM? ELECTORAL AND GOVERNMENT COALITION FORMATION IN LATIN AMERICA

# Por qué los partidos cooperan en sistemas presidenciales? Formación de coaliciones electorales y de gobierno en América Latina

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### Abstract

The purpose of this article is to explore coalition formation in presidential systems using evidence from Latin America. It puts forward three hypotheses based on formateur power, electoral structures and party systems to explore when and why electoral and government coalition formation occurs. It uses evidence stemming from eighteen democratic presidential regimes in Latin America from 1980 to 2010. It looks at 100 elections and 407 aggregate years of democratic government. It analvses data organized in a cross-sectional time-series fashion through a logit function with random effects and robust standard errors. It finds that in democracies with weak presidents, restrictive electoral rules and highly fragmented party systems, the president will seek the support of multiple parties. While the effective number of parties is the most important determinant, rules related to legislative elections are more important predictors of electoral coalitions, and those related to presidential elections are more important predictors of government coalitions. The findings in this article are important insofar as yielding critical insight into partisan strategies in both the run-up to elections and the maintenance of governments, as well as contributing to a general theory of coalition formation.

### Keywords

Presidentialism; electoral systems; party systems; coalition formation.

### Resumen

El propósito de este artículo es explorar la formación de coaliciones en sistemas presidenciales utilizando evidencia de América Latina. Presenta tres hipótesis basadas en el poder de los presidentes, las estructuras electorales y los sistemas de los partidos para explorar cuándo y por qué ocurre la formación de coaliciones electorales y de gobierno. Utiliza evidencia proveniente de dieciocho regímenes presidenciales democráticos entre 1980 y 2010. Examina cien elecciones y cuatrocientos siete años de gobierno democrático. Analiza los datos organizados en una serie temporal por medio de una función logística con efectos aleatorios. Encuentra que en democracias con presidentes débiles, reglas electorales restrictivas y sistemas de partidos altamente fragmentados, el presidente buscará el apoyo de múltiples partidos. Si bien el número efectivo de partidos es el determinante más importante, las reglas relacionadas con las elecciones legislativas son los predictores más importantes de las coaliciones electorales, y las relacionadas con las elecciones presidenciales son las más importantes de las gubernamentales. Los hallazgos en este artículo son importantes porque arrojan una visión crítica de las estrategias partidarias tanto en el periodo previo a las elecciones como durante el periodo de gobierno, y también porque contribuyen a la formulación de una teoría general de formación de coaliciones.

### Palabras claves

Presidencialismo; sistemas electorales; sistemas de partido; formación de coaliciones.

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### I. WHY DO PARTIES COOPERATE IN PRESIDENTIALISM?

The purpose of this article is to explore coalition formation in presidential systems using evidence from Latin America. The conventional view has been that it is considerably more difficult to form coalitions in presidentialism than it is in parliamentarism, and as a result, parties have only exceptionally been expected to form coalitions in the former. However, since the 1990s, most of the democracies in the region have at some point elected a presidential candidate backed by an electoral coalition or have been ruled by a president supported by a government coalition. Only in the past decade did coalitions win in Argentina (2011, 2015), Bolivia (2014), Brazil (2010, 2014), Chile (2013, 2017), Ecuador (2013, 2017), Guatemala (2008), Panama (2009), Paraguay (2008, 2013), and Peru (2016). So, why do parties form coalitions despite institutional constraints?

This puzzle has not yet been resolved by literature. There is still a discrepancy between the conventional view and the actual behavior of coalitions. The gap is in part a consequence of a comparative research program set forward by Juan Linz in the early 1990s, in which he compared the "virtues of parliamentarism" to the "perils of presidentialism" (Linz, 1990a; Linz 1990b). In his landmark work, Linz looked at both types of regimes, comparing their essential characteristics, such as the division of powers and term lengths. Among other things, he found that parliamentary systems were more effective than presidential systems when it came to the survival of democracy. Linz's findings would go on to spark two additional waves of literature comparing parliamentary democracies to presidential ones (Elgie, 2005).

The second wave was triggered by the critiques of David Horowitz (1990), whose main argument was that Linz had mistakenly based his inferences on a "highly selective sample of comparative experiences" (p. 74).

Matthew Shugart and John Carey (1992) built on this and criticized that the notion that parliamentarism was superior had been because they were "considering only a dichotomous classification of regimes" (p. 283). This view was complemented by Scott Mainwaring and Timothy Scully (1995), who suggested that the consequences of presidentialism inherently vary from one democracy to the next, and by Mainwaring and Shugart (1997a), who suggested that presidentialism functions relatively well when presidents have weak legislative power and parties are moderately disciplined.

In the third wave, Robert Elgie (2005) argued that the comparison should be guided by more general theories of political science. In his view, the research objective should be to study and compare the balance of power of political actors within both parliamentarism and presidentialism. In this vein, George Tsebelis and Kaare Strøm applied veto player and principal-agent theories to explore power-sharing relations within each type of regime. While Tsebelis (1995; 2002) argued that the multi-party setting in parliamentarism and the executive-legislative balance in presidentialism were what shaped partisan strategies, Strøm (2000) argued that the chain of delegation was the decisive factor behind the motivation of political parties.

These waves are highly relevant to understand the gap in literature, since one common finding was that parties that would normally form coalitions in parliamentarism would only exceptionally form coalitions in presidentialism (Linz and Valenzuela, 1994: 19). Indeed, academics across all three waves concurred that the institutions found in parliamentary regimes generated stronger incentives for parties to cooperate with one another than those found in presidential regimes (see Linz and Stepan, 1996: 181; Mainwaring, 1990; Mainwaring and Scully, 1995: 33; Stepan and Skach, 1993: 20). As a backlash, coalition formation in presidential regimes was relegated to a secondary role in subsequent scholarship.

In a more recent contribution, José Antonio Cheibub (2007) revived this debate (also see Cheibub *et al.*, 2004). In the process, he made a major breakthrough regarding the role of coalitions in presidential regimes. He showed that institutions found in presidential regimes did not, as initially suggested, hinder coalition formation. After controlling for the distribution of seats and policy preferences, parliamentary and presidential systems were equally likely to host government coalitions, and if these were less frequent in the latter it was only in cases in which legislatures were relatively weak (or presidents were extraordinarily strong), suggesting that both formateur power and the party system are relevant determinants.

Latin American presidential regimes are ideal for exploring these questions. In contrast to the 1980s, the period Linz and other authors of the three waves of parliamentary/presidential studies looked at, today half of the democracies in the region constantly undergo electoral and government coalition formation (Chaisty *et al.*, 2018). The evolution in the frequency of coalitions provides a perfect backdrop to explore when, how and why parties decide to form coalitions. Data stemming from almost four decades of democracy is bound to hold important hints that will help uncover the dynamics behind one of the most important forms of political organization in the region today.

The tension between the conventional view and the actual behavior of coalitions in the presidential regimes requires a revision. While the overall trend of coalition formation in the region has fostered a growing scholarly interest in regime survival (Cheibub and Limongi, 2002; Neto and Samuels, 2011), the process of cabinet formation (Altman, 2000, Martínez Gallardo, 2012, 2014; Camerlo and Martínez-Gallardo, 2017), legislative performance (Alemán and Saiegh, 2007), executive-legislative crisis (Pérez-Liñán, 2005), bicameralism and federalism (Albala, 2017) fundamental questions on the determinants of coalition formation remain unanswered. Why do parties cooperate with one another in presidentialism? And, more specifically, why do parties in presidential regimes form electoral and government coalitions?

This article examines coalition formation in presidential regimes. It attempts to explain why parties cooperate with one another in the form of coalitions, despite the institutional characteristics of presidentialism that have been found to theoretically hinder coalition formation. It also attempts to explain why some parties form electoral coalitions and others form government coalitions. Because this particular body of literature is burgeoning, this article borrows from theories of coalition formation in parliamentary regimes. It uses established concepts from proven power sharing theories to fill in the gaps, and tests a theories of hypotheses that have been so far treated independently.

It also borrows from the work of Cheibub (2007). It uses his contribution as a point of departure to develop a more sophisticated theory of coalition formation in presidential regimes. It aims to advance his original research agenda by providing additional conceptual context and explanatory power related to the specific types of coalitions found in Latin American presidential regimes. Furthermore, in addition to looking at coalition formation at the government level, it looks at coalition formation at the electoral level. It builds on previous work by adding a significant number of cases to the sample as well as a larger set of independent variables—classified into three different theories—to provide a more comprehensive account. By contextualizing and expanding the scope it provides a stronger framework for future studies.

The remainder of this article is structured as follows. The second section reviews theories of coalition formation. It differentiates between the traits of

coalition formation under parliamentarism and presidentialism, and shows that contrary to conventional wisdom, parties have several reasons to form coalitions in presidential regimes. The second section outlines three theories that aim to explain coalition formation in presidentialism, related to formateur power, electoral structures and party systems. The third section breaks the research questions into hypotheses. The fourth section presents the data and methods. The fifth section presents the findings, and the sixth section discusses them. The final section makes some concluding remarks.

### II. THEORIES OF COALITION FORMATION

In most democracies, rational parties compete for votes, both to control office and for the opportunity to influence policy (Strøm and Muller, 1999). In multi-party systems, however, a single party is often unable to garner a majority of support. Thus, parties that wish to win elections typically cooperate with other parties and form coalitions. This is normally the case in parliamentary democracies where parties cooperate to avoid minority governments, and sometimes the case in presidential democracies where parties cooperate to avoid minority presidents (Laver and Schofield, 1998; Strøm, 1990). William Riker (1962) argues that coalitions attempt to form with the minimum number of parties possible to maximize office spoils.

Not all coalitions are alike. Cheibub *et al.*, 2004) distinguish between legislative and government coalitions and define the former as a set of legislators belonging to parties that vote in the same direction with the same intensity in the legislature, and the latter as a set of politicians belonging to parties that share cabinet posts in the executive. Similarly, Royce Carroll and Gary Cox (2007) distinguish between legislative and presidential coalitions, using the same definition for the former, but adding that their strength will be mediated by their capacity of extending their cooperation in parliament to a formal agreement to back the same presidential candidate.

Sona Golder (2006) builds on this classification and distinguishes between coalitions that form before elections, and coalitions that form after elections. Recently, research has advanced on both electoral coalitions (see Chiru, 2015; Kellam, 2017) as well as government coalitions (see Chaisty *et al.*, 2018). This article intends to build on this line of scholarship. It focuses on these two categories: electoral and government coalition formation. In this line, the objective is to determine the reasons why parties decide to cooperate with each other in elections and during government. It follows the distinctions that stem from parliamentary studies and adds recent evidence that stems from presidential countries to generate a comprehensive account.

# 1. COALITION FORMATION IN PARLIAMENTARY AND PRESIDENTIAL REGIMES

Mainwaring and Shugart (1997b) note that while coalition formation normally takes place after elections in parliamentary regimes, it generally takes place before elections in presidential ones. In parliamentary regimes, they form after elections to produce majority governments, and thus avoid constantly bargaining with other parties for support in order to prevent being ousted on a motion of no confidence. In presidential regimes, they form before elections to have a greater chance of defeating other parties. Although in both regimes' parties have incentives to form coalitions before elections, in parliamentarsim parties have stronger guarantees that they can join a government coalition, even when they are not successful in the election.

While there is substantive literature assessing the relationship between the executive and legislative branches in presidential regimes, there is much less on the determinants of electoral and government coalition formation (see recent contributions by Albala, 2016, 2017; Alemán and Tsebelis, 2011; Chaisty and Chernykh, 2017; Chaisty *et al.*, 2018; Freudenreich, 2016; Kellam, 2015, 2017; Spoon and West, 2015). This can be mainly explained as a backlash to the faulty conclusions derived from the three waves of literature comparing parliamentary and presidential regimes. Because coalition formation was considered a rare occurrence, little effort was made to design a particular research agenda to explore its causes and consequences.

## 2. COALITION FORMATION IN LATIN AMERICA

Cooperation among parties can be understood as a function of the policy leverage they can attain once in power. Parties and candidates will decide to form coalitions only if they need to do so to pass legislation (see Santos, Pérez-Liñán and García Montero, 2014). If the case of a minority situation, Neto and da Matriz (1998) argues that parties with presidential aspirations normally adopt one of two strategies. One is the administrative strategy, where the emphasis is placed on the faculties of the president to pass legislation through extraordinary measures. The other is the legislative strategy, where the party decides to cooperate to obtain a majority in congress. If a minority president can pass legislation through administrative provisions, he will have no need to form a coalition.

The level of power invested in the president defines whether she chooses to join a coalition. The weaker the president's power, the higher the need for her party to join a coalition (Alemán and Tsbelis, 2011; Neto, 2006; Neto and Strøm, 2006). In some cases, parties will join coalitions to avoid constitutional

crisis. In others, they will do so to pass legislation. In contrast, when power is highly concentrated in the executive there is little need for the incumbent party to join a coalition. It is not surprising, then, that electoral reforms have tended to create incentives for the incumbent party to cooperate with other parties (see Remmer, 2008), yet still provide the president with extraordinary power to govern alone in the case of legislative stalemate (see Negretto, 2013).

Constitutions in some countries grant the president more power than in others. Theoretically, as the power invested in a president increases, the likelihood that he will seek cooperation from other parties decreases (see Jones, 1994; Zucco, 2013). However, this does not necessarily fit the evidence. Some countries grant their presidents strong constitutional power and normally see coalitions form, like Chile and Uruguay. There, the successful coalitions *Concertación* and *Frente Amplio* have served as prime models for center-left coalitions elsewhere. In the same line, some countries grant their presidents weak constitutional power and do not see coalitions form, such as Honduras and Paraguay. There, the *Partido Nacional* and the *Partido Colorado* have consistently dominated both elections and government.

Cooperation among parties is also determined by the rules of the game, which in democracy are namely electoral institutions and the electoral system (henceforth, electoral structures). Restrictive electoral structures generate incentives for small party systems; while permissive electoral structures generate incentives for large party-systems (see Cheibub, 2007; Cox, 1997; Remmer, 2008). Theoretically, coalitions will be more likely to form under permissive conditions than under restrictive conditions. When electoral structures are extremely restrictive, parties will have strong incentives to either join other parties in the form of coalitions or expire. In contrast, when electoral structures are incentives are extremely permissive, parties will have strong incentives to maintain or proclaim their independence.

It follows that democracies that would like to move from small party-systems to multi-party systems would aim to adopt permissive electoral rules. However, while most countries in the region have amended their constitutions in this line (Remmer, 2008), party systems have not dramatically changed their structures (Pérez-Liñán, 2005). Indeed, as Karen Remmer (2008) shows, electoral alterations have tended "to reinforce rather than precipitate changes in patterns of political representation" (p. 6). This is clear if looked at through a political interest lens. Douglass North (1990) suggests that "[i]nstitutions are not necessarily or even usually created to be socially efficient; rather they, or at least the formal rules, are created to serve the interests of those with the bargaining power to devise new rules" (p. 16).

At any rate, permissive electoral reforms have been the norm. Theoretically, this increases the likelihood that parties will seek cooperation from other parties. However, this does not always fit the evidence, as suggested by Anibal Pérez-Liñán (2005) and Remmer (2008). For instance, some democracies with restrictive electoral rules such as Chile and Panama foster a large number of coalitions. Other countries with permissive electoral rules such as Honduras and Mexico never see coalitions form. Notably, however, most countries with permissive regulations, such as Argentina, Brazil, Bolivia and Ecuador, normally see coalitions form.

While formateurs and electoral structures theoretically explain coalition formation, they can hardly do so on their own. A hypothetical democracy with a constitution that grants its president little power and an electoral structure with restrictive incentives has a high likelihood of producing a coalition system. However, if that same democracy has a two-party party system, in contrast to a multiparty system, coalition formation will be unlikely. Even if all of the conditions outlined above are met, but there are only two registered parties, coalition formation will be unlikely. For this reason, the size of the party system is important. Theoretically, it is increasingly likely that coalitions will form in as the size of the multi-party system increases. However, it is important to note that the registered number of parties may not be the best indicator. Indeed, Markku Laakso and Rein Taagepera (1979) argue that the most efficient estimator is the effective number of parties, since parties vary in size. This indicator is normally subdivided into the effective number of electoral parties and the effective number of legislative parties (see Taagepera and Shugart, 1989). Alcántara and Moreno (2008) classifies party systems according to these measures and suggests that coalition formation should be more likely in extreme multi-party systems.

As the number of parties' increases, the likelihood that one of them will seek cooperation from another one also increases. This is relevant, it has been previously noted that party systems have tended to increase in their number of parties (Bunker and Navia, 2010), as coalitions have increased their presence (Chasquetti, 2001). While this causal link seems straightforward, coalitions only sometimes win elections and only sometimes form governments. In some democracies with large party systems, coalitions form as expected (Brazil) while in others they do not always do so (Uruguay). Likewise, in some democracies with small party systems coalitions do not form as expected (Panama) while in others they normally do so (Guatemala).

In definitive, literature suggests that coalition formation is more likely to occur when the formateur has weak power, the electoral structure is restrictive, and the multiparty system is large. However, only some of the particular variables that theoretically construct each of these causal mechanisms have been empirically tested. Adding more variables, from a wider number of cases can significantly increase explanatory power. Furthermore, most of these

theories have only been tested locally in case studies or within small comparative settings. Disaggregating the data into multiple years, both for elections and years of government, can substantially increase the understanding of common factors. The theories presented above will help clarify the puzzle of why presidential democracies increasingly see coalitions form.

## III. RESEARCH QUESTIONS AND HYPOTHESES

The research question that guides this article is: why do political parties form electoral and government coalitions in Latin America? While some literature has been advanced to answer these questions, none has taken a comprehensive approach within presidentialism. This subsection outlines the hypotheses that can be derived from these three theories. These hypotheses aim to explain why electoral and government coalition formation occurs. Some of the hypotheses correspond only to electoral coalition formation, and some correspond only to government coalition formation. Normally the same independent variables are used. However, this will depend on whether the dependent variable is electoral coalition formation or government coalition formation. The following hypotheses are put forward:

- H1. Coalition formation is more likely to occur when the formateur has weak power.
- H2. Coalition formation is more likely to occur when the electoral structure is restrictive.
- H3. Coalition formation is more likely to occur the multiparty system is large.

While the all hypotheses aim to explain government coalition formation, only the second two aim to explain electoral coalition formation. To capture variations, each of the hypotheses are further broken down into a series of independent variables associated with the theoretical expectations and empirical findings presented above.

The objective is to let the independent variables take different forms to see which elements of formateur power, electoral structure and party system size provoke the most influence. Naturally, these hypotheses are tested both independently and in combination with each other across both space and time. While it may be the case that not all independent variables within a specific hypothesis will line up in the expected direction with a strong statistical likelihood, understanding which elements are more salient will be considered to be a finding in itself.

## IV. DATA AND METHODS

This article looks at eighteen democratic regimes in Latin America. Following Chaisty *et al.* (2018), it uses a 'double threshold' based on the two most commonly used regime classification datasets, Freedom House and Polity. It uses cases classified as at least as 'partly free' by Freedom House (less than five on a seven-point scale in which lower number indicate higher levels of freedom), but also as 'open anacrocies' or 'democracies' by Polity IV. This double threshold is useful since it makes case selection sensitive to incremental change. It allows for a more rigorous yet accurate selection of democratic years. For example, it leaves out Peru during the Fujimori years (1990-2000), which would have been included if only one of the indicators were used.

There are two dependent variables. The first is electoral coalition formation (when parties form coalitions to compete in elections), and the second is government coalition formation (when parties form coalitions to govern). Both dependent variables are dichotomous. In the former case, it is set to 1 when two or more parties form an alliance to compete in elections. In the latter case, it is set to 1 when the cabinet is composed by members of at least two different parties. Table 1 shows the list of independent variables that aim to explain when these events are more or less likely to occur. The independent variables are listed under their respective parent theories. The Table also shows the type of variable (continuous or dichotomous), the measurement units and the source when applicable.

In terms of formateur power hypothesis, three independent variables are tested to explore their impact on government coalition formation. The first is formal policy-making powers (such as veto power, decree power, and budgetary power), which is expected to increase the likelihood of coalition formation as it decreases (see Pereira *et al.*, 2005). The second is informal policy-making powers (such as appointment power, emergency power, and inter-branch conflict power), which is expected to increase the likelihood of coalition formation as it decreases (see Neto, 2006). The third independent variable is electoral support for the incumbent formateur, since the likelihood of coalition formation is expected to increase as the percentage of support for the winning president falls (see Cheibub, 2007; Shugart and Carey, 1992).

In terms of the electoral structure hypothesis, nine different independent variables are tested to explore their impact on electoral coalition formation and six independent variables are tested to explore their impact on government coalition formation. Some of them overlap. Four of these variables are related to presidential elections (simple majority plurality, incumbency status, term length, and simultaneousness with other elections) and five of them relate to legislative elections (proportional representation, thresholds, the size

of the legislature, district magnitude, and the number of tiers in congress). All of these electoral structure variables can be ordered on a restrictive-permissive continuum. Theoretically, the more restrictive they are, the more likely they will be to generate incentives for coalition formation.

Among those related to presidential elections, the first variable is Simple Majority Plurality (SMP). When it is available, coalition formation is more likely to occur. When a presidential candidate has only one shot at an election (as opposed to two shots, when a run-off is available), he will attempt to maximize his chances of winning by forming a broad enough coalition to surpass the required threshold. In most cases, parties that are asked to join a coalition will seek a reward in exchange for their endorsement, such as cabinet portfolios or congressional power positions. Thus, while SMP offers strong incentives to join a coalition before an election, the formateur-elect will often decide to uphold the agreement for the duration of his administration

A second independent variable is related to the formateurs incumbency status. When the formateur is bidding for reelection, or when he is successfully reelected, coalition formation is more likely to occur. Because incumbents that seek re-election are usually considered front-runners, smaller parties that do not stand a chance will seek to back them in exchange for cabinet portfolios. Similarly, formateurs in their second term are more likely to see government coalitions form, since they are likely to uphold partisan agreement that stem from their first term. This is also reinforced by trends in presidential approval in the region, since popularity levels have been noted to drop in the second of two consecutive terms. In these cases, formateurs need to make strategic alliances in order to pass legislation.

A third independent variable is related to the formateurs term length. When it is a longer term, coalition formation is more likely to occur (see Neto, 2006). When term limits are short (say, four years), smaller parties will be willing to take their chances in competing against larger parties in elections, since they will have another chance to compete (or at least reassess their strategy) in just a few years. In contrast, when term limits are long (say, six years), smaller parties will not be as willing to take the same chances, since the distance to the next election is significantly longer. In this case, when the smaller parties opt out of competing on their own and join a coalition with a larger party, they maximize their chances of obtaining cabinet portfolios.

The fourth independent variable is related to the simultaneousness of presidential and legislative elections. When these two elections are concurrent, coalition formation is more likely to occur (see Borges and Turgeon, 2017). Concurrent elections force parties to have a national strategy, in which larger parties will tend to negotiate with smaller parties for legislative support, and smaller parties will tend to negotiate with larger parties in

exchange for cabinet portfolios. When elections are concurrent, coalitions are usually a win-win strategy for both large and small parties. In contrast, when elections are held separately, parties tend to have divergent electoral strategies. Large and small parties with different interests may converge in concurrent elections.

Among those variables to legislative elections, the first is the electoral system. When votes are translated to seats by means of proportional representation, coalition formation is more likely. This is based on the premise that PR systems encourage multi-party systems, and thus boost the chance that at least some of the parties will find a common platform to campaign on. As the party system becomes more crowded, the chance of finding like-minded parties increases. In turn, as the number of like-minded parties' increases there will be more incentives for them to negotiate and form coalitions, or even merge. As explained below, in small party systems there are fewer incentives to cooperate, since more parties have a chance of winning on their own.

A second variable in this line is related to barriers of entry. When legislative electoral systems have thresholds to gain legislative representation, coalition formation is more likely to occur. The logic being that the survival instinct of small parties will force them to find a way of remaining active in the political system. If a small party anticipates a low vote share in the upcoming election, the incentive to cooperate with a larger party, increases. This is tied in with the psychological incentives of parties when strategically deciding how to approach elections (see Benoit, 2005). If a small party anticipates that the electoral system will harm their chances of entering congress, they will choose to negotiate with a larger party in order to secure access to the legislature.

The size of the legislature is also relevant to explain why parties cooperate. When more legislators are elected to congress, coalition formation is more likely. When there are many seats available, larger parties will be looking to co-opt smaller parties and avoid potential veto-players. Since large parties are central in forming government or opposition, it is important for their purpose to have the greatest number of parties aligned on their side. If they do not negotiate with smaller parties, they risk internal dealignment. Likewise, smaller parties may seek to cooperate with larger parties, since their vote share will probably not give them a significant quota of power in congress anyway. From their perspective, it may be important to form a coalition with a larger party and piggyback on their share of power. At any rate, the size of the legislature has been found to be an important predictor of the number of parties (Shugart and Taagepera, 2017).

A fourth variable is related to the size of legislative districts. When many legislators are elected in each district, coalition formation is more likely to

occur. The logic behind this hypothesis is that because small parties face elimination if they decide to compete against large parties in districts where few seats are available, they will tend to maximize their chances of survival and join a coalition. Larger districts tend to favor larger party systems (Cox, 1997; Duverger, 1954; Riker, 1982), which in turn tend to favor coalition formation. However, it is important to note that there is a district magnitude "sweet spot", which tends to be large but not too large (see Carey and Hix, 2011). Parties have just as few incentives to join coalitions when district magnitudes are too small as they have when district magnitudes are too large (see Shugart and Taagepera, 2017). Finally, the number of chambers in Congress are also an important element. When congress is bicameral, coalition formation tends to be more likely. In contrast to unicameralism, two-chambers are more complex. There are more veto players in bicameralism, therefore negotiations tend to be more prolific (see Tsebelis, 2000). As Albala (2017) suggests, bicameral majority constitutes a sufficient, but not necessary, condition for enduring coalition agreements. In anticipation of difficult legislative situations, presidential candidates will normally seek to form coalitions to boost the chances of passing their program if they are eventually elected and sitting presidents will do so naturally in order to manage stalemate or control presidential approval rating.

In terms of the party system hypothesis, two independent variables are tested to explore their impact on electoral and government coalition formation. The first is the size of the party system. Since timing is relevant, this variable is divided into two indicators: the number of electoral parties (ENEP), and the number of legislative parties (ENLP). The impact of the former will be tested on electoral coalitions, and the impact of the latter will be tested on government coalitions. The central idea is the same for both. When there are more parties in the system, coalition formation will be more likely (see Kellam, 2017). However, it is important to note that the ENEP will always be larger than the ENLP. Thus, it could be possible that because of a reductive mechanism, a lower ENLP will be a better predictor of government coalitions. A second independent variable is the formateurs legislative majority. When there are many seats in congress occupied by parties sympathetic toward the president, coalition formation is more likely (see Kellam, 2015). At the very core of this hypothesis sits the idea that parties will first merge in congress and then work towards a government or electoral agreements. If likeminded parties cooperate and vote for policy in the same direction, it is only natural for them to evolve into a larger compromise. However, it can also be due to reverse causation. It may be the case that the president has a large working majority in Congress because he already has formal agreements at the electoral or government levels.

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H1: Formateur Power		
Formal Policy-Making Powers	Continuous	Index of formal powers of the sitting president (Negretto, 2013); a higher index indicates more power
Informal Policy-Making Powers	Continuous	Index of informal powers of the sitting president (Negretto, 2013); a higher index indicates more power
Vote % in Previous Election	Continuous	Percentage of votes for the sitting president in the first or only round of elections
H2: Electoral Structure		
SMP	Dummy	1: if president is elected in the first round; 0: otherwise
Concurrent Elections	Dummy	1: if presidential and legislative elections are concurrent; 0: otherwise
Incumbency Status	Dummy	1: if president is able to bid for immediate reelection; 0: otherwise
Term Length	Continuous	Number of years in the fixed presidential term
Proportional Representation	Dummy	1: if the majority of seats in the lower chamber are assigned by a PR-system; 0: otherwise
Threshold	Dummy	1: if there is a minimum threshold for parties to gain representation; 0: otherwise
Size of Legislature	Continuous	Number of legislators in the lower (or only) legislative chamber
District Magnitude	Continuous	Number of median district magnitude in the lower (or only) legislative chamber [also squared]
Bicameralism	Dummy	1: if Congress has two chambers; 0: otherwise

Table 1. Hypotheses, variables and measurement

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Variable	Type	Measurement and source
H3: Party System		
Effective Number of Parties	Continuous	Number of electoral or legislative parties (Laakso and Taagepera, 1979)
Formateur Legislative Majority	Continuous	Percentage of votes for the president-elect (or the sitting president)
Political Controls		
Electoral Coalition	Dummy	1: if the current government was backed by an electoral coalition; 0: otherwise
Crisis	Dummy	1: if a major political crisis occurred that year; 0: otherwise (Llanos and Marsteintredet, 2010)
Left	Dummy	1: if the current government was led by a left-wing president; 0: otherwise
Outsider	Dummy	1: if an outsider presidential candidate competed in the previous election; 0: otherwise
Age of Democracy	Continuous	Number of years since most recent transition to democracy
Economic Controls		
Inflation	Continuous	Index of inflation lagged one year (Word Bank)
Growth	Continuous	Growth Domestic Product per capita lagged one year (Word Bank)
Inequality	Continuous	Gini coefficient lagged one year (Word Bank)
Note: All variables are coded by author	with information	rom national electoral services and political constitutions, unless stated otherwise.
<i>Source:</i> Author.		

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A series of additional variables are added to the models to control for external factors. One set of these controls are related to political variables, such as presidential crisis, left-wing government, outsider candidates, and the age of democracy. When they occur, coalition formation becomes more likely. Thus, when a democracy is going through crisis, the president belongs to a left-wing party, an outsider competed in the previous election, and the democracy is young, coalition formation is expected to be more likely to occur.

A second set of these controls are economic variables, such as inflation, growth and inequality. When the Consumer Price and Gini indexes are low while the GDP index is high (in the previous year), coalition formation is expected to be more likely to occur.

## V. METHODS

This article uses data stemming from eighteen countries, 100 elections and 407 aggregate years of democratic government.<sup>1</sup>As mentioned above, the dependent variable depends on whether coalition formation occurs at the electoral or at the government level. In the former case, it is a dichotomous indicator that tests whether both the winning and the runner-up formateur candidates are backed by coalitions of two or more parties. In the latter case, it is a dichotomous indicator that tests if the government portfolio is composed by members of at least two different parties. The independent variables are those mentioned above. Control variables are held constant across all models. The unexplained variation is manifested in the error component.

Data are organized and tested to account for individual heterogeneity. In these models, observations are treated as panel data to control for variables that could not be directly observed or measured. Thus, they are treated as cross-sectional time series with a time series logit function. This statistical technique is regularly used in studies that use data with multiple observations in multiple countries. Data is tested with both random effects and fixed effects

<sup>&</sup>lt;sup>1</sup> The distribution of elections and years across countries is as follows: Argentina (6 elections and 27 years), Bolivia (6 elections and 21 years); Brazil (6 elections and 25 years); Chile (4 elections and 20 years); Colombia (7 elections and 27 years); Costa Rica (7 elections and 27 years); Dominican Republic (8 elections and 27 years); Ecuador (9 elections and 24 years); El Salvador (5 elections and 25 years); Guatemala (6 elections and 24 years); Honduras (7 elections and 28 years); Mexico (2 elections and 10 years); Nicaragua (4 elections and 19 years); Panama (4 elections and 16 years); Paraguay (4 elections and 17 years); Peru (4 elections and 19 years); Uruguay (5 elections and 25 years); Venezuela (6 elections and 26 years).

models (McCullagh and Nelder, 1989). The random effects models assume that the error term is not correlated with the respective independent variables, which allows for time-invariant variables to play a role as explanatory variables. The fixed effects models do not make the same assumption.<sup>2</sup> The specification for all of the models is as follows:

$$\Upsilon_{it} = \beta_1 \chi_{1it} + \beta_2 \chi_{2it} + \beta_3 \chi_{3it} + \beta_4 \chi_{4it} + \zeta_{it} + \eta_i + \xi_{it}$$

where  $\Upsilon_{it}$  is the value of the dependent variable for the *i*th case (country) in the sample at the *i*th time period (year);  $\beta_1$  is the coefficient corresponding to each of the variables in the first vector (formateur power) and  $\chi_{1it}$  it is the value corresponding to each of its time varying covariates.  $\beta_2$  is the coefficient corresponding to each of the variables in the second vector (electoral structure) and  $\chi_{2it}$  is the value corresponding to each of its time-varying covariates.  $\beta_3$  is the coefficient corresponding to each of the variables in the third vector (party system) and  $\chi_{3it}$  is the value corresponding to each of its time-varying covariates.  $\beta_4$  is the coefficient corresponding to each of the variables in the fourth vector (control variables) and  $\chi_{4it}$  is the value corresponding to each of its time-varying covariates.  $\zeta_{it}$  is the unknown intercept for each entity;  $\eta_i$  is the between-entity error; and  $\xi_{it}$  is the within-entity error.

# VI. EXPLANATIONS FOR ELECTORAL AND GOVERNMENT COALITION FORMATION

Table 2 shows the determinants of electoral coalition formation. It shows three models with different combinations of the independent variables. Model 1 shows the impact of the electoral structure, and Model 2 shows the impact of the party system, and Model 3 shows a combination of the two theories.

<sup>&</sup>lt;sup>2</sup> To choose between the random effects and the fixed effects models a Hausman test was applied. In it, the random effects model was compared to the fixed effects model to test whether the error terms were correlated with the independent variables. The null hypothesis was that the two estimation methods were equally appropriate, and the alternative hypothesis was that the fixed effects estimation was marginally more appropriate (Hausman and McFadden, 1984). In every case it showed a small and non-significant Hausman statistic, which suggested that the null hypothesis could not be rejected. This indicated that the random effects models were a more appropriate method to test the hypotheses with this particular set of data. Thus, only random effects models are shown.

Bicameralism, proportional representation and size of the legislature are the most important elements of the electoral structure when it comes to predicting electoral coalition formation. When they are compared to each other, in Model 1, bicameralism and PR are significantly more important, suggesting that when congress is divided into two tiers, and legislators are elected with proportional representation formulas, parties have stronger incentives to cooperate. In essence, the probability of electoral alliances is higher in bicameral democracies that use proportional representation systems (such as Argentina or Brazil) in comparison to those that use majoritarian components (such as Mexico or Panama).

The number of electoral parties is also a crucial predictor for electoral coalitions. As the number of parties that compete in elections increases, the probability of electoral coalition formation also increases. It need not be this way; parties could very well work as a replacement for coalitions. The number of parties could grow at the expense of coalitions. Yet, evidence shows the contrary. The ENEP holds both its magnitude and direction of impact, as well as its significance, across all models. Irrelevant of the variables tested, the number of parties that compete in elections is the most powerful predictor of coalition formation.

	Model 1	Model 2	Model 3
Electoral Structure			
SMP	0.23 (2.89)		0.44 (1.10)
Reelection	0.46 (1.79)		-0.52 (1.34)
Term Length	-0.74 (1.10)		0.23 (0.70)
Concurrent Elections	0.33 (2.70)		-0.19 (1.63)
Bicameralism	5.74 (3.42)*		0.65 (1.64)
PR	4.72 (3.13)*		1.23 (1.49)
Threshold	-1.50 (2.39)		0.46 (1.30)
Size of Legislature	0.05 (0.02)*		0.02 (0.01)
District Magnitude	-0.21 (0.44)		-0.14 (0.24)
District Magnitude Sq.	-0.00 (0.01)		0.00 (0.00)*
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Table 2. Determinants of Electoral Coalition Formation

	Model 1	Model 2	Model 3
Party System			
Electoral Parties		0.62 (0.20)***	0.68 (0.22)***
Formateur Majority		2.87 (1.99)	2.64 (2.14)
Political Controls			
Outsider	-1.45 (1.29)	-0.80 (0.88)	-0.62 (1.10)
Age of Democracy	-0.04 (0.06)	-0.03 (0.03)	-0.03 (0.04)
Economic Controls			
Inflation	0.00 (0.00)	0.00 (0.01)	0.00 (0.00)
Growth	0.01 (0.14)	0.09 (0.10)	0.11 (0.10)
Inequality	0.09 (0.12)	0.01 (0.07)	-0.00 (0.08)
Model Fit			
Constant	-13.34 (10.32)	-5.05 (4.04)	-9.39 (6.80)
Ν	100	100	100
Log Pseudolikelihood	-42.56	-45.57	-39.00
lnsig2u	3.28	0.99	-0.79
sigma_u	5.16	1.64	0.96
rho	0.89	0.45	0.22

*Source:* Author. *Note:* The dependent variable is: Electoral Coalition Formation. The numbers in parenthesis are Standard Errors. *Legend:* \* Significant at the 95% (0.05) level; \*\* significant at the 99% (0.01) level; \*\*\* significant at the 99.9% level (0.001).

Table 3 shows the determinants of government coalition formation. Model 4 shows the impact of formateur power, Model 5 shows the impact of the electoral structure, and Model 6 shows the impact of the party system. Model 7 shows a combination of the three theories. In comparison to Table 2, there are some differences in the sets of independent variables used. Most importantly, the effective number of legislative parties instead of the effective number of electoral parties.

Formateur power is a strong and consistent predictor of government coalition formation. As the power of the president falls, the probability of government coalition formation increases. This makes sense. Since all presidents seek to pass legislation, the real question is how they attempt to do

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so. If the president has ample constitutional power and high levels of popular support, she will likely be able to pass legislation unilaterally, and choose to govern alone with her party. Instead, if she has a combination of low power and low vote share, she will likely need to seek support from other parties to get things done. While formateur power is important across all contexts, informal powers seem to be a slightly better predictor than formal powers.

The electoral structure is also a defining element when it comes to government coalition formation. The manner in which the president is elected is defining. The probability of a president forming a multi-party cabinet significantly increases when the president is elected in a single round (in contrast to a runoff).

Term length is equally important. As the number of years in the term increases, the probability of coalition formation grows. Presidents that govern for six years are more likely to form coalitions than presidents that govern for four years. As discussed above, the logic is more bottom-up than top-down. It is not that large parties seek the support of small parties, but that small parties seek the support of large parties. Since the president has already secured a longer period in power, she is not as concerned as smaller parties in the immediate fate. In contrast, small parties are pressured to pact early on in the term so that they can secure political relevance. The logic is that a small party is worth more in government than in opposition, provided there are sufficient ideological affinities.

Another important predictor of government coalition formation is electoral coalition formation. If the president-elect was supported by an electoral coalition in the immediately previous election, she will almost certainly govern with a coalition. This echoes "Gamson's Law," in that parties that endorsed the president in the election will be rewarded with cabinet posts. Only rarely will a president that competed alone in the election decide to negotiate with other parties for support (one exception is the Violeta Chamorro administration in Nicaragua).

Perhaps the most interesting finding, however, is that as the number of legislative parties' declines, the probability of government coalition formation increases. While this seems counterintuitive, especially considering the relationship between ENEP and electoral coalitions, is makes sense since there is a mechanical reductive factor occurring between elections and government formation. Since there will never be as many ENLP as there are ENEP, an implicit indicator of coalition formation is precisely a decline in the number of parties in this period. Furthermore, if there are fewer parties in congress, the president will have incentives to seek support elsewhere, to prevent facing an opposition cartel (see Slater and Simmons, 2013).

	Model 4	Model 5	Model 6	Model 7
Formateur Power				
Formal Power	-0.11 (0.05)**			-0.04 (0.04)
Informal Power	-0.07 (0.03)**			-0.16 (0.05)***
Vote Share	-0.09 (0.04)**			-0.28 (0.06)***
Electoral Structure				
SMP		11.26 (4.52)**		6.24 (2.16)***
Reelected		-0.05 (1.02)		1.26 (1.26)
Term Length		3.17 (1.06)***		4.50 (0.85)***
Concurrent Elections		0.09 (0.46)		0.22 (0.49)
Bicameralism		-3.39 (3.66)*		0.95 (1.76)
Size of Legislature		-0.08 (0.02)***		-0.00 (0.01)
District Magnitude		-1.42 (0.28)***		-1.25 (0.27)***
District Magnitude Sq.		0.01 (0.00)***		0.01 (0.00)***
Party System				
Legislative Parties			-0.66 (0.30)**	-1.08 (0.50)**
Formateur Majority			4.64 (1.33)***	3.60 (1.77)**
Political Controls				
Electoral Coalition	6.66 (1.09)***	12.04 (1.82)***	6.39 (1.14)***	10.61 (1.37)***
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Table 3. Determinants of Government Coalition Formation

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	Model 4	Model 5	Model 6	Model 7
Crisis	2.85	3.70	1.82	1.63
	(1.34)**	(1.46)***	(1.19)	(1.54)
Left	-0.91	-0.62	-0.87	0.19
	(0.54)	(0.78)	(0.51)*	(0.84)
Outsider	-1.40	3.55	0.06	-0.58
	(0.77)*	(1.09)***	(0.67)	(1.10)
Age of Democracy	-0.13	-0.14	-0.10	-0.19
	(0.03)***	(0.04)***	(0.03)***	(0.05)***
Economic Controls				
Inflation	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Growth	0.05	0.14	0.04	0.18
	(0.04)	(0.07)**	(0.05)	(0.07)
Inequality	0.04	-0.00	0.09	0.13
	(0.05)	(0.09)	(0.05)	(0.10)
Model Fit				
Constant	7.71	-1.38	-5.99	-7.55
	(4.20)*	(7.32)	(3.00)**	(7.41)
Ν	407	407	407	407
Log Pseudolikelihood	-157.26	-124.02	-152.98	-96.26
lnsig2u	3.63	5.36	2.27	4.97
sigma_u	6.14	14.58	3.11	12.03
rho	0.92	0.98	0.75	0.98

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*Source:* Authors. *Note:* The dependent variable is: Government Coalition Formation. The numbers in parenthesis are Standard Errors. *Legend:* \* Significant at the 95% (0.05) level; \*\*\* significant at the 99.9% (0.01) level; \*\*\* significant at the 99.9% level (0.001).

One variable that is consistently significant across all scenarios is the age of the democracy. Government coalition formation is more likely in younger democracies. This makes sense, especially in the Latin American context. As democracies consolidate and party systems institutionalize, coalition formation stabilizes. While there is a larger share of coalitions in government today than thirty years ago, the countries in which they form are

different. Countries that were young democracies three decades ago were more likely to see coalition formation then than they are now.

These findings suggest that the three hypotheses postulated above can be accepted, with some caveats. The probability of electoral coalition formation increases as the electoral structure becomes more restrictive and the party system becomes more fragmented. Some variables are substantially more important than others, such as the size of the legislature and the ENEP. Similarly, the probability of government coalition formation increases as the formateur falls in power, and the electoral structure becomes more restrictive. While there is mixed evidence for the hypothesis that a larger party system will lead to government coalition formation, it is likely that both variables are linked through a causal mechanism in which the number of parties are mechanically reduced in the process of translating votes into seats (see Benoit, 2002).

### VII. CONCLUDING REMARKS

This article contributes to the burgeoning body of literature preoccupied with building a theory of coalition formation particular to presidentialism. Through a wide theoretical review, it identifies some of the major variables previously syndicated as important determinants of coalition formation. It takes a confirmatory approach and tests them together in the same model. It finds that the data is generally consistent with the theories are hypotheses. As the president's power decreases, electoral structures become more restrictive and party systems become more fragmented, the probability of coalition formation increases. This article complements previous contributions by taking a holistic to explain both electoral and government coalition formation.

This article also contributes by finding that within each of the theories put forward, some variables are more important than others, such as the president's informal authority in the formateur power theory, bicameralism, proportional representation and the size of the legislature in the electoral structure theory, and the number of parties in the party system theory. While it establishes that the theories are generally consistent at the macro-levels, it also singles out the specific variables that are most influential in coalition formation. In this line, it also eliminates variables that have been mistakenly considered important determinants in the past, such as the concurrency of presidential and legislative elections and the incumbency status of the president.

The findings in this article are important insofar as yielding critical insight into partisan strategies in both the run-up to elections and the maintenance of governments. It is consistent with recent research that has found that coalition formation is more likely under some scenarios, such as bicameralism (Albala, 2017) and formateur majority (Kellam, 2015). Other relationships need to be further explored, such as the link between the size of the legislature and electoral coalitions as well as the link between the age of democracy and government coalitions.

These finding contribute to a general theory of coalition formation, which has thus far either been approached by findings made in parliamentary studies or in presidential regime survival. Further research should continue to explore the reasons of coalition formation in presidentialism, either by taking a deeper look at some of the variables that show likely causal links in this article or by comparing the factors that make coalition formation more likely across different regimes by crosschecking the variables found to be significant above. Future research could also look at the influence of additional variables, not tested here, that may impact coalition formation, such as the size and age of political parties and if they have clientelistic or programmatic tendencies.

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