Essays on Distributive Politics and Party Systems

by

Wooseok Kim

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Doctoral Committee:

Professor Robert J. Franzese, Jr., Co-Chair
Professor Allen D. Hicken, Co-Chair
Professor Walter R. Mebane, Jr.
Professor George Tsebelis

Wooseok Kim

wskr@umich.edu

ORCID iD: 0000-0003-3624-2864

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Dedication

To my family.

Acknowledgements

After completing my undergraduate studies at the University of Michigan and my mandatory military service in South Korea, I returned to Michigan to begin my doctoral studies in Political Science. I knew that I wanted to do academic research and was generally interested in the broad research questions of political science, but had limited knowledge of the discipline given my interdisciplinary undergraduate background. I am extremely grateful to all the faculty and graduate students in the Political Science department at Michigan who taught me much of what I know about political science, showed me what rigorous yet interesting research looks like, exemplified what it means to be effective instructor, and contributed to my academic and personal growth.

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I am most indebted to my family for their unwavering support. I will never be able to repay the sacrifices that my parents made to put me in a position to succeed, but I hope that I can become someone who builds on such sacrifices to invest in the development and learning of others. I would also like to thank my brother for always trying to be like me. Moreover, I was extremely lucky to meet my wife towards the end of my graduate studies. Her patience and encouragement helped me to focus on my research and effectively handle the stress of being on the job market. I am also thankful to my cats—Sam and Mew—who were my only source of company while I was writing the bulk of my dissertation and unable to leave my tiny studio due to the pandemic.

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Abstract

This dissertation consists of four article-length chapters that revolve around the study of distributive politics and/or party systems.

In the first chapter, I use the case of South Korea to present a theory of conditional core-swing targeting that explains how presidents use their strong budgetary powers to manipulate the distribution of government resources. Presidents whose parties already possess a legislative majority are expected to favor core municipalities to strengthen the foundations of their majority constituency, whereas those who seek majority control are predicted to prioritize swing municipalities in an effort to cross the majority threshold. Using a novel dataset of national subsidy allocations that spans three decades, I find evidence in support of my theory. This chapter demonstrates that the beneficiaries of distributive favoritism are not fixed, and that politicians can engage in complex and varied targeting strategies to achieve their objectives.

In the second chapter, I turn my attention to the concept of party system institutionalization. While institutionalized party systems are regarded as key underpinnings of democracies, much of our understanding of this relationship remains disjoint and inconclusive due to unresolved conceptual, measurement, and data challenges. To address these limitations, I focus the concept on the establishment and entrenchment of the interparty rules, and construct a corresponding measure that covers 96 post-WWII democracies using a Bayesian latent variable measurement model. The resulting measure not only has unmatched coverage and demonstrated validity, but also better corroborates theoretical expectations than existing measures. This chapter should

facilitate the advancement of systematic understandings about the causes and consequences of party system institutionalization across a global sample of democracies.

In the third chapter, I examine how two key dimensions of party systems—their degree of institutionalization and nationalization—jointly impact policymaking and policy outcomes in democracies. Party system institutionalization enhances the capacity of parties to sustain intertemporal policy coordination, whereas party system nationalization incentivizes parties to target broader constituencies. As these mechanisms are distinct, I argue that variations across these two dimensions should have disparate implications for the provision of public goods and services. Using a representative sample of democracies, I demonstrate that while party system institutionalization and nationalization are both necessary for increasing the supply of national policies, the former is more important for generating higher quality and more equitable public service outcomes. This chapter presents a more comprehensive framework for understanding the relationship between party systems, policymaking, and policy outcomes.

In the fourth chapter, which is co-authored with Michael Bernhard and Allen Hicken, we examine party system institutionalization in the context of competitive authoritarian regimes. Party system institutionalization is regarded as a critical underpinning of democracies, but its role in non-democratic systems has been understudied. To address this gap, we construct an original data set that disaggregates electoral volatility—the most common measure of party system institutionalization in democracies—into ruling party seat change and opposition party seat volatility, and further divide opposition party volatility into Type-A and Type-B volatility. We find robust results that democratization becomes more likely when decreases in the ruling party's seat share are accompanied by opposition party Type-B volatility. This chapter indicates that party system dynamics can be linked to regime performance even in non-democratic contexts.

Chapter 1

Introduction

1.1 Dissertation Overview

The research presented in this dissertation examines distributive politics and the party system to understand why some democracies produce better outcomes than others, which in turn have important implications for the survival and consolidation of democratic regimes.

If politics is about "who gets what, when, how" (Lasswell 1936), then distributive politics lies at the heart of the study of politics, and is the focus of the second chapter ("Presidents and Conditional Core-Swing Targeting in South Korea"). One strand of the distributive politics literature investigates what kind of voters are favored with resource allocations (Golden and Min 2013), and a major debate within this topic centers on whether politicians target core or swing voters with resources when vying for offices (Cox and McCubbins 1986; Dixit and Londregan 1996). The theoretical arguments presented by each side of the debate are persuasive—core voters are known quantities who can be targeted effectively, while swing voters are more likely to be swayed by additional transfers—but the empirical evidence is decidedly mixed. This could partly be due to the mismatch between theoretical models, which are at the voter-level, and empirical tests, which are generally at the district-level. But more importantly, studies of the core-swing debate do not adequately consider how the political context can lead politicians to vary their targeting strategies. Stated otherwise, politicians may not simply target core *or* swing supporters, but may switch between targeting core *and* swing supporters to best fulfill their political goals.

I use the case of South Korea to explain how presidents account for the political context when allocating government resources to obtain their political objectives. More specifically, I argue that presidents strategically target government resources to help their co-partisans win a majority of the seats in legislative elections because securing majority control enables presidents to pass their preferred policies more freely. Given this objective, I hypothesize that presidents whose parties already hold a legislative majority should invest a greater share of resources in core municipalities to strengthen the foundations of their majority constituency, whereas those who face an opposition-controlled legislature should instead devote more funds to swing municipalities in an effort to gain majority control over the legislature. I also account for the timing of elections, and propose that presidents shift their targeting from safer to riskier municipalities when elections approach and voters become more responsive to transfers. I test my arguments using a newly constructed dataset on government national subsidy allocations that spans three decades, and find that presidents do seem adjust their targeting strategies conditional on their majority status and the electoral cycle in ways that align with my hypotheses.

This chapter not only partly resolves the theoretical and empirical inconsistencies in the core-swing debate by accounting for the broader political context in which distributive policymaking takes place, but also demonstrates that politicians can engage in complex and varied targeting strategies to achieve their objectives. Furthermore, the findings show that even unitary political actors who enjoy strong budgetary powers can still be constrained by and responsive to democratic institutions. Lastly, regionalism and distributive favoritism are intricately intertwined in South Korea. This chapter suggests that more vibrant electoral competition could lead to the weakening of regional cleavages in Korea by generating more fluid electoral coalitions that cross

regional divides, which can in turn reduce incentives to give preferential treatment to specific regions and generate a more equitable distribution of resources.

In the third chapter ("Party System Institutionalization in Democracies: Concept and Measurement"), I shift my focus from distributive politics to party systems. Party systems play a vital role in democracies as they structure the political landscape for both voters and elites, facilitate collective responsibility, aggregate diverse social interests, and determine who gets access to government offices. To better understand how party systems shape the performance of democratic institutions, I concentrate on the concept of party system institutionalization, which concerns the stability and predictability of patterns of interparty competition (Mainwaring 2018). Party systems that are unstable and unpredictable are expected to have more fragile voter-party linkages, reduced accountability, and produce inefficient policies, which can undermine the legitimacy of democratic institutions and increase the risk of democratic backsliding (Casal Bértoa and Enyedi 2021; Mainwaring 2018; Mainwaring and Scully 1995).

Despite party system institutionalization's oft-stated importance for democracies, evidence that clarifies how and the extent to which stable and predictable party systems matter for democracies is not as definitive as is frequently assumed, which can be attributed to ambiguous conceptual foundations on one hand, and the absence of a comprehensive and valid measure of the concept on the other. This chapter addresses these limitations. I first recast party system institutionalization as a strictly institutional process that concerns the rules of the game that govern interparty interactions, which offers a refined concept that remains consistent with existing discussions of the concept. Building on an extensive data collection project on the partisan composition of legislatures and governments, I then use a Bayesian latent variable measurement model to construct corresponding estimates of party system institutionalization that spans 96 post-

WWII democracies. This measure has unmatched coverage, aligns with the latent nature of the concept, quantifies measurement uncertainty, and accounts for non-random missing data. More importantly, it outperforms existing measures in empirical tests of validity, and substantiates the claim that party system institutionalization exerts a strong positive influence over the performance of democratic institutions.

The concept and measure presented in this chapter should promote systematic research on the causes and consequences of party system institutionalization in democracies around the world. As such, the chapter forms the foundations of a research agenda that will advance comprehensive understandings about the importance of institutionalized interparty competition for effective policymaking and the resilience of democratic institutions. Subsequent research will also aim to bridge the rich literature on party building and collapse, on one hand, and democratic consolidation and backsliding, on the other.

The fourth chapter ("Party Systems and the Provision of Public Goods and Services") integrates the themes of first two chapters by exploring how party systems influence the provision of public goods and services in democracies. Party systems shape the policymaking environment and determine who gains representation at the policymaking table, and thus have played a key role in explanations of distributive policymaking. In particular, the institutionalization and nationalization of the party system—which concern the stability and predictability of the party system, and the geographical scope of electoral competition, respectively—are fundamental dimensions of party systems, and have been linked to more equitable and effective policies that promote the national good (Hicken 2018). However, existing studies tend to focus on just one of the two dimensions, and often imply that they have overlapping implications for policymaking. This overlooks the fact that party system institutionalization and nationalization not only

concurrently shape the policymaking environment, but also impact policymaking differently—party system institutionalization facilitates intertemporal policy coordination, whereas party system nationalization encourages parties to have national orientations. Thus, examining one dimension in isolation could lead to incomplete or even inaccurate understandings about how the party system impacts the provision of public goods and services.

Thus, I hypothesize that parties should only supply more national policies (i.e., long-term policies that promote general welfare) if they have both the capacity to coordinate on policies over time and incentives to target broad constituencies, i.e., when the party system is both institutionalized and nationalized. Conversely, I contend that party system institutionalization should play a more significant role than party system nationalization in generating better public services outcomes since the effective provision of public services is principally a function of a stable policymaking environment rather than the geographical scope of distributive policies. Taking advantage of the extensive coverage provided by my measure of party system institutionalization presented in the preceding chapter, I test my hypotheses in an encompassing sample of democracies that exceeds the coverage of most comparative studies of party systems and distributive politics. The results support my argument that party system institutionalization and nationalization have divergent implications for policymaking and policy outcomes. This chapter not only complements past research by reaffirming the instrumental role that party systems play in policymaking, but also offers a more comprehensive yet nuanced understanding of how variations in the institutionalization and nationalization of party systems can lead to more equitable and effective distributive outcomes across democracies.

The fifth chapter ("Party System Institutionalization in Competitive Authoritarian Regimes"), which is co-authored with Michael Bernhard and Allen Hicken, also revolves around

the concept of party system institutionalization, but is studied in the context of competitive authoritarian regimes. Although party system institutionalization has been at the center of many studies of democracies, its function and implications in non-democracies remain relatively unexplored. This presents an important gap in the literature as the rise of competitive authoritarian regimes (Lührmann, Tannenberg, and Lindberg 2018) has meant that party systems have come to play a significant role in politics even when electoral competition is neither completely free nor fair. Moreover, the stability and predictability of the party system may be more critical in such situations since they directly correspond with the strength and survival of the regime itself.

Consequently, this chapter considers the utility of studying party system institutionalization in non-democratic contexts. To this end, my authors and I assess how electoral volatility—which is the standard measure of the concept in comparative studies of democracy—explains the durability of competitive authoritarian regimes. Our reasoning is that electoral volatility reflects the ability of the ruling party to not only coopt and control the opposition through electoral institutions, but also consolidate its status as the dominant political force within the party system. Given this argument, we disaggregate the traditional measure of electoral volatility to differentiate between ruling party and opposition party (Type-A and Type-B) volatility. Using a novel dataset that covers 111 competitive authoritarian regimes across 79 countries from 1945-2018, we conduct the first (to our knowledge) large-N cross-national study of party system institutionalization in competitive authoritarian regimes. The results indicate that an erosion of the ruling party's electoral performance combined with a disruption of the competitive equilibrium among existing opposition parties (i.e., a rise in opposition party Type-B volatility) is a robust predictor of competitive authoritarian breakdown in the form of democratization. That is, the durability of competitive authoritarian regimes may depend on the ability of ruling parties to

develop institutionalized party systems, which lends support to our assertion that party system institutionalization can be a useful concept for making sense of regime dynamics even in non-democratic contexts.

Even though this chapter is not directly tied to issues of democratic performance and consolidation, it is included in this dissertation as it forms another basis for my future research agenda. The patterns of interparty competition observed in past authoritarian regimes could cast long shadows that have profound implications for the performance and consolidation of democratic institutions should a transition to democracy take place (Hicken and Kuhonta 2015; Riedl 2014). However, there has been almost no attempt to measure party system institutionalization outside of democracies, which has constrained assessments of how authoritarian legacies of interparty competition could influence the performance and consolidation of democracies in the long run.[1]

As such, I plan to broaden the scope of my measurement of party system institutionalization to also cover electoral autocracies. The expanded measure should offer novel insights into how the institutionalization and de-institutionalization of party systems impact the long-run trajectories of democratization and autocratization across regimes and over time. This line of research will have meaningful implications for understanding prospects for the successful democratization of autocratic regimes that are ruled through a party-state system such as China, or those with no parties at all, such as countries in the Middle East. Autocrats who have minimal experience with interparty competition may be less receptive to liberalization given that they face greater uncertainty about their ability to successfully control a more competitive party system, which

[1] Electoral volatility can be a crude and noisy measure (Casal Bértoa, Deegan-Krause, and Haughton 2017). As such, while it is encouraging that it still uncovers significant relationships in our chapter, it may not be adequate for analyzing a wide range of political outcomes across regimes and over time.

diminishes the likelihood that democratization can be incrementally and peacefully channeled through electoral institutions. Moreover, even if these regimes do undergo democratization, they may face greater difficulty in developing institutionalized party systems post-transition given their inexperience with interparty competition, which could increase the risk of autocratic reversal. My research will seek to assess whether such pessimistic outlooks for democratization in these contexts are justified.

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Chapter 2

Presidents and Conditional Core-Swing Targeting in South Korea[1]

2.1 Introduction

The fundamental proposition of the distributive politics literature is that politicians manipulate the allocation of resources for their own gain. In South Korea (hereafter Korea), the presidency has often been described as an "imperial office" that remains relatively unconstrained by horizontal checks (Horiuchi and Lee 2008; O'Donnell 1994; Park 2003), and such political power naturally extends to budgetary decisions, as Korea's constitutional and political institutions vest presidents with disproportionate influence to strategically bias the distribution of government resources to achieve their political objectives.

In this chapter, I examine how the political interests of Korean presidents shape the distribution of the national subsidy, which is a form of annual transfers from the central government to municipalities—the main administrative districts in Korea—that makes up a considerable share of both the government's general accounts spending (around 15 percent) and municipal revenue (around 30 percent). For comparison, the budget for the national subsidy in 2018 was on par with the United States government's discretionary spending (around $61 billion) in healthcare in the same year (Congressional Budget Office 2019).[2] While the national subsidy is broadly designed to provide additional funding for the provision of basic services and the

[1] A version of this chapter has been published in the Journal of East Asian Studies.
[2] All Korean Won to US Dollar conversions in this chapter are made using the average monthly exchange rate in 2018, which is around 0.0009.

development of local projects, its distribution is controlled by the central government through an application-based process that is not tied to any predetermined formula, and has often been criticized for lacking transparency and being susceptible to political manipulation. Since many municipalities are highly dependent on transfers from the central government to maintain basic operations, even small systematic biases in the distribution of the national subsidy may accumulate and engender considerable inequality in the long run.

Who benefits from presidentially manipulated allocations of the national subsidy? To discern the targeting logic that drives observed patterns of subsidy allocations, I begin with the core-swing framework, which centers on uncovering what types of voters or districts receive a disproportionate share of politically motivated transfers (Cox and McCubbins 1986; Dixit and Londregan 1996). However, extant literature has largely neglected considerations of how broader political objectives could alter incentives and generate distinct patterns of core-swing targeting. Such objectives are especially critical for understanding the targeting behavior of Korean presidents who, given their position, can be expected to prioritize aggregate political outcomes over winning individual electoral contests over particular types of voters or districts.

The key political objective of interest in this chapter is the competition for majority control of the legislature. I argue that presidents seek to achieve control over the legislature by helping their co-partisans win a majority of the seats in legislative elections and thus do not unequivocally prioritize core or swing municipalities, but instead strategically initiate divergent patterns of subsidy allocations conditional on their majority status, i.e., whether presidents (through their respective parties) currently control a majority of the seats in the legislature. Presidents who already enjoy a legislative majority are anticipated to select a majority-preserving targeting strategy that invests more subsidies in core municipalities to strengthen the foundations of their

majority constituency, whereas those who face an opposition-controlled legislature are instead expected to opt for a majority-building targeting strategy that directs a higher share of subsidies to swing municipalities in an effort to increase their legislative seat shares and seize majority control. I also account for the impact of the electoral cycle, which has been shown to be an important predictor of patterns of government spending, and suggest that presidents respond to the timing of elections by shifting subsidies from safer to riskier municipalities when elections approach and voters become more responsive to transfers. Using a novel data set on national subsidy allocations that spans three decades, I find evidence in favor of the hypotheses, and demonstrate that presidents flexibly utilize their strong budgetary powers to engage in complex and varied targeting strategies.

The remainder of the chapter is structured as follows. In Section 2.2, I outline the budgetary powers of Korean presidents, and contend that presidents strategically apportion the national subsidy to bolster their chances of obtaining majority control of the legislature. I discuss my empirical setup and results in Sections 2.3 and 2.4, before providing concluding remarks in Section 2.5.

2.2 Presidential Targeting of the National Subsidy around Legislative Elections

Presidential Control over the Government Budget

Korea's constitutional and political institutions ensure that the president's interests are incorporated into the government budget. The budget compilation process is highly centralized and overseen by the Presidential Office "in order to take the government's opinions into consideration" (Ministry of Strategy and Finance 2014). Kim and Yun (2002) find that 45.6 percent of bureaucrats and legislators who were questioned about their participation in the budget compilation process agreed (as opposed to 20.8 percent who disagreed) with the statement that the

president's electoral commitments are directly reflected in the budget, while Park (2003) notes that more than half of the budget committee members he surveys judge that their own influence over the budget is "weak" or "almost none."

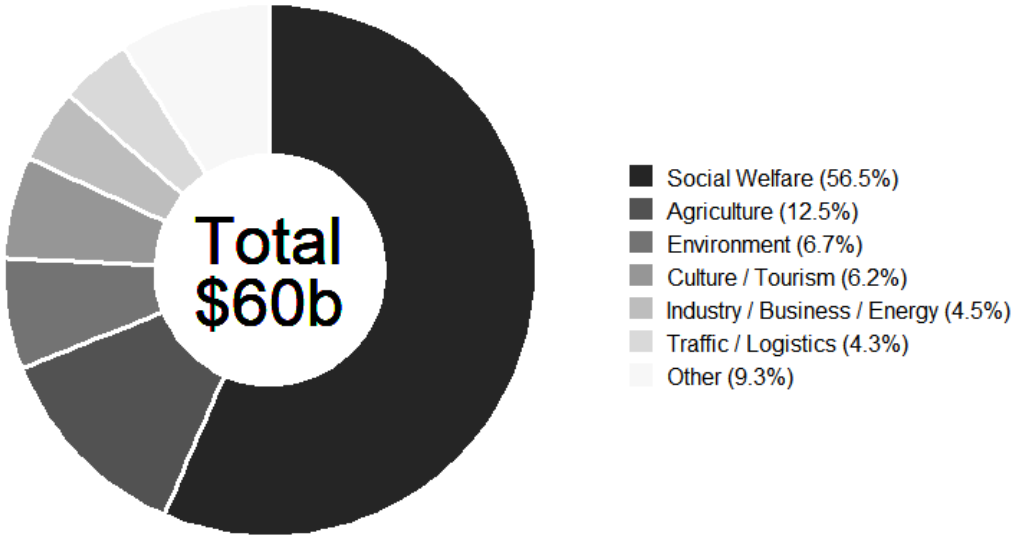
Although the Korean constitution grants the National Assembly, Korea's unicameral legislature, an opportunity to review and modify the budget proposal, its influence is limited due to a lack of time, resources, expertise, and a law that prevents the National Assembly from increasing the budget or introducing new budget items; net changes to the budget proposal rarely exceed 1 percent (Park 2003). Moreover, Korean parties are weakly institutionalized and tend to be electoral machines that are subservient to the whims of political leaders as it is the leaders, and not the parties, who possess a stable political support base and access to funding (Kim 2000; Wong 2015). Since presidents are relatively unconstrained by other actors when determining the budget, observed patterns of subsidy allocations should accurately reflect the logic underlying the targeting strategies that presidents select.

Korean presidents have often flexed their budgetary powers, for better or worse. For example, Kwon (2005) discusses how Roh Tae Woo, the winner of the inaugural democratic presidential election, fulfilled his campaign promise to build two million housing units by constructing three entirely new cities around Seoul, even though—according to Lawrence Krause, the then director of the Korea-Pacific program at UC San Diego—this decision was a "serious policy mistake" that triggered an inflationary spiral (Jameson 1992). Likewise, Horiuchi and Lee (2008) discuss how Kim Young Sam injected around $13.5 billion into the agricultural sector to combat the rapid erosion of his popularity due to the negative consequences of agricultural liberalization, and even introduced a special tax to support the restructuring of the agricultural sector.

The National Subsidy

Annual funding from the central government to municipalities come in two main forms—local allocation tax, and national subsidy—and each form of funding accounts for around 30 percent of municipal revenue on average. Many municipal governments are highly dependent on such transfers to maintain basic operations. Revenues raised by municipal governments from 1989 to 2018 only account for around 30 percent of their total revenue on average, and Kim and Kim (2003) find that more than half of the municipal governments lack the fiscal capacity to cover their employee salaries with their own tax revenues.

Figure 2.1 Overview of the 2018 National Subsidy



Other category: National and Regional Development (2.3%), Health (2.3%), Public Safety (1.5%), Unification / Diplomacy (1.3%), Administration (1.2%), Communication (0.3%), Education (0.2%), National Defense (0.2%), and Science / Technology (0.1%).
Source: Korea Public Finance Information Service (2019).

Whereas the distribution of the local allocation tax is determined by the fiscal revenues and expenditures of municipal governments, the national subsidy is a discretionary grant that is not

governed by any predetermined formula and thus is regarded as being heavily influenced by the political interests of the central government (e.g., Jun 2012; Kwon 2005; Park 1997; Yoo and Gu 2016). Municipal governments, who are better informed about the preferences of their own residents, apply for the national subsidy after assessing their needs, and the central government has the freedom to award the national subsidy to fund basic services and local projects across a wide variety of categories, as shown in Figure 2.1.

Problems of credit-claiming are largely absent in Korea since institutions centralize power in the hands of the president, which makes presidents and their co-partisans the main beneficiaries of any good-will generated by improved flows of resources (Anderson 2007; Powell and Whitten 1993)—numerous studies illustrate that Korean voters reward presidents and their respective parties for improved local economic performance (e.g., Choi and Park 2012; Hong and Park 2014; Kang 2016; Lee 2003; Park 2009). Hence, the national subsidy is a highly flexible and efficient budgetary tool that can be strategically disbursed to satisfy voter demands and bolster electoral support within municipalities, and has even been described as a "fertilizer in a ballot field" (Jun 2012).

Core-Swing Targeting

Who benefits from presidentially manipulated allocations of the national subsidy? In the Cox and McCubbins (1986) and Dixit and Londregan (1996) theoretical models of distributive politics, two parties compete within a single district and deliver resources to voters with the goal of winning an election that follows plurality rule, and voters only support their less preferred party if it is expected to provide a transfer large enough to outweigh their attachment to their preferred party. Cox and McCubbins conclude that candidates will grant more resources to their core supporters who can

be targeted more efficiently and are safer investments, whereas Dixit and Londregan deduce that swing voters will be advantaged since they are more likely to switch their votes in response to transfers.

These two models examine tactical redistribution within a single district whereas most of the empirical research on the core-swing debate is situated within multi-district contexts; naturally, since almost all electoral contests are multi-district. While such studies are tests of the core-swing *district* hypotheses rather than the core-swing *voter* hypotheses (Golden and Min 2013), the district level of analysis is nevertheless highly applicable to cases such as Korea in which a unitary actor—the president—possesses strong control over the budget, and a few votes can mean the difference between winning and losing a legislative seat (Cox 2009; Stokes et al. 2013). However, multi-district studies tend to be framed as empirical tests of competing hypotheses that are less concerned with developing *ex ante* rationale for why politicians might favor core or swing districts, instead relying on variants of the theories presented in the Cox-McCubbins and Dixit-Londregan models to justify their findings. This abrupt transition from the single-district theoretical models to multi-district empirical tests has come at the cost of theoretical oversight about how a multi-district setting can introduce additional incentives and generate varied targeting strategies. As a result, it is unsurprising that the empirical evidence appears to be contradictory.[3]

The implicit assumption in the literature is that politicians manipulate resource allocations to "win" elections but, while winning an election within a single district is indeed an end in itself, what constitutes "winning" in a multi-district election depends on combined outcomes across all the districts. Stated otherwise: how presidents allocate resources to win obviously depends on how they win, and that in turn depends not only on how effectively resource allocations yield wins in

[3] See Golden and Min (2013) for a review.

individual contests, but also on how performance across these individual contests aggregate to overall winning at the system level.[4]

As Cox (2009) discusses, parties engage in both "electoral targeting" (distributing benefits to optimize *electoral* outcomes) and "legislative targeting" (distributing benefits to optimize *legislative* outcomes). It is reasonable to assume that presidents, who are both the leaders of their respective parties and the heads of government, aim to optimize outcomes across the electoral and legislative arenas, and that winning core or swing municipalities is a second-order concern for them. The logic of strategic targeting that I develop in the following section extends beyond considerations of district level characteristics by accounting for broader political objectives. More specifically, I argue that presidents strategically target the national subsidy to "win" legislative elections by securing a majority of the seats (i.e., optimize electoral outcomes) so that they can establish control over the legislature and pass their preferred policies (i.e., optimize legislative outcomes).

Majority-Preserving versus Majority-Building Targeting Strategies

The key assumption in my argument is that presidents seek to "win" legislative elections by helping their co-partisans win a majority of the seats in the legislature. Legislative elections for the National Assembly are held every four years, and presidents face at least one legislative election during their five-year term. Around 300 seats go up for election with approximately 80 percent of the seats filled via single member district plurality rule, and the remainder through

[4] Some studies do provide more nuanced examples of strategic targeting by showing that politicians can use a mixture of goods to appease both core and swing supporters (e.g., Albertus 2012; Kramon and Posner 2013; Magaloni, Diaz-Cayeros, and Estévez 2007). Although they establish theoretical links between the characteristics of supporters and the types of goods that they receive, they do not empirically examine if or how such links might change, nor do they explain cases in which politicians switch their targeting behavior even when the good being examined remains fixed.

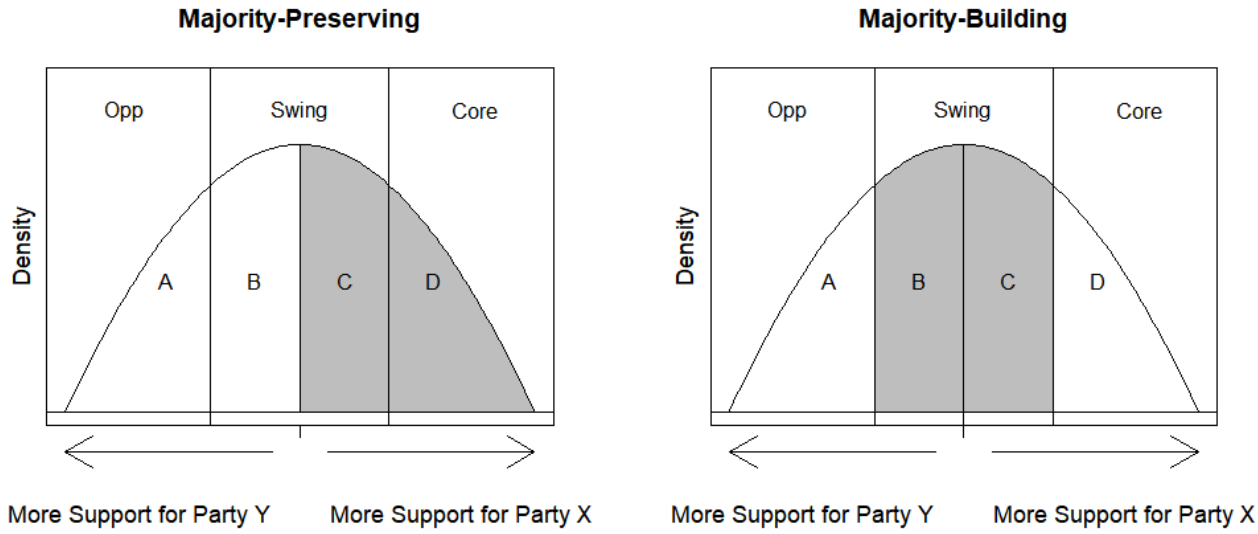
closed party-list proportional representation at the national level. The benefits that come with majority control of the legislature are discussed extensively in the comparative politics literature,[5] and presidents are able to exert considerable influence over the legislature when their parties possess a legislative majority since party discipline is strong in Korea. Moreover, the difference between possessing majority control and facing an opposition-led legislature is likely to be even more pronounced for Korean presidents due to the propensity for Korean politicians to treat politics as a zero-sum game (Croissant 2002; Park 2000).

Given this objective of achieving a legislative majority, I hypothesize that presidents select targeting strategies conditional on their majority status. Let the incumbent president's party *X* be competing against opposition party *Y* in a legislative election. Assume that the president faces a budget constraint, and that the electoral responsiveness of municipalities to transfers from party *X* is positively related to their support for party *X*. Figure 2.2 represents a distribution of municipalities in terms of their relative support for the two parties, which are divided into core, swing, and opposition municipalities for party *X* based on some arbitrary boundaries,[6] and the two divergent targeting strategies discussed in this section: majority-preserving and majority-building. The two shaded areas represent the set of municipalities that each targeting strategy favors with resources.

[5] Presidents whose parties possess majority control of the legislature are better placed to assign more offices and resources to their supporters and initiate their preferred policies, whereas those who are unable to secure a legislative majority are forced to engage in costly and time-consuming negotiations with other parties and may need to share the spoils of government (e.g., Amorim Neto 2006; Browne and Franklin 1973; Laver and Shepsle 1990; Riker 1962; Warwick and Druckman 2001). Furthermore, a divided presidency and legislature can reduce government responsiveness, increase cabinet instability, lead to lower legislative productivity or gridlock and, at worst, destabilize the democratic system (e.g., Coleman 1999; Howell et al. 2000; Kirkland and Phillips 2018; Linz 1990; Mainwaring 1993).

[6] The same logic is applicable when there are multiple parties since municipalities can still be categorized into core, swing, or opposition from the perspective of the incumbent party *X*. Furthermore, skewing the distributions left or right does not alter the predicted patterns of subsidy allocation.

Figure 2.2 Targeting Strategies



Presidents who already control a legislative majority face less electoral pressure to increase their seat share since, for the most part, their parties can retain a majority by holding onto as many of their seats as they can while swaying a few municipalities to offset any losses. This mindset is likely to be reinforced as the marginal benefit of winning additional seats is normally insignificant for presidents who already possess a legislative majority, whereas losing a few seats could cause them to relinquish control of the legislature. Accordingly, an aggressive majority-expanding targeting strategy that aims to increase their seat shares by prioritizing swing municipalities may not be enticing. Rather, majority-holding presidents can be expected to opt for a more conservative majority-preserving targeting strategy that sets aside a portion of government resources for the subset of swing municipalities that are required to maintain a majority,[7] while investing the bulk of the remaining resources into core municipalities, i.e., municipalities in areas *C* and *D*. Cox (2009) presents a similar intuition when he notes that parties that engage in core-targeting may be

[7] In the dataset, around a third of the municipalities are categorized as core when presidents are majority-holders. Hence, these presidents still need to target and win a subset of the swing municipalities to cross the majority threshold.

attempting to secure a "vice-like grip on a small majority" instead of aiming to increase their seat shares, but he does not explore when parties might choose the former strategy over the latter. I suggest that it is when presidents possess a legislative majority that they have incentives to divert more resources to core municipalities, which form the foundations of their majority constituency, rather than compete over many riskier swing municipalities.

It could be argued that the marginal benefit of winning an additional vote is greater in swing municipalities than in core municipalities, and thus presidents who pursue a legislative majority should uniformly concentrate subsidies in swing municipalities regardless of their majority status.[8] Such a logic would hold if core municipalities are indifferent to distributive benefits, or lack thereof. However, core municipalities are likely core in the present partly due to the distributive benefits that they have received in the past, and may expect such flows to persist in return for their continued loyalty.[9] As Cox and McCubbins (1986) point out, "it seems irrational for any group (supportive or not) to be totally unresponsive to redistribution of welfare," and core municipalities are unlikely to remain steadfast in their support if they are continually neglected in favor of other municipalities. Committing resources to core municipalities may be necessary to ensure that they stay core by not only rewarding and maintaining loyalty, but also mobilizing supporters and

[8] A more complex argument could be that majority-holding presidents should target core voters in swing municipalities since they are cheaper to mobilize than their swing counterparts. Such targeting may be theoretically optimal, but challenging to implement in practice. As outlined in Figure 2.1, the types of projects that are funded by the national subsidy can generally be classified as pork, which can make it difficult to isolate benefits to individuals. Even if individual-specific targeting were feasible, the costs of obtaining and matching information about voter preferences over candidates and goods, and then overseeing the targeting to ensure that the correct type of goods go to the correct type of voters may negate much of the efficiency of the national subsidy that makes it such a useful political tool in the first place.

[9] I conducted preliminary interviews with four legislators in the National Assembly and two bureaucrats who had knowledge about the government budgetary process to gain a sense of how the national subsidy might be politically manipulated. All of interviewees acknowledged the president's dominant influence over the national subsidy, and the conversations suggest that the incentive to reward core municipalities may be particularly strong in Korea due to regionalism, which engenders political and social expectations that leaders should "take care of one's own." As one legislator surmised, "I expect presidents to prioritize securing the rabbits in their own backyards before hunting the rabbits in the mountains."

dissuading the entrance of potential competitors (Ansolabehere and Snyder 2006; Bickers and Stein 1996; Chen 2013; Cox 2009; Diaz-Cayeros, Estévez, and Magaloni 2016; Nichter 2008). Since the defection of core municipalities forces presidents to compensate by winning additional swing municipalities in order to cross the majority threshold, the risk of losing or failing to obtain majority control increases without the overwhelming backing of core municipalities. As such, presidents still have incentives to ensure that they receive the full support of core municipalities when they face less pressure to win seats held by competing parties, i.e., when they are majority-holders.

Contrarily, presidents who lack a legislative majority cannot accomplish their goal of seizing majority control from the opposition if their parties do not win seats held by opposition parties. To improve their prospects, majority-seeking presidents can choose a majority-building targeting strategy that bets on the existing electoral support in core municipalities that has been built up from past investments, and channels more resources toward swing municipalities in an effort to sway their support, i.e., those in areas *B* and *C*. Nevertheless, such a tactic is riskier, as the response of swing municipalities to transfers is less certain, and the support of core municipalities may erode in response to reduced transfers.

Electoral Cycle

Timing has also been shown to shape patterns of government spending (e.g., Nordhaus 1975; Rogoff 1990; Tufte 1975). Kang (2015) applies this literature to analyze variations in the targeting of the national subsidy in Korea, and his findings indicate that presidents reward core municipalities for their support during off-election years when a legislative election is not imminent, but shift to targeting swing municipalities in the year prior to legislative elections, or pre-election years, when voters become more responsive to transfers and electoral concerns come

to the forefront. Thus, failing to account for the electoral cycle may lead to spurious conclusions about legislative-majority oriented targeting.

My argument can complement Kang's insight to produce a more nuanced understanding of strategic targeting that is conditional on both majority status and the electoral cycle. Rather than gaining prominence in pre-election years, I suggest that electoral concerns are always present for presidents given the political significance of majority control. As such, I hypothesize that presidents select a targeting strategy based on their majority status, but diversify its implementation over the course of the electoral cycle to enhance the efficiency of their selected targeting strategy. If, as Kang argues, voters become more responsive to transfers as elections approach, then the marginal benefit associated with targeting municipalities with relatively lower levels of support should increase prior to elections. Presidents could then use off-election years to focus on securing the safer subset of municipalities out of the larger set of municipalities that they choose to prioritize, but then take advantage of increased voter responsiveness in pre-election years by designating more subsidies to the riskier subset of municipalities.

Hypotheses

Based on the preceding arguments, presidents are expected to adopt divergent targeting strategies conditional on their majority status and the electoral cycle, which should produce empirically distinguishable patterns of subsidy allocations:

H1a: Presidents who control a legislative majority will choose a majority-preserving targeting strategy that targets more subsidies to core municipalities.

H1b: Presidents who lack a legislative majority will choose a majority-building targeting strategy that targets more subsidies to swing municipalities.

H2a: During off-election years, presidents who control a legislative majority will target more subsidies to core municipalities relative to swing municipalities, while presidents who lack a legislative majority will target more subsidies to swing municipalities relative to core municipalities.

H2b: During pre-election years, the distributive bias in favor of core municipalities will become weaker under presidents who control a legislative majority, while the distributive bias in favor of swing municipalities will become stronger under presidents who lack a legislative majority.

2.3 Data and Empirical Strategy

To test my hypotheses, I gather data from multiple official sources to construct a panel dataset with observations from 345 municipalities from 1989 to 2018, which covers the terms of seven presidents and eight legislative assemblies.

Dependent Variable

The dependent variable is logged subsidy per capita. The data for the national subsidy are collected from the General Accounts summary in the Local Finance Yearbook, which is published annually by the Ministry of Interior and Safety. The mean annual subsidy and subsidy per capita are approximately $72.2 million and $669, respectively.

Support Status

Rather than using vote shares or margins from the most recent legislative election to measure the support status of municipalities (i.e., core, swing, or opposition), I construct a categorical Core-Swing-Opposition (*CSO*) variable that is derived from cumulative voting patterns. To calculate the *CSO* variable for a municipality in year *t*, I first determine the share of all past legislative elections that the municipality elected a candidate from the incumbent president's party.[10] From this value, I categorize a municipality as core (opposition) if it elected a candidate from the president's party in at least 75 percent (less than or equal to 25 percent) of all past elections respectively, and swing otherwise. Thus, the measure is based on electoral outcomes rather than on specific values of vote shares or margins. Under this measure, core (opposition) municipalities for the incumbent president are those that have *consistently*—but not necessarily *always*, as municipalities may occasionally deviate from their traditional voting patterns in response to random shocks—supported (opposed) the president's party in the past, and swing municipalities are those that have exhibited no clear voting tendencies.[11]

[10] Due to population requirements, larger municipalities can be broken down into two or more electoral districts while smaller municipalities can be merged into a single electoral district. In the former case, I total the number of votes gained by each party across the districts, and the party with the most votes is coded as being the winner. In the latter case, I derive the support status of the municipality at both the municipal and district level. I use municipal level data in my empirical analysis since the national subsidy is apportioned according to municipal boundaries, but the results are robust to using district level data as discussed in Section 2.4.

[11] The dominant political cleavage in Korea is regional, which is built on a strong rivalry between the Gyeongsang and Jeolla regions. The two regions have produced the leading presidential candidates and parties in all national elections. Since the first president represented the Gyeongsang region, I code the *CSO* measure for the first legislative assembly (1988 to 1992) using regional divides; municipalities in the Gyeongsang and Jeolla regions are coded as being core and opposition respectively, and municipalities in other regions as swing. Assigning support status based on one legislative election, which also happened to be the first of its kind after democratization, is likely to incorporate unique shocks. This step also mitigates the problem of dealing with the three-party merger in 1990 that involved the president's party since there is no clear theoretical intuition about whether municipalities that voted for the other two parties should be treated as being core or swing. Beginning with the second legislative election, I use cumulative voting patterns to calculate the *CSO* measure. Consistent with my argument, 80 and 86 percent of municipality observations in the Gyeongsang and Jeolla regions are coded as being core for their respective presidents under the *CSO* measure.

Figure 2.3 Boxplot of Vote Share and Vote Margin by Support Status

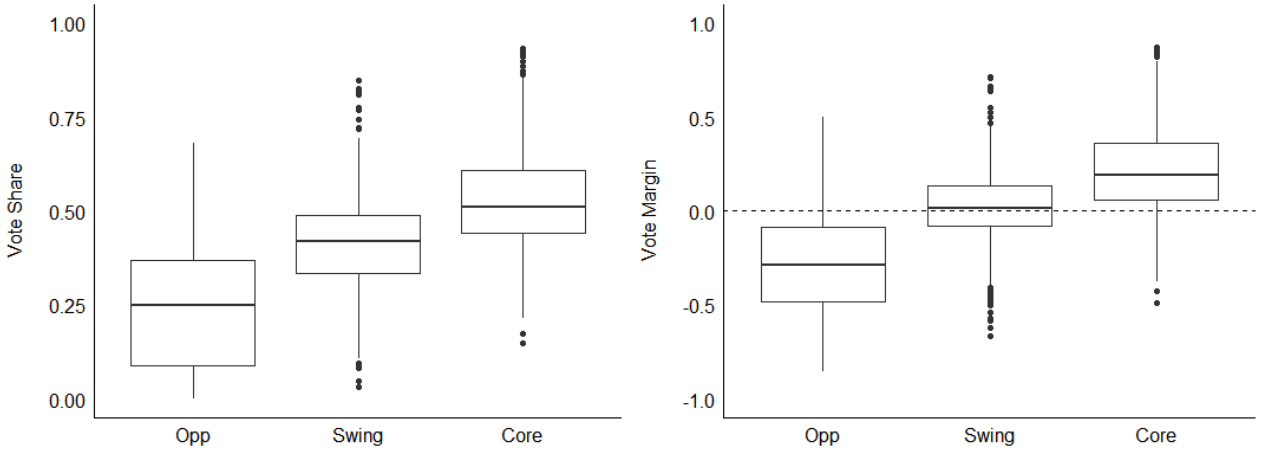


Figure 2.3 shows boxplots of vote shares and margins obtained by the president's party in the most recent legislative election over the *CSO* variable, and confirms that core municipalities generally provide higher vote shares and margins to co-partisans of the president than swing municipalities and swing more than opposition, and also that swing municipalities tend to be more competitive than core or opposition municipalities. Nonetheless, there are cases in which the most recent electoral results do not align with cumulative electoral behavior. Municipalities that have routinely supported or opposed the president's party can be competitive or even swayed, and elections in swing municipalities are not always close. If the ideological preferences of municipalities are thought to change slowly over time, then leveraging information about cumulative electoral behavior should provide a more accurate and robust measure of the support status of municipalities that is less sensitive to random shocks such as political scandals, party switching, the death of a senior legislator, or the number of candidates that choose to run in a given election. All election data are sourced from the National Election Commission.

Majority Status and Pre-Election Years

A president's majority status in year *t* is coded as a dichotomous variable that is determined by the number of seats that the president's party controls in the National Assembly at the beginning of the regular legislative session that year. It is assigned a value of 1 if the president's party controls more than half of the seats in the legislature, and 0 otherwise.[12] The data are sourced from the National Assembly Progress Report published by the National Assembly Secretariat. Presidents have majority control for 17 of the 30 years covered in the data set, and majority control of the legislature flips a total of 6 times. Following Kang (2015), the pre-legislative election year variable is coded as a dummy variable that indicates the year prior to a legislative election year.

Other Variables

I also account for other political and socio-economic variables that could impact the distribution of the national subsidy. Senior legislators or the chairs and members of the budget committee may be able to exert some influence over the budget proposal to serve the interests of their own municipalities. The seniority variable is a count of the number of terms that the most senior legislator of a municipality has served in the National Assembly, and the budget committee chair and member dummy variables signal whether a legislator participates as a chair or a member of the budget committee in a given year. The National Assembly Progress Report also contains the relevant information about legislators and committees.

[12] When presidents have majority control of the legislature, the surplus number of seats held by their parties range from just two to sixty-nine. Hence, it could be that presidents with a weak majority target more subsidies to swing municipalities relative to presidents with a strong majority, but more to core municipalities than those with no majority, in which case majority status could be coded as a trichotomous variable. The estimates obtained using a trichotomous variable corroborate those from the dichotomous variable; the patterns of resource allocations of presidents with weak majority status lie in between those with strong and no majority status, and thus I present results using the dichotomous variable for parsimony.

In addition, municipalities with greater fiscal capacity can be expected to receive less subsidies as they will be less reliant on such transfers to maintain operations, and so I calculate the fiscal independence of municipalities by dividing their local tax and non-tax revenue by total revenue using the General Accounts summary in the Local Finance Yearbook. Lastly, municipalities with higher percentages of young and elderly populations may require more funding to cover their social welfare expenditures, and thus these variables are included to account for such needs. The data are available from the National Statistical Office.

Table 2.1 Summary Statistics for the National Subsidy Analysis

Variable	N	Mean	SD	Min	Max
National Subsidy (Million Won)	7067	80200.53	87622.43	0	830066
National Subsidy Per Capita (Million Won)	7066	0.743	0.973	0	14.199
Population	7066	203119	193186.6	9191	1202628
President's Party Candidate's Vote Share	7067	0.383	0.186	0	0.933
President's Party Candidate's Vote Margin	7067	-0.035	0.307	-0.853	0.872
CSO Status	7067	0.909	0.814	0	2
Majority Status	7067	0.567	0.495	0	1
Pre-Election Year	7067	0.231	0.421	0	1
Seniority	7067	2.251	1.322	1	9
Budget Committee Chair	7067	0.005	0.072	0	1
Budget Committee Member	7067	0.232	0.422	0	1
Fiscal Independence	7067	0.316	0.184	0.035	0.993
Percentage of Young Population	7066	0.178	0.052	0.053	0.335
Percentage of Old Population	7066	0.123	0.073	0.020	0.389

Model

The model that I estimate is as follows:

$$\ln\left(subsidy_{i,t}\right) = \gamma_0 + \rho \ln\left(subsidy_{i,t-1}\right) + \beta' P_{i,t} + \delta' Z_{i,t} + \tau' \lambda_t + \alpha_i + \epsilon_{i,t}$$

Subscripts *i* and *t* refer to municipality and year respectively. A lagged dependent variable (LDV) is incorporated into the model since subsidies received by municipalities are likely to be impacted by their past characteristics, and failure to model such a temporal process could induce omitted

variable bias and result in standard errors that are too optimistic. Municipality fixed effects (α_i) are also included to account for time-invariant characteristics of municipalities.[13]

$P_{i,t}$ is a vector of political variables that contains the majority status of presidents in year *t*, the support status of municipality *i* in year *t*, and their interaction. The swing category of the *CSO* variable is excluded to serve as the reference category. In a second model, I also interact the dummy variable that indicates a pre-election year with majority and support status to assess how the electoral cycle might also influence the distribution of the national subsidy.

$Z_{i,t}$ is a vector of variables that measure the seniority and budget committee membership of legislators, fiscal independence, and percentages of young and old people in the population. The latter three variables are included in the model in their logged forms given their skew.

λ_t is a vector of variables that accounts for time period influences over the budget of the national subsidy. Although including time fixed effects would be preferable, they would likely absorb much of the variation in the slow-moving independent variables of interest.[14] Fortunately, a time trend control is appropriate for this case since the budget for the national subsidy has increased at an average annual rate of around 13 percent in accordance with the expansion of the government's fiscal capacity.[15] As such, I include a time trend variable and its squared term in my model to mitigate the possibility of estimating spurious relationships.

[13] Since the budget for year *t* is decided in *t-1*, I match the majority status, support status, and legislator data from year *t-1* with the subsidy data at year *t*. Korea underwent democratization in 1988, and thus 1989 is the first year in which the government budget was decided by democratically elected officials.

[14] The key independent variables can only change in the aftermath of a presidential or legislative election, and in several cases remain constant even after an election when there is no change in the president's party or the same party retains majority control.

[15] Regressing total subsidy allocations on a time trend variable and its squared term results in an R-squared value of 0.9933.

Estimation Method

Given the panel structure of the data, a pooled OLS estimator will be inefficient as the assumption of spherical errors is likely to be violated (Beck and Katz 1995), and failing to address concerns of unit heterogeneity could lead to biased and inconsistent estimates. Temporal dependence can be modeled through the inclusion of the LDV to mitigate serial correlation in the error terms, and a fixed effects estimator can control for unit heterogeneity. However, Nickell (1981) shows that estimating an LDV model with a fixed effects estimator can bias estimates of the LDV, and Judson and Owen (1999) find that this can also bias other coefficient estimates of interest by up to 20 percent even when time dimensions are as large as 30. Furthermore, the fixed effects estimator is also likely to be inefficient since many of the variables in the data set, including the main independent variables of interest, change slowly over time (Plümper and Troeger 2007). Therefore, I employ the Arellano-Bond system-GMM estimator to minimize bias, maximize efficiency, produce more robust estimates, and generate more accurate statistical inferences (Wawro 2002).[16] Bond (2002) and Roodman (2009) point out that OLS and fixed effects estimates of the LDV are likely to be biased upwards and downwards respectively, and can serve as credible bounds for theoretically superior estimates. All estimates of the LDV using the system-GMM estimator fall within this range.

[16] The LDV is treated as endogenous, and support status as predetermined but not strictly exogenous. The instruments lag limit is set at six. The results are robust to reducing the number of lags, though the instruments sometimes fail the Hansen test of exogeneity when fewer lags are used, which is likely due to the slow changing nature of the variables. I use one-step estimation with robust standard errors, and using two-step estimation with Windmeijer correction for standard errors produces almost identical results.

2.4 Empirical Analysis

Results

The estimated results are presented in Table 2.2 below.[17]

Table 2.2 Effects of Support Status and Majority Status on the National Subsidy

Model	(1)	(2)
DV	*Log Subsidy per Capita (Million Won)*	
DV (t-1)	0.6461***	0.6465***
	(0.0181)	(0.0182)
Opp	-0.0221	-0.0361*
	(0.0189)	(0.0208)
× *Majority*	-0.0662***	-0.0467**
	(0.0199)	(0.0209)
× *Pre-Leg*		0.0545
		(0.0407)
× *Majority* × *Pre-Leg*		-0.0938**
		(0.0453)
Core	-0.0814***	-0.0705***
	(0.0218)	(0.0234)
× *Majority*	0.1186***	0.1150***
	(0.0252)	(0.0267)
× *Pre-Leg*		-0.0580
		(0.0424)
× *Majority* × *Pre-Leg*		0.0228
		(0.0476)
Majority	0.0116	0.0070
	(0.0162)	(0.0174)
Pre-Leg		-0.0480
		(0.0390)
Majority × *Pre-Leg*		0.0250
		(0.0413)
Observations	6720	6720
Arellano-Bond Test for AR(2)	0.206	0.248
Hansen Test	0.881	0.662

Note: standard errors shown are shown in the parentheses. Estimates for control and time trend variables are not shown. The full results can be found in Table A.1 in the appendix. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

[17] The coefficient estimates associated with the other variables align with expectations. Senior legislators and chairs or members of the budget committee appear to have little ability to attract more subsidies to their municipalities. Greater fiscal capacity is associated with lower levels of predicted subsidies, while municipalities with a larger young and old population are estimated to receive more subsidies.

To facilitate interpretation, I plot the predicted differences in subsidy allocations between municipalities of differing support status with their corresponding 95 percent confidence intervals, holding other variables at their means.

Figure 2.4 Predicted Marginal Difference in Log Subsidy per Capita
conditional on Support and Majority Status

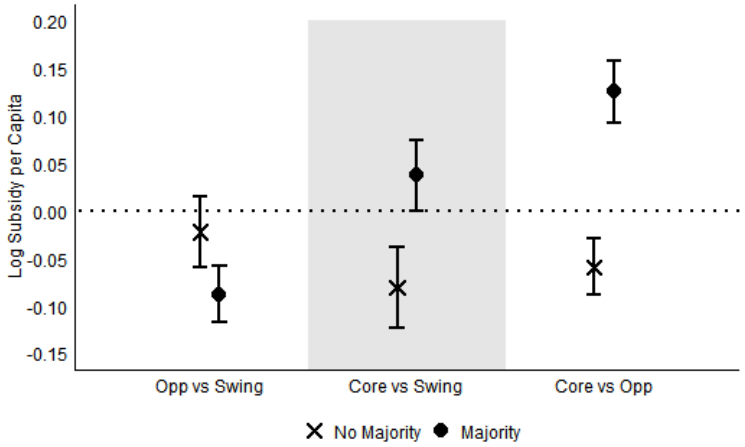


Figure 2.4 plots the estimated results from Model 1, which examines the impact of majority status on core-swing targeting, and reveals that presidents with and without a legislative majority do implement distinct patterns of subsidy allocations. Under majority-holding presidents, predicted subsidies increase monotonically with support status as core municipalities are estimated to be favored over swing municipalities (p=0.050, difference≈$2.4 million),[18] and swing municipalities over opposition municipalities (p=0.000, difference≈$5.4 million). Conversely, when presidents are majority-seeking, swing municipalities are estimated to be more advantaged compared to core municipalities (p=0.000, difference≈$4.9 million). Interestingly, the predicted difference between swing and opposition municipalities is not as large as one might expect (p-=0.242, difference≈$1.4 million), as opposition municipalities are even predicted to receive more

[18] Since the dependent variable is log subsidy per capita, which makes it less straightforward to gauge the substantive implications of the marginal differences, I also calculate the difference in the predicted level of subsidy between municipalities of differing support status, also holding other variables at their means. This shows the extent to which the national subsidy received by the "average" municipality is predicted to change if it were assigned to another support status category.

subsidies than core municipalities (p=0.000, difference≈$3.5 million). Nevertheless, the electoral context provides an explanation to this puzzle as around 55 percent of municipalities are categorized as opposition when presidents lack majority status. That is, majority-seeking presidents could not capture a legislative majority without swaying some municipalities that had traditionally voted against their party, and prioritized their objective to the extent of targeting these municipalities over core municipalities with subsidies.

Figure 2.5 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Off-Election Years

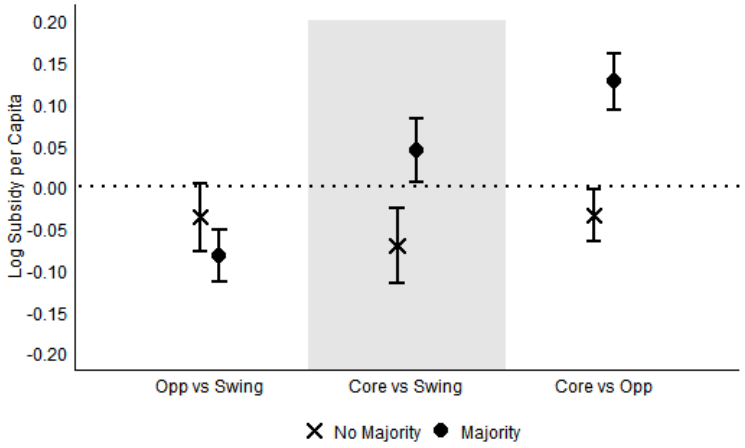
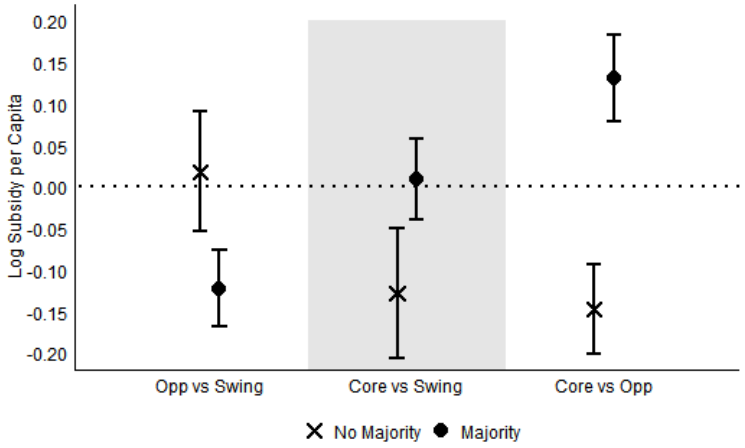


Figure 2.6 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Pre-Election Years



Figures 2.5 and 2.6 plots the estimated results from Model 2, which adds the pre-election year dummy variable that is interacted with majority and support status to identify how the targeting of municipalities differs by majority status in (1) off-election years, and (2) pre-election years. During off-election years, presidents with majority status are predicted to commit more subsidies to core municipalities than swing (p=0.023, difference≈$2.9 million) and opposition (p=0.000, difference≈$8 million) municipalities, while those without majority status are instead estimated to bias more subsidies toward swing municipalities over both core (p=0.003, difference≈$4.3 million) and opposition (p=0.083, difference≈$2.2 million) municipalities. These respective patterns of subsidy allocations shift in favor of riskier municipalities during pre-election years. Under majority-holding presidents, the difference between core and swing municipalities becomes negligible (p=0.710, difference≈$0.6 million). On the other hand, under majority-seeking presidents, the swing bias over core municipalities increases in magnitude (p=0.001, difference≈$7.3 million), while the swing bias over opposition municipalities becomes insignificant (p=0.6183, difference≈$1.2 million).

Robustness Checks

I conduct multiple robustness checks, and the full results along with the corresponding plots are presented in Appendix A. I first re-code the *CSO* variable using cutoff thresholds of 0.15 and 0.85, and 0.35 and 0.65, i.e., varying the original thresholds of 0.25 and 0.75 by ±10 percent.[19] Next, I re-construct the *CSO* variable based on district level electoral outcomes instead of municipal level electoral outcomes. I also use electoral outcomes from just the past four elections to calculate the

[19] Some could argue that core (opposition) municipalities should be those in which the president's party has won *all* (*none*) of the past elections, i.e., that the cutoff should be at 0 and 1. The results of the models using the *CSO* variable with a 0 and 1 threshold produce almost identical statistical and substantive interpretations compared to those obtained using the 0.15 and 0.85 threshold. Hence, I omit these results from my analysis to avoid repetition.

CSO variable.[20] While a few of the predicted pairwise differences exhibit increases or decreases in magnitude and statistical significance in accordance with shifting thresholds and categorizations of support status, the hypothesized patterns of subsidy allocations that are observed in the main results are largely replicated.

For the last set of robustness checks, I replace the *CSO* variable using vote shares and vote margins from the most recent election, and also include their respective squared terms to identify the level of electoral support that produces the maximum, or "peak," predicted level of subsidy. To summarize, the values of vote shares and margins associated with these peaks are greater under majority-holding presidents compared to those under majority-seeking presidents, and these respective values decrease in pre-election years. Such patterns align with the hypotheses and the main results. Nevertheless, the conceptual and empirical mismatch produced by measuring support status using vote shares and margins from just the most recent election precludes any definitive conclusions about core-swing favoritism, as recent voting behavior may not always be indicative of past electoral behavior or the underlying level of affinity that municipalities have for the president's party.[21]

2.5 Conclusion

In this chapter, I argue that Korean presidents seek to obtain a legislative majority, and find evidence that presidents take advantage of their strong budgetary powers to achieve this political

[20] This is expected to produce a noisier measure since it essentially discards relevant long-term information about past voting behavior.

[21] For example, Figure A.13 in the appendix shows that the predicted level of subsidy is maximized when the vote share is 0.41 under majority-holding presidents (who are expected to favor core municipalities) and 0.28 under majority-seeking presidents (who are expected to favor swing municipalities). President Roh Moo Hyun's party had never won a seat in Chuncheon, but received a vote share of 0.41 during the 2004 National Assembly election and lost again anyway. On the other hand, President Kim Young Sam's party won all three legislative elections in Yangju after the inauguration of democracy, including the 1996 election in which Kim's co-partisan won with a vote share of just 0.29 due to the entrance of a popular independent candidate.

objective by implementing complex and varied targeting strategies. Presidents direct a higher share of subsidies to core and swing municipalities when they are majority-holders, but instead assign more subsidies to swing municipalities, and opposition municipalities to a certain extent, when they are majority-seekers. These patterns hold when the electoral cycle is also taken into account, as the evidence suggests that presidents determine the overall set of municipalities that they seek to win based on their majority status, but concentrate a higher share of subsidies to the comparably safer subset of municipalities during off-election years before shifting their attention to the riskier subset of municipalities in pre-election years. A framework that narrowly focuses on voter or district level characteristics cannot explain the meaningful variations in patterns of subsidy allocations observed in Korea.

Accounting for broader political features such as the competition for majority control of the legislature and the electoral cycle can help bridge the divide between existing empirical tests of the core-swing district hypotheses. It might not be a coincidence that evidence in favor of the core targeting hypothesis is usually associated with cases of majority control (e.g., Ansolabehere and Snyder 2006; Balla et al. 2002; Case 2001; Costa-I-Font, Rodriguez-Oreggia, and Lunapla 2003; Engstrom and Vanberg 2010), or covers a longer time frame given that there are more off-election years than pre-election years (e.g., Ansolabehere and Snyder 2006; Larcinese, Rizzo, and Testa 2006). Similarly, works that side with the swing targeting hypothesis tend to be based on cases in which parties did not have majority status and/or resource allocations took place close to an election (e.g., Bickers and Stein 1996; Dahlberg and Johansson 2002; Denemark 2000; Herron and Theodos 2004).

The findings of this chapter also contribute to the understanding of distributive outcomes in other democracies in which a unitary actor, such as the president, can exert significant influence

over the distribution of government resources. Much of the distributive politics literature is situated in regions with developing democracies such as Latin America and Africa, which are dominated by presidential systems, and future works could examine how differences in institutional configurations free or constrain presidents from manipulating the government budget in pursuit of their own political objectives. A lack of accountability and transparency regarding national budgetary decisions could result in a disproportionate and inefficient distribution of resources that engenders economic inequality, political conflict, and social discontent.

Lastly, this study has implications for the debate about regionalism in Korea. Korean politics revolves around regional rivalries inherited from its authoritarian past. The emergence of regionalism in Korea is commonly attributed to the unequal allocation of government resources and offices during the authoritarian rules of Park Chung Hee, Chun Doo Hwan, and Roh Tae Woo, who all favored their hometown Gyeongsang provinces at the expense of the Jeolla provinces, which were purposefully deprived from such benefits since they backed Kim Dae Jung, who was the most powerful critic of the authoritarian regime (Hong and Park 2014; Kim 2003). While Korea is often brought up as having one of the most successful transitions to democracy among the third-wave democracies, regionalism and distributive favoritism have remained intricately intertwined in Korea as the lack of horizontal checks on the presidency has enabled presidents to engineer the government budget in ways that reinforce existing regional linkages (Horiuchi and Lee 2008). This has undermined the development of trust and cooperation between parties and voters, and democratic consolidation in general (Im 2004). As such, the strong budgetary powers of presidents may be subverting the types of political interactions and policies that are crucial for the proper functioning of democratic institutions.

The findings of this chapter suggest that increased electoral competition could lead to the weakening of regional cleavages in Korea. If the number of core electoral strongholds decreases in response to stronger competition from rival parties, then presidents may be forced to allocate more resources to swing municipalities in their efforts to secure a legislative majority. This could then generate more fluid electoral coalitions that cross regional divides, and curtail both incentives to engage in regional favoritism and distributive outcomes that are inimical to democracy. Nevertheless, electoral behavior typically changes incrementally, and the deep-rooted synergy between regionalism and distributive politics may further impede such change if the budgetary powers of presidents remain uncurbed. Although balancing the powers of the presidency with those of other political actors may not be a straightforward task, it is no secret that the design of the national subsidy makes it particularly susceptible to political manipulation. At the very least, establishing objective criteria for the national subsidy should have immediate repercussions by stifling the arbitrariness underlying its distribution.

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Chapter 3

Party System Institutionalization in Democracies: Concept and Measurement

3.1 Introduction

Since Mainwaring and Scully's (1995) seminal volume on party systems in Latin America, the concept of party system institutionalization—which concerns the stability and predictability of interparty competition—has played a prominent role in comparative studies of democracy, and the scholarship repeatedly underscores the dangers that under-institutionalized party systems pose for the performance and resilience of democratic institutions. Unstable and unpredictable party systems are thought to reduce the information with which citizens can effectively reward and punish parties (Jensenius and Suryanarayan 2022; Mainwaring and Torcal 2006; Schleiter and Voznaya 2018), foster self-serving party behaviors that impede interparty coordination and horizontal accountability (Bernhard et al. 2020; Hicken 2018), and weaken the capacity of governments to implement consistent policies that enhance public goods provision and reduce inequality (Mauro 2022; Robbins 2010; Tommasi 2006). Such deficiencies undermine the legitimacy of democratic institutions, and create openings that anti-democratic political outsiders can exploit to seize power and trigger the breakdown of democracy (Casal Bértoa and Enyedi 2021; Mainwaring 2018; Mainwaring and Scully 1995).

This belief that democracy is unworkable, and perhaps even unsustainable, without stable and predictable party systems has become widely entrenched, but much of the supporting evidence remains surprisingly disjoint and inconclusive. Researchers often employ divergent conceptual

understandings and indicators, and typically focus on a few countries or a specific region[1] due to the difficulties associated with collecting and coding comparative party system data.[2] Some studies bypass such issues by mono-operationalizing party system institutionalization with Pedersen's (1979) index of electoral volatility or the age of the main parties (Cruz, Keefer, and Scartascini 2018), but these measures are also incomplete and imprecise, which can generate misleading inferences despite their relatively extensive coverage (Casal Bértoa 2017; Munck and Verkuilen 2002). Moreover, the utility of existing measures is also weakened by their failure to address the latent nature of party system institutionalization, the subsequent measurement uncertainty, and occurrences of missing data. These unresolved challenges have undermined the development of systematic and unified understandings about how party system institutionalization matters for democracies across regions, contexts, and over time (Casal Bértoa 2018).

This chapter seeks to address these conceptual and empirical gaps. Building on recent conceptual refinements, I recast party system institutionalization as a strictly institutional process that concerns the rules of the game that govern interparty interactions. I then employ a Bayesian latent variable measurement model to estimate Party System Institutionalization Scores (*PSI Scores*) across 96 post-WWII democracies. My measure has unmatched coverage, aligns with the latent nature of the concept, quantifies measurement uncertainty, and accounts for non-random missing data. Despite such advantages, the value of a measure depends more critically on its validity. As such, I test the face, convergent, and construct validity of my measure while comparing

[1] For example, in Africa (e.g., Kuenzi and Lambright 2001; Lindberg 2007; Riedl 2014; Weghorst and Bernhard 2014), Asia (e.g., Croissant and Völkel 2012; Hicken and Kuhonta 2015; Stockton 2001), Europe (e.g., Casal Bértoa and Enyedi 2021; Chiaramonte and Emanuele 2019), and Latin America (e.g., Coppedge 1998; Mainwaring 2018; Rodriguez and Rosenblatt 2020).

[2] To my knowledge, there are just four studies on the consequences of party system institutionalization that use a comprehensive sample of democracies: Mauro (2022), Robbins (2010), Schiller (2018), and Schleiter and Voznaya (2018), who examine the implications of party system institutionalization for redistribution, public goods provision, tax systems, and corruption, respectively.

its performance to existing measures. The results strongly favor the *PSI Scores*, and indicate that the measure should be a useful tool that can advance more systematic research on the causes and consequences of party system institutionalization in democracies around the world.

3.2 Party System Institutionalization: Concept and Measurement in Extant Literature

Despite decades of research on party system institutionalization, there remains substantial disagreement over the concept and its measurement, which can be attributed to mixed approaches to the study of party systems, on one hand, and a lack of clarity about the process of institutionalization, on the other.

As Casal Bértoa (2017) points out, "we can only speak of institutionalisation when we are able to define what it is that has been institutionalised." Conceptualizations often allude to the idea that the study of party systems—and by extension the study of party system institutionalization—goes beyond the characteristics of individual parties, and instead concerns the "systemic constraints" that inform and structure interparty interactions (Bardi and Mair 2008; Sartori 1976).[3] However, there has also been a tendency to treat the party system as something that can be understood simply in terms of the individual parties (Bardi and Mair 2008; Stockton 2001), which has engendered stretched definitions of party system institutionalization that incorporate party-level characteristics[4] and blur the distinction between party institutionalization and party system institutionalization, even though these two processes are distinct and not necessarily compatible

[3] For instance, Casal Bértoa and Eyedi (2021) focus the concept on the ways in which parties "compete, colligate and collaborate," Lindberg (2007) and Riedl (2014) link the concept to the structuring of strategic interactions between parties, and Mainwaring (2018) succinctly describes an institutionalized party system as one in which "a stable set of parties interacts regularly in stable ways."

[4] Conceptualizations often replicate or reformulate Huntington's (1968) highly influential framework of institutionalization, even though Huntington himself was more concerned with explaining the institutionalization of individual party organizations rather than the interaction between parties (Hicken and Kuhonta 2015; Randall Svåsand 2002).

(Randall and Svåsand 2002). This has produced inflated concepts that have yielded inconclusive or contradictory assessments about the relationship between party system institutionalization and democracy (Casal Bértoa 2017), and limited explorations of how party and party system institutionalization might be intertwined. [5]

Another source of the conceptual ambiguity is the vagueness surrounding the process of institutionalization. While there is an implicit consensus in the literature that institutionalization refers to a process by which an entity becomes stable and predictable, relatively little attention has been given to specifying what this process actually entails.[6] As such, the concept has been liberally applied and come to subsume a multitude of behavioral, organizational, and institutional processes that could be incompatible, tautological, or conflations of causes and effects (Randall and Svåsand 2002; Levitsky 1998; Luna 2014), which has further weakened the utility of party system institutionalization as a concept.

Given such divergent conceptual foundations, it is unsurprising that there has been little overlap in the usage of party system institutionalization in empirical analyses.[7] Some studies compare party systems on an indicator-by-indicator basis, but this approach is less viable for larger samples and constrains the practicality of including party system institutionalization as a dependent or independent variable in empirical models. Other studies average indicators to

[5] Recognizing such tensions, Mainwaring (2018) reconfigures Mainwaring and Scully's (1995) framework by focusing the concept strictly around the stability and predictability of patterns of interparty competition, and excluding several organizational dimensions—party rootedness in society, legitimacy of parties, and stable party organizations—that were included in the original framework, noting that they are "underpinnings that facilitate party system institutionalization but are not defining features of it."

[6] Levitsky (1998) is one notable exception.

[7] The concept has been measured using a variety indicators such as the age of the main parties, strength of party organizations, confidence in parties, partisan identification, effective number of parties, entry and exit of parties, barriers to the formation of new parties, legitimacy of elections, electoral volatility, composition of the legislature, congruence between presidential and legislative elections, cabinet composition, ideological distance, and voter turnout (e.g., Casal Bértoa and Enyedi 2021; Croissant and Völkel 2012; Kuenzi and Lambright 2001; Lindberg 2007; Mainwaring and Scully 1995; Rodriguez and Rosenblatt 2020)

overcome such limitations,[8] but this practice can mask important discrepancies across party systems (Luna 2014), and it is unclear how indicators should be weighted. On a more general level, such studies tend to select different indicators given disparate conceptual understandings, and their scopes rarely extend beyond a particular region and/or a few points in time due to data limitations. These inconsistencies have hindered the ability to compare results, exploit variation in related variables of interest, and generalize conclusions, which has undermined the formulation of systematic and unified understandings about how party system institutionalization matters for democracies across regions, contexts, and over time (Casal Bértoa 2018).

A popular strategy to sidestep some of these issues has been to mono-operationalize party system institutionalization with electoral volatility or the age of the main parties, particularly since these measures offer relatively extensive coverage; the former is available for at least 67 post-WWII democracies (Mainwaring, Gervasoni, and Anabella España-Najera 2017), while the latter covers most countries from 1975 onwards (Cruz, Keefer, and Scartascini 2018).[9] However, using a single indicator to measure a multi-faceted concept such as party system institutionalization can introduce biases in cross-space/cross-time analyses (Munck and Verkuilen 2002), which undercuts the main benefit these measures. Moreover, electoral volatility is a noisy measure that is sensitive

[8] Rodriguez and Rosenblatt (2020) present an original reconfiguration of party system institutionalization into a structure of necessary and sufficient conditions, and preserve information about this conceptual structure by using a system of interactions and geometric means to aggregate indicators. The authors rightly point out that averaging indicators may be straightforward but could produce flawed estimates, and that any aggregation method should be aligned with the nature of the concept. One critique of the authors' conceptualization might be the inclusion of incorporation —the system's ability to adapt to novel demands made by society—in their concept, given that adaptability can be at odds with stability (Panebianco 1988).

[9] There are two other recent and notable measures. The first is Casal Bértoa and Enyedi's (2021) Party System Closure index, which is a data-intensive measure that spans European democracies from 1848-2019, and explicitly captures the stability and predictability of interparty competition in the governmental arena. The authors demonstrate that their measure provides additional empirical insight that are not captured by electoral volatility, though the reverse could also hold in some cases. The second measure is the Party Institutionalization index (Bizzaro, Hicken, and Self 2017), which is constructed from various indicators in the V-Dem dataset (Coppedge et al. 2020), and is available for most countries from 1900 onwards. However, the index specifically reflects characteristics of individual parties, and thus is a more appropriate measure of party institutionalization.

to coding decisions (Casal Bértoa, Deegan-Krause, and Haughton 2017), and discards relevant information about stability, as I discuss later. The age of the main parties, on the other hand, is more closely aligned with *party* institutionalization since the measure aggregates characteristics (i.e., the age) of individual parties, and contains little direct information about their interactions.

Lastly, party system institutionalization is a latent concept since stability and predictability are a function of perceptions and expectations, which cannot be directly observed or measured (Casal Bértoa and Enyedi 2021; Mainwaring 2018). This means that observable indicators likely measure the concept with some noise. In addition, collecting and coding comparative party system data is a highly time-intensive endeavor, and even basic information can vary across sources or be difficult to obtain. This naturally exacerbates measurement uncertainty and can lead to non-random missing data, but existing measures rarely address these issues, which could produce misleading inferences.

3.3 Conceptualizing Party System Institutionalization

To establish a more precise concept, I begin by aligning with recent conceptual developments (e.g., Casal Bértoa and Enyedi 2021; Mainwaring 2018) that (1) converge on the notion that party system institutionalization strictly concerns the interactions between parties (i.e., what is being institutionalized), and (2) identify stability and predictability as the principal outcome of institutionalization (i.e., how institutionalization should be assessed).

I further add to these refinements by being more explicit about what the process of institutionalization entails (i.e., how stability and predictability is achieved). To this end, I build on existing discussions that recognize the role that institutions play in structuring interparty interactions to recast the concept as a strictly institutional process that concerns the establishment

and entrenchment of the rules of the game.[10] This approach mitigates the tensions that arise when non-institutional processes are also incorporated into the concept,[11] and produces a tighter concept that nonetheless generates implications that remain consistent with current understandings of party system institutionalization.[12]

Interparty interactions, such as those concerning cabinet formation, executive-legislature relations, the lawmaking process, and electoral competition are regulated by both formal institutions (e.g., constitutions and electoral systems) and informal institutions (e.g., the two-term presidency or filibuster in the United States (Azari and Smith 2012), the *cuoteo*, which coordinated the distribution of ministerial portfolios in Chile (Siavelis 2006), and arrangements to exclude extreme antisystem political parties from governing coalitions in post-war Italy (Mershon 1994)). As parties establish or repeatedly interact under such institutions, they gain information about each other's preferences and develop shared understandings of probable outcomes, which curtails uncertainty and the transaction costs associated with future interactions (Lupu and Riedl 2013). In turn, parties gain incentives to adapt to and safeguard the status quo (Levitsky and Murillo 2009), which promotes stability and predictability by lengthening time-horizons, cultivating standards of behavior that correspond with existing expectations, and circumscribing the set of relevant parties,

[10] Such discussions reference the association between the rules of the game and the stability and predictability of party systems, but typically treat the former as being subsumed by the latter. For instance, Mainwaring (2018) casts the entrenchment of the rules of the game as a particular manifestation of institutionalized party systems. I instead treat the former as being the defining feature of the latter.

[11] For example, value-infusion is frequently included in conceptualizations, but this process is distinct from the routinization of the rules of the game, and the two processes do not necessarily move together (Levitsky 1998). Organizational dimensions have also been prominent in discussions of party system institutionalization but, as discussed, the institutionalization of individual parties is not equivalent to the institutionalization of interparty interactions.

[12] It also makes it straightforward to distinguish party and party system institutionalization by focusing the former on the rules that govern interactions within a party organization, such as those that control party affiliation, create a division of labor by assigning roles and responsibilities, and guide decision-making procedures.

strategies, and outcomes (Casal Bértoa and Enyedi 2021; Mainwaring 2018; Palanza, Scartascini, and Tommasi 2016; Riedl 2014).

Institutionalized party systems reduce uncertainty by generating information about the parties and their probable behaviors, which makes political outcomes more predictable, e.g., how parties will interact to pass policies and form governments, the type and frequency of alternations of power, and the strategies that parties might adopt in response to changes in the environment. Such information promotes the functioning of democratic institutions by enabling actors to better identify party behaviors that comply with or deviate from expectations, strengthening the credibility of commitments made by parties, and making it possible for governing parties to implement consistent policies (Hicken 2018; Mainwaring 2018; Mainwaring and Torcal 2006; Tommasi 2006). Moreover, institutionalized party systems enhance the capacity of parties to coordinate against anti-democratic political outsiders who threaten the democratic status quo, and thus reinforce the resilience of democracy (Bernhard et al. 2020).

Nonetheless, party system institutionalization is not a deterministic process since it is a function of the behaviors and decisions that actors undertake over time (Palanza, Scartascini, and Tommasi 2016). Actors can choose to forego the creation of institutions to maintain their autonomy (Lupu and Riedl 2013), subvert institutions that they deem to be exploitable (Mahoney and Thelen 2009), enact institutions that conflict with one another (Helmke and Levitsky 2004), or frequently create or alter institutions (Levitsky and Murillo 2009). These actions in turn weaken constraints on party behaviors and propagate skepticism about whether the status quo will prevail. Coalitions are perhaps the pivotal interparty institutions, and the making and breaking of coalitions can reset the political landscape and bring about considerable uncertainty about future interparty interactions.

3.4 Measuring Party System Institutionalization

The concept of party system institutionalization as I have construed it concerns the establishment and entrenchment of the formal and informal rules of the game that govern the interaction between parties. Deriving direct indicators that trace the development of the rules of the game is largely impractical since democracies vary widely in their institutional setup, and requisite comparative data that cover most democracies are unlikely to be available in the foreseeable future. More problematically, party system institutionalization is a latent variable since it is a function of perceptions and expectations about the rules of the game, the parties, and their probable behaviors, which means that the concept cannot be directly observed or measured (Casal Bértoa and Enyedi 2021; Mainwaring 2018).

As such, I use a Bayesian latent variable measurement model,[13] which evaluates the common variance between manifest indicators—observable but imperfect reflections of the underlying latent variable—to derive estimates of party system institutionalization (Bollen 2002). This measurement strategy provides several benefits over the default method of aggregating indicators through averaging as it directly captures the latent structure of the concept, quantifies measurement uncertainty, and can also flexibly handle non-random missing data.

I identify five manifest indicators, or characteristics, that institutionalized party systems should exhibit: familiar parties that exhibit consistent patterns of competition and collaboration in the (1) electoral/legislative arenas (e.g., Mainwaring and Scully 1995) and (2) governmental arena (e.g., Casal Bértoa and Enyedi 2021); (3) limited opportunities for minor parties or political outsiders to win office (e.g., Mainwaring 2018); (4) distinctive parties (e.g., Greene and Sánchez-

[13] This approach has been used to estimate other important latent concepts such as accountability (Lührmann, Marquardt, and Mechkova 2020), democracy (Pemstein, Meserve, and Melton 2010), governance (Arel-Bundock and Mebane 2011), human rights abuse (Fariss 2014), and state capacity (Hanson and Sigman 2021).

Talanquer 2018; Jones 2010); and (5) diminished occurrences of party switching (e.g., Desposato 2006). These indicators each cover distinct yet interrelated characteristics of party system institutionalization and—while not as numerous as the manifest indicators used in some latent variable measurement models—produce estimates of the concept that perform quite well in the tests of validity presented later in this chapter. The indicators are also selected based on data availability and generalizability given that one of the primary goals of this chapter is to develop a robust measure with comprehensive coverage.

Nonetheless, other pertinent indicators could be added to improve the precision of the measure in the future, and thus I provide some general guidelines. Indicators should capture characteristics of interparty competition, and not simply be aggregates of party-level characteristics. Additional manifest indicators must also be *effect* indicators, or observable characteristics of institutionalized party systems, rather than *causal* indicators, which affect the latent concept. Since I use effect indicators in my measurement model, adding causal indicators could generate misleading estimates (Bollen 2002). Furthermore, while the measurement model can be modified to account for non-random missing data, data availability should still be a concern since missingness can exacerbate measurement uncertainty. Indicators closely linked to dependent variables of interest such as policymaking outcomes should also be avoided, as their inclusion would preclude analyses of the relationship between party system institutionalization and those variables.

Since stability and predictability cannot be assessed given a short time span, observations for democracies[14] begin after the second democratic election or five years have passed since the inauguration of democracy, depending on whichever occurs later. For similar reasons, democratic

[14] Identified as countries that receive a score of 6 or greater in the Polity V dataset (Marshall and Gurr 2020).

regimes that survive for less than ten years are excluded. Summary statistics of the manifest indicators are provided in Table B.1 in the appendix.

Manifest Indicators

The Aggregate Legislative Volatility (*ALV*) and Aggregate Government Volatility (*AGV*) indicators reflect the stability in the partisan composition of legislatures and cabinets over time. Institutionalized party systems are expected to exhibit a stable set of core parties that compete and collaborate in patterned ways, and thus have low levels of volatility. Existing measures of party system institutionalization typically focus on either the electoral/legislative arenas or the governmental arena—in part due to data limitations—but perceptions and expectations of stability and predictability are likely formed based on interparty interactions across these arenas. As such, I gather extensive data on the partisan composition of 911 lower-house legislatures and 1269 cabinets in 96 post-WWII democracies to construct volatility measures for both the electoral/legislative and governmental arenas. The sources for the data are listed in Table B.2 in the appendix.

The most prevalent measure of volatility is Pedersen's (1979) index of electoral volatility:

$$EV = \frac{\sum_{i=1}^{N} \left| p_{i,t} - p_{i,t-1} \right|}{2}$$

where $p_{i,t}$ is the seat (or vote) share obtained by party *i* in election *t*. The index ranges from 0 to 1. Lower values indicate that similar parties win similar seat shares across elections, and thus a more stable and predictable party system.

Although it has never been discussed as such, Pedersen's index is in fact a specific application of the Bray-Curtis (1957) dissimilarity, which was first introduced in the ecology literature more than two decades prior to the publication of Pedersen's paper:

$$BC = \frac{\sum_{j=1}^{s} |y_{1,j} - y_{2,j}|}{\sum_{j=1}^{s} |y_{1,j} + y_{2,j}|}$$

$y_{1,j}$ and $y_{2,j}$ represent the share (or count) of species j sampled from ecological communities y_1 and y_2. Ecologists often apply dissimilarity measures, of which the Bray-Curtis is one of the most well-known,[15] to assess the resemblance of different communities by leveraging information about the number and diversity of the species in those communities. It is straightforward to see that Pedersen's index is simply the Bray-Curtis dissimilarity with communities replaced by party systems, species by parties, and similarity (across space) cast as stability (over time). However, unlike Pedersen's index, which only considers consecutive elections, the Bray-Curtis dissimilarity is typically calculated across all pairs of communities in the sample, and this set of dissimilarity scores contains meaningful information about the degree of similarity across *all* communities. That is, Pedersen's index essentially discards relevant information about long-term stability by focusing on two consecutive elections that are typically spaced only a few years apart.

Therefore, I calculate the Aggregate Legislative Volatility indicator following the application of the Bray-Curtis dissimilarity in ecology. At each election year *t* in country *i*, I calculate dissimilarity scores between year *t* and all democratic years prior to *t* using legislative seat shares.[16] To account for the decreasing importance of past years for determining stability in year *t*, I calculate a twenty-year linear weighted moving average of the dissimilarity scores.[17] Substantively, the indicator summarizes how similar the partisan composition of the legislature at

[15] According to Google Scholar, Pedersen's paper has around 1300 citations while Bray and Curtis' paper has around 12000 citations.

[16] Since party system institutionalization is related to the degree of information that parties have about one another, the criteria for tracing party change focuses on two characteristics that affect such information: the party label and the party organization. A party is coded as being the same party across two points in time if there is a continuation of the party label and/or the organizational composition. This approach lies between the strict and relaxed linkage described by Casal Bértoa, Deegan-Krause, and Haughton (2017).

[17] I use a *t-1* year linear weighted moving average if the democracy is less than twenty years old.

time *t* is to those from the past twenty years, with recent legislatures and those that lasted for a longer period receiving a greater weight. The indicator ranges from 0 to 1, with lower scores representing more stable partisan compositions over time.

To capture the stability in patterns of interparty competition in the governmental arena, I calculate the Aggregate Government Volatility indicator following a similar procedure as its legislative equivalent,[18] weighting parties in government by their legislative seat shares.[19]

Since institutionalized party systems should have a main set of parties that compete and collaborate in patterned ways, it should be more challenging for marginal parties and political outsiders to enter the party system. The seat shares won by minor parties that secure less than two percent of the seats and independents are excluded in calculations of the volatility indicators given data limitations, and are instead summed to produce the Minor Parties and Independents (*MPI*) manifest indicator.

Ephemeral or transitory parties are less likely to appeal to voters or be regarded as viable coalitional partners when the remainder of the party system becomes more stable and predictable. As such, party system institutionalization generates stronger incentives for parties to minimize such competitive disadvantages by carving out clear positions within the party system. The Party Distinctiveness (*PDST*) indicator is drawn from the V-Dem dataset (Coppedge et al. 2020), which uses a Bayesian Item Response Theory measurement model to aggregate expert assessments of whether parties "have publicly available platforms that are publicized and relatively distinct from

[18] One difference is that the Aggregate Government Volatility indicator is updated whenever there is a new cabinet (Budge and Keman 1990), i.e., there is a (1) change in the partisan composition of the government, (2) a change in the president or prime minister, or (3) a general election occurs.

[19] Although using portfolio shares would be preferred, such data are not consistently available across countries and over time. Nonetheless, portfolio shares should generally be proportional to legislative seat shares (Gamson 1961). When exact seat share data are not available, which is usually the case for minor parties that hold one portfolio, the seat share is coded as 1%.

one another." [20] The indicator is rescaled to a unit interval so that its scale is equivalent to the other indicators.[21]

Lastly, parties are more likely to have distinct identities and longer-time horizons when the party system is more institutionalized, which induces higher costs for Party Switching (*PSW*). The indicator is also sourced from the V-Dem dataset, and represents expert assessments of the percentage of members of the national legislature who change or abandon their parties in between elections. [22]

Measurement Model

These five manifest indicators are each imperfect and incomplete reflections of party system institutionalization that incorporate varying degrees of measurement noise. Nonetheless, a Bayesian latent variable measurement model can exploit their common variance to formulate multi-faceted and more precise estimates of party system institutionalization. In the model, $x_{k,i,t}$, which refers to manifest indicator x_k for country *i* in year *t*, is specified to be a linear function of latent levels of party system institutionalization ($\xi_{i,t}$) and random noise i.e., $x_{k,i,t} = c_k + \lambda_k \xi_{i,t} + \epsilon_k$. Coefficients are assigned Normal(0,2) priors, and the error terms are specified to have mean zero independent normal priors with InverseGamma(1,1) as the prior for the variance. Since latent variable models require additional constraints for identification, I subtract all indicators except the

[20] This *v2psplats* variable has been used as an indicator of party institutionalization (Coppedge et al. 2020). However, since the *distinctiveness* of party platforms can only be assessed at the *system* level, I suggest that the variable more accurately reflects party system institutionalization.

[21] The prior for the variable in the V-Dem measurement model is a standard normal distribution, and sample values range from a minimum of -2.088 and 2.992. Thus, I apply min-max scaling setting the theoretical minimum and maximum to -3 and 3.

[22] Data for this *v2psswitch* variable is available up to 2015. Since party switching rarely exhibits drastic change within countries, I impute missing data for the few years leading up to 2018 using ARIMA forecasting (Hyndman and Khandakar 2008). Though it is possible to simply treat the missing data as unknown parameters to be estimated in the measurement model, this does not produce any meaningful differences in the estimates, while unintuitively causing some estimates to change when encountering missingness even when all other manifest variables remain constant.

PDST indicator from 1 so that higher values are associated with more institutionalized party systems,[23] constrain λ_k to be positive, and set the priors for the latent factors ($\xi_{i,t}$) as Normal(0,1) (Bollen 1989).

Around 14% of observations in the Aggregate Government Volatility indicator are missing due to the absence of consistent cabinet composition data for some democracies.[24] These observations could be excluded or their missingness ignored—as is usually the case when averaging indicators into an index—but this could bias estimates since missingness could be non-random, e.g., more likely when party systems are under-institutionalized. As such, I adopt the approach presented by Lee (2007) and utilized by Arel-Bundock and Mebane (2011), which leverages missingness to obtain more information about the latent factor. More specifically. m_{it} is specified to be missingness dummy variable, and the probability of missingness is linked to latent levels of party system institutionalization, i.e., $Pr(m_{it} = 1) = \Lambda(b_0 + b_1\xi_{i,t})$.[25]

I estimate the model using Stan in R. Each of the 4 independent chains discard the first 2000 iterations as burn-in, and the next 5000 iterations are treated as draws from the joint posterior density. Standard MCMC diagnostics indicate that there are no issues and that the chains have sufficiently converged. Summaries of the posterior distributions are presented in Table B.3 in the appendix.

[23] All indicators are on a unit interval.
[24] Observations for the *PSW* indicator are missing for Luxembourg and Malta since these countries are not covered in the V-Dem dataset. These missing values are treated as treated as unknown parameters that are estimated in the model using information provided by the other manifest indicators.
[25] Difference-of-means tests show that missingness is associated with lower values in the observed manifest indicators, i.e., less institutionalized party systems. The measurement model also confirms that missingness does seem to be strongly associated with latent levels of party system institutionalization.

3.5 Party System Institutionalization Scores

The measurement model uses 15988 data points to generate 3313 posterior distributions for the latent factors, which provide country-year estimates of party system institutionalization across 96 post-WWII democracies. In my discussion, I refer to the medians of these posterior distributions as *PSI Scores*, which serve as reasonable point estimates, and the full posterior distributions as *PSI Scores (D)*, which incorporate measurement uncertainty.[26]

The coverage of the *PSI Scores* far exceeds those of existing measures, and should permit comprehensive tests of party system institutionalization that encompass a global sample of democracies. Nonetheless, since the utility of a measure is determined principally by its validity, I examine the face, convergent, and construct validity of the *PSI Scores* (Adcock and Collier 2001). As a part of these tests, I also compare the *PSI Scores* with four alternative measures of party system institutionalization.[27] The first two are electoral volatility (*EV*) and the age of the main parties (*Party Age*). These measures should provide a useful baseline given their frequent deployment in cross-national studies of party system institutionalization. *EV* is calculated using the same coding rules/seat-share data as the *ALV* manifest indicator, and its scale is reversed so that higher values are associated with greater levels of party system institutionalization.[28] The *Party Age* variable calculates the average of the age of the largest governing party, second largest

[26] I employ the method of composition (Tanner 1993) when using the *PSI Scores (D)* to account for measurement uncertainty. I randomly draw 500 sets of values from the full posterior distributions of the latent estimates of party system institutionalization, and iteratively re-estimate the model using each set of values. Within each iteration, I simulate a vector of coefficient estimates from a multivariable normal density using the coefficients and variance-covariance matrices from the fitted model. This procedure simulates 500 draws from the marginal posterior densities of the model coefficients. The medians of the marginal posterior densities are treated as point-estimates, and the 5% and 95% percentiles as the bounds of the 90% credible interval.

[27] The *Party Age* measure is available for most countries from 1975, and the *Closure* measure is available for all European democracies from 1848 to 2019. To facilitate comparisons, I limit the observations to those that cover the 96 post-WWII democracies in my sample.

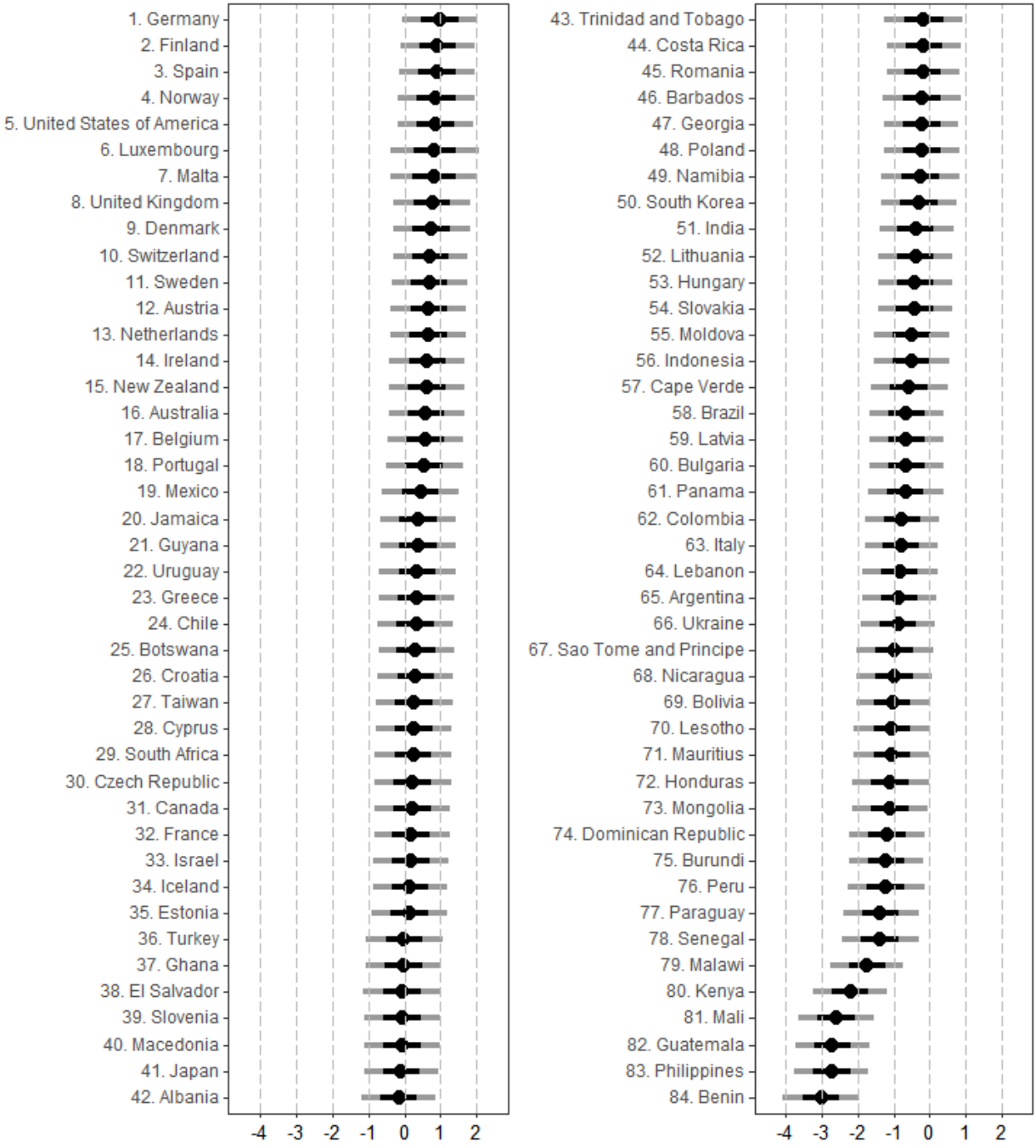
[28] Incidentally, my electoral volatility measure has the widest coverage of any of electoral volatility measure to date given my expansive partisan composition dataset.

governing party, and the largest opposition party, or the subset of these for which the party age is known. The data are sourced from the Database of Political Institutions (Cruz, Keefer, and Scartascini 2018), and is logged given its skew. The third measure is Casal Bértoa and Enyedi's (2021) Party System Closure index (*Closure*), which draws on an exceedingly rich dataset on cabinet compositions in European democracies to measure the stability and predictability of interparty competition in the governmental arena. Comparisons with the index should reveal how the more general *PSI Scores* perform relative to a detailed within-region measure. The fourth measure is the mean of the five manifest indicators (*MI Avg*) that I use in my measurement model, and is included in the analyses to assess whether there is any benefit to using the more complex Bayesian latent variable measurement model to aggregate information.

Face Validity: Party System Institutionalization across Space and Time

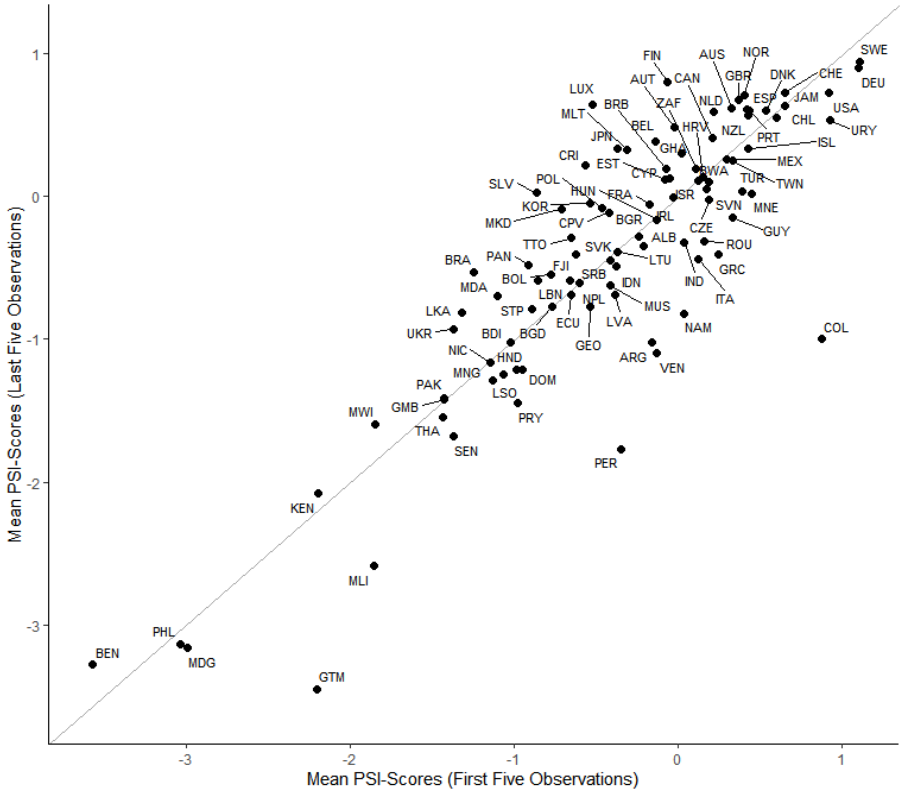
A measure with face validity should conform to existing conceptions about levels of party system institutionalization (Adcock and Collier 2001). In Figure 3.1, I plot the *PSI Scores* with the 66% (black) and 95% (light grey) credible intervals of the *PSI Scores (D)* across all democracies in 2010. The scores generally align with expectations. Western democracies dominate the upper spectrum, whereas countries that have been noted as having under-institutionalized party systems such as Benin (Kuenzi and Lambright 2001), the Philippines (Hicken and Kuhonta 2015), and Guatemala (Mainwaring 2018) have some of the lowest scores.

Figure 3.1 *PSI Scores* in 2010



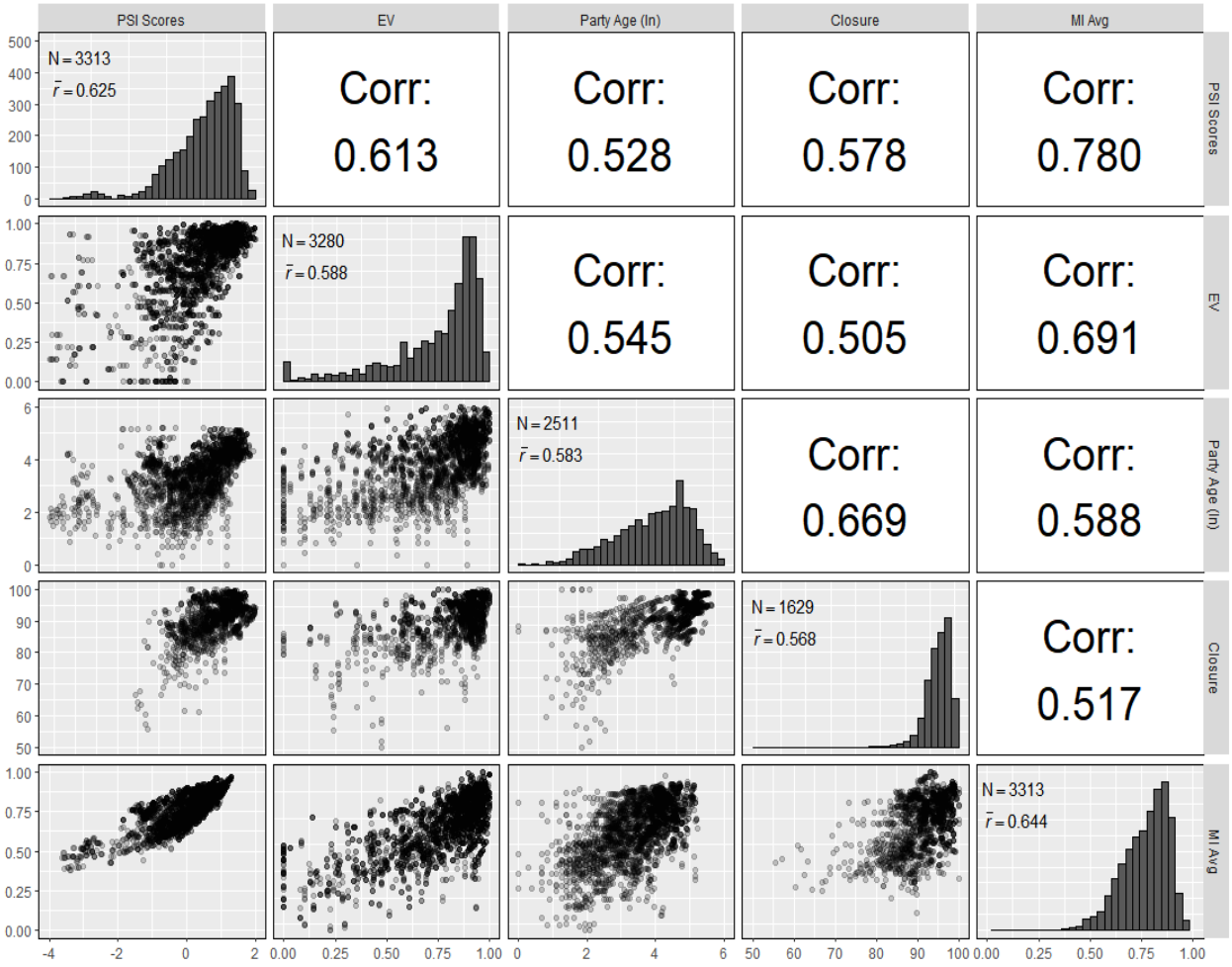
To further examine the temporal variation of the measure, I plot the mean *PSI Scores* for the first and last five observations for each country in Figure 3.2. Countries that lie above (below) the 45-degree grey line are those that are estimated to have become more (less) institutionalized over time. The points are evenly divided by the grey line and do not exhibit a clear trend, which confirms that that party systems do not always become and stay institutionalized over time, and that even institutionalized party systems can also undergo de-institutionalization (Casal Bértoa and Enyedi 2021; Chiaramonte and Emanuele 2017; Lindberg 2007). On a pessimistic note, the figure suggests that there has been little convergence in levels of party system institutionalization across democracies.

Figure 3.2 Variations in the *PSI Scores* across Time



Convergent Validity: Correlations with Existing Measures

Figure 3.3 Scatterplots, Histograms, and Correlations of Measures of Party System Institutionalization



Convergent validation leverages the empirical association between measures of the same concept (Adcock and Collier 2001). To this end, I plot the correlations between the *PSI Scores* and alternative measures of party system institutionalization in Figure 3.3. The measures exhibit relatively strong correlations, which is to be expected since they could conceivably be used as measures of the same concept and incorporate similar data in some cases. Nonetheless, there are noticeable differences, which suggests that some measures could be more valid than others. In addition, the correlation between the *PSI Scores* and V-Dem's Electoral Democracy Index is 0.56,

and thus the measure appears to be capturing a concept that is related to but distinct from levels of democracy.

Construct Validity: Causes and Consequences of Party System Institutionalization

A measure with construct validity should exhibit theoretically expected relationships with distinct but related concepts (Adcock and Collier 2001). I conduct two tests of construct validity based on the (1) causes and (2) consequences of party system institutionalization. In accordance with recent cross-national studies of party system institutionalization (e.g., Chiaramonte and Emanuele 2017; Mainwaring, Gervasoni, and Anabella España-Najera 2017; Mainwaring 2018), I estimate the models using Generalized Estimating Equations (GEE) with an AR1 autoregressive error-correlation structure and Huber-White standard errors to account for autocorrelation and panel-heteroskedasticity. The GEE method estimates population-averaged effects and is a relatively conservative estimation strategy (Mainwaring 2018).[29]

In the first test, I iteratively regress each measure of party system institutionalization on a set of theorized determinants (Bizzaro, Hicken, and Self 2020; Casal Bértoa and Enyedi 2021; Hicken and Kuhonta 2015; Mainwaring 2018), which are summarized in Table 3.1. More detailed information about the variables used in the analysis is provided in Table B.4 in the appendix.

[29] "Overall, this makes for a very demanding estimation setting; it is difficult to obtain statistically significant results, and statistically significant results are probably not spurious" (Mainwaring 2018).

Table 3.1 Summary of the Theorized Causes of Party System Institutionalization

Category	Variable	Expected Relationship
Economic Performance	GDP Growth Rate (*GDP Growth*)	+
Political Institutions	Average District Magnitude (*DM*)	+
	Effective Number of Legislative Parties (*ENP*)	–
	Executive Strength (*Executive Strength*)	–
Time	Age of Democracy (*Dem Age*)	+
	Birth Year of Democracy (*Dem Birth Year*)[30]	+
Social Cleavages	Ethnic Fractionalization (*EF*)	–
Party	National Level Organizations (*Party Org*)	+
	Local Party Branches (*Party Branch*)	+
	Programmatic Linkages (*Party Linkage*)	+
	Legislative Cohesion (*Party Cohesion*)	+

Source: Bizzaro, Hicken, and Self (2020), Casal Bértoa and Enyedi (2021), Hicken and Kuhonta (2015), and Mainwaring (2018).

The results in Table 3.2 largely support the validity the *PSI Scores*. If the *PSI Scores* provide a more valid measure of party system institutionalization—as I argue—then the measure should exhibit stronger empirical associations with the theorized determinants of party system institutionalization—as is the case. The independent variables also explain a much higher proportion of the variation in the *PSI Scores* as shown by the marginal R-squared values.[31] Introducing measurement uncertainty in Model 2 by using the full posterior distributions of the latent factors (i.e., *PSI Scores (D)*) does change the magnitude and statistical significance of the coefficient estimates, but in varied ways. Nonetheless, most of the substantive implications remain consistent across Models 1 and 2.[32]

[30] The *Dem Birth Year* variable calculates the difference between 2013 (the last time period in this analysis) and the year that democracy was inaugurated in a country. As such, it remains constant within countries, and is larger for democracies that were born in earlier periods.

[31] I use Zheng's (2000) formula for calculating marginal R-squared values.

[32] The strong empirical relationships between *PSI Scores* and the party-level variables are not driven by the inclusion of the *PDST* variable in the measurement model (see footnote 20). In fact, when the model is re-estimated using the *PDST* indicator as the dependent variable, only the coefficient estimate for *Party Linkage* is statistically significant among the party-level variables.

Table 3.2 Causes of Party System Institutionalization

Model	(1)	(2)	(3)	(4)	(5)	(6)
DV	*PSI Scores*	*PSI Scores (D)*	*EV*	*Party Age (ln)*	*Closure*	*MI Avg*
GDP Growth	0.21	1.29	0.40*	-0.05	10.59**	0.08
	(0.24)	[-0.36, 2.98]	(0.20)	(0.56)	(4.65)	(0.07)
DM (ln)	0.07***	0.07***	0.03***	-0.01	-0.27	0.01*
	(0.02)	[0.02, 0.12]	(0.01)	(0.01)	(0.18)	(0.01)
ENP (ln)	-0.18***	-0.35***	-0.07*	-0.07***	-1.50**	-0.05***
	(0.06)	[-0.54, -0.18]	(0.04)	(0.03)	(0.69)	(0.01)
Executive Strength	-0.27**	-0.75**	0.07	-0.85	-4.93	-0.02
	(0.13)	[-1.33, -0.18]	(0.07)	(0.70)	(4.49)	(0.03)
Dem Age (ln)	0.02	0.01	0.03*	0.33***	3.36***	-0.00
	(0.04)	[-0.12, 0.15]	(0.02)	(0.09)	(1.16)	(0.01)
Dem Birth Year (ln)	0.33***	0.28***	0.08***	0.24*	-0.44	0.04**
	(0.08)	[0.09, 0.46]	(0.02)	(0.13)	(1.48)	(0.01)
EF	-0.78***	-0.39*	-0.14**	0.23	-5.68	-0.05
	(0.25)	[-0.76, -0.05]	(0.06)	(0.33)	(4.32)	(0.03)
Party Org	0.13***	0.1	-0.02	0.07	-0.45	0.01
	(0.04)	[-0.07, 0.27]	(0.03)	(0.05)	(0.63)	(0.01)
Party Branch	0.08**	0.26***	0.04**	0.19**	1.10*	0.02**
	(0.03)	[0.12, 0.4]	(0.02)	(0.09)	(0.60)	(0.01)
Party Linkage	0.08***	0.11*	0.00	-0.11*	-0.05	0.01
	(0.02)	[0.01, 0.2]	(0.01)	(0.06)	(0.43)	(0.01)
Party Cohesion	0.06*	0.11**	0.01	0.08	1.25	0.00
	(0.03)	[0.01, 0.2]	(0.02)	(0.05)	(0.84)	(0.01)
Constant	-1.54***	-1.56***	0.32***	1.14**	81.72***	0.62***
	(0.31)	[-2.13, -1.02]	(0.10)	(0.49)	(4.34)	(0.05)
Observations	2833	2833	2803	2162	1432	2833
Countries	91	91	91	89	39	91
Marginal R^2	0.7136	[0.54, 0.59]	0.3761	0.4066	0.4732	0.3924

Note: parentheses show the standard errors, and brackets show the 90% credible interval (see footnote 26). ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

As a second test of construct validity, I examine how the measures of party system institutionalization perform as predictors of a range of outcomes that stand to improve when parties have more information about each other's preferences and probable behaviors, and are better able to sustain intertemporal agreements, i.e., when party systems are more institutionalized (Hicken 2018; Mainwaring 2018; Schleiter and Voznaya 2018; Tommasi 2006). To evaluate the broad applicability of the measures, I select dependent variables (summarized in Table 3.3) from sources that employ distinct data and methodologies. I also control for the strength of other key actors—the bureaucracy, civil society, judiciary, media, and the state—using variables from the V-Dem

dataset. As such, this analysis presents a very challenging test for the measures of party system institutionalization. The dependent variables are appropriately rescaled so that higher values represent superior outcomes, and all variables are averaged over five-year intervals to mitigate the impact of political cycles and measurement noise. To expedite comparisons across the thirty-six regression models, I present just the coefficient estimates for the measures of party system institutionalization in Table 3.4. More detailed information about the variables and the full results can be found in Tables B.6 through B.14 in the appendix.

Table 3.3 Summary of the Dependent Variables

Source	Dependent Variable	Description
BTI	Performance of Democratic Institutions (*PDI*)	Democratic institutions are effective and efficient, and political decisions are prepared, made, implemented and reviewed in legitimate procedures by the appropriate authorities.
CSP	State Effectiveness and Legitimacy (*SEL*)	Capacity of the state to manage conflict; make and implement public policy; deliver essential services and maintain system coherence, cohesion, and quality of life; respond effectively to, and sustain progressive development
FP	Factionalized Elites (*FE*)	The extent to which local and national leaders engage in deadlock and brinkmanship for political gain.
TI	Corruption Perception Index (*CPI*)	Perceived levels of public sector corruption.
V-Dem	Transparent and Predictable Laws (*TPL*)	Laws of the land are clear, well publicized, coherent/consistent, relatively stable from year to year, and enforced in a predictable manner.
WGI	Regulatory Quality (*RQ*)	The ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Note: BTI=Bertelsmann Transformation Index; CSP=Center of Systemic Peace; FP=Fund for Peace; TI=Transparency International; V-Dem=Varieties of Democracy; WGI=Worldwide Governance Indicators.

As seen in Table 3.4, the *PSI Scores* clearly outperform the other measures as a predictor. Strikingly, this pattern holds even when accounting for measurement uncertainty (i.e., using *PSI Scores (D)*) and despite the associated attenuation bias that such uncertainty generates. The substantive implications are also meaningful, and are larger or comparable to those associated with

the bureaucracy, civil society, judiciary, media, and the state.[33] A one standard deviation increase in the *PSI Scores*, which is about the difference between the mean *PSI Scores* of the United States and Turkey, is associated with a 0.22 standard deviation increase in the dependent variables, on average. Moreover, the fact that the *PSI Scores* uncover robust associations even when controlling for the strength of other important political actors suggests that the measure does seem to capture a concept that is distinctly related to the party system.

Table 3.4 Consequences of Party System Institutionalization

	PDI	*SEL*	*FE*	*CPI*	*TPL*	*RQ*
PSI Scores	0.35**	1.28***	0.67***	4.26***	0.18***	0.23***
	(0.16)	(0.34)	(0.17)	(1.18)	(0.06)	(0.04)
PSI Scores (D)	0.23*	0.47**	0.3**	1.92*	0.05	0.08***
	[0.02, 0.43]	[0.13, 0.79]	[0.13, 0.5]	[0.06, 3.9]	[-0, 0.11]	[0.03, 0.13]
EV	-0.05	0.45	0.63*	-0.03	0.07	0.13**
	(0.34)	(0.50)	(0.35)	(2.76)	(0.07)	(0.07)
Party Age (ln)	-0.13	0.56***	0.02	2.75***	0.02	0.05**
	(0.12)	(0.19)	(0.13)	(0.87)	(0.03)	(0.03)
Closure	0.01	0.10**	0.07**	0.42	0.01	0.02***
	(0.02)	(0.04)	(0.03)	(0.31)	(0.01)	(0.01)
MI Avg	1.04	2.35*	2.29***	-6.32	0.22	0.34*
	(0.89)	(1.42)	(0.87)	(6.39)	(0.24)	(0.20)

Note: parentheses show the standard errors, and brackets show the 90% credible interval (see footnote 26). The dependent variables are appropriately rescaled so that higher values represent superior outcomes. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Interestingly, the *EV* measure performs relatively poorly in this set of analysis. The tendency to default to electoral volatility—a narrow and potentially noisy indicator—as a measure of party system institutionalization may be partly responsible for the surprising sparsity of cross-regional studies that find robust associations between party system institutionalization and democratic outcomes. In addition, the weaker results associated with the *MI Avg* measure (the mean of the manifest indicators) affirm the benefits of aggregating indicators using a Bayesian latent variable measurement model.

[33] See Table B.9 in the appendix.

3.6 Conclusion

This chapter contributes to the comparative study of party system institutionalization by presenting a refined conceptualization of party system institutionalization that is more useful for theory-building, and by constructing a comprehensive measure with demonstrated validity that can be used for theory-testing. The conceptual approach and accompanying measure should help to disentangle the causal chains that link party system institutionalization to party building and collapse, on one hand, and democratic consolidation and backsliding on the other, and formulate more systematic and unified understandings about party system institutionalization's role in democracies

In addition, party system institutionalization could drive regime dynamics even in non-democratic contexts. For instance, the durability of competitive authoritarian regimes may depend on the ability of ruling parties to develop institutionalized party systems (Kim, Bernhard, and Hicken 2022), and patterns of interparty competition in previous authoritarian regimes could cast long shadows that continue to shape the party system post-democratization (Hicken and Kuhonta 2015; Loxton 2015; Riedl 2014). However, given disjointed efforts to measure party system institutionalization in democracies, it is unsurprising that there is no comprehensive measure of party system institutionalization in non-democratic regimes. The scope of the measure presented in this chapter could be expanded to cover non-democratic regimes, which could contribute to the development of holistic theories about the long-term causes and consequences of party system institutionalization across regime types and regime transitions.

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Chapter 4
Party Systems and the Provision of Public Goods and Services

4.1 Introduction

In democracies, party systems shape the policymaking environment and determine who gains representation at the policymaking table, which in turn have substantial and long-lasting implications for economic development (Barro 1996; Besley and Ghatak 2006; Keefer and Khemani 2005) and inequality (Anderson et al. 2017; Martinez-Vazquez, Moreno-Dodson, and Vulovic 2012; Verbist, Förster, and Vaalavuo 2012). In this chapter, I develop a comprehensive framework that jointly considers the institutionalization and nationalization of the party system to explain discrepancies in the provision of public goods and services across democracies.[1]

Party system institutionalization refers to the stability and predictability of interparty interactions, while party system nationalization concerns the geographical scope of electoral competition (i.e., national vs. regional). Existing research demonstrates that both party system institutionalization (e.g., Mauro 2022; Robbins 2010) and party system nationalization (e.g., Castañeda-Angarita 2013; Crisp, Olivella, and Potter 2012; Hicken, Kollman, and Simmons 2016; Lago-Peñas and Lago-Peñas 2009) have favorable implications for the provision of public goods and services. However, such studies tend to focus on either party system institutionalization or party system nationalization as the key independent variable of interest, and there has been little

[1] The distributive politics literature also examines institutions (e.g., Iversen and Soskice 2006; Lizzeri and Persisco 2001; Milesi-Ferreti, Perotti, and Rostagno 2002; Weingast et al. 1981) or the characteristics of voters (e.g., Calvo and Murillo 2004; Persson and Tabellini 2000; Weitz-Shapiro 2007) as other potential determinants of such variation. Party systems are in part a function of political institutions and voter behaviors, but they also directly regulate the policymaking process by dictating the parameters under which parties coordinate and negotiate (Hicken 2018).

systematic exploration of how these two dimensions jointly shape policymaking and policy outcomes.[2] Such an approach could provide an incomplete understanding of how party systems matter for policymaking since the policymaking environment is concurrently determined by the degree to which the party system is both institutionalized *and* nationalized. Moreover, the mechanisms that connect these dimensions to the policymaking environment are distinct—party system institutionalization enhances the capacity of parties to engage in intertemporal policy coordination, whereas party system nationalization incentivizes parties to support policies that cater to a broader constituency—and thus varying levels of party system institutionalization and nationalization could lead to divergent outcomes. Accordingly, examining each dimension independently could potentially induce misleading inferences about the relationship between party systems and the provision of public goods and services.

I address such limitations in this chapter by jointly assessing the implications of party system institutionalization and nationalization on policymaking and policy outcomes. First, I investigate how these two dimensions (1) alter the capacity and incentives of parties to supply national policies, i.e., long-term public-regarding policies that seek to promote general welfare (Cox and McCubbins 2001; Hicken 2018; Scartascini, Stein, and Tommasi 2008, 2013; Stein et al. 2006). I assert that both party system institutionalization and nationalization are necessary for elevating the supply of national policies since parties should find it more challenging to coordinate on such policies when the party system is under-institutionalized, while those in under-nationalized party systems should instead prefer targeted policies. Second, I evaluate how party system institutionalization and nationalization contribute to actual public service outcomes that are (2) of

[2] Some exceptions include Hicken (2018), Jones (2005), and Tommasi (2006), though these studies stop short of examining how these dimensions jointly shape policymaking.

higher quality and (3) equally accessible to all of society.[3] Contrary to the preceding prediction, I suggest that party system institutionalization should play a greater role than party system nationalization in bringing about superior public service outcomes. This is since the effective provision of public services is mainly driven by a stable policymaking environment, which is a function of party system institutionalization, and is less dependent on the distributive scope of policies, which is related to party system nationalization.

The empirical test of these hypotheses leverages an encompassing sample of democracies that far exceeds the spatial and temporal coverage of most studies of party systems and policymaking, and the results support my argument that party system institutionalization and nationalization can have divergent implications for policymaking and policy outcomes. In sum, this chapter not only complements existing studies by reaffirming the instrumental role that party systems play in policymaking, but also offers a more comprehensive yet nuanced understanding of how party systems shape the provision of public goods and services.

4.2 Party Systems and the Policymaking Environment

Parties face several sources of uncertainty during the policymaking process (Hicken 2018; Lupu and Riedl 2013). When negotiating over policies, parties have incomplete information about each other's policy preferences and probable behaviors, which can impede policy coordination by

[3] Public goods are generally associated with a non-targeted distribution of benefits, which can include but is not limited to public services (e.g., education and healthcare). On the other hand, public services can be delivered through both non-targeted and targeted policies. As noted in the decentralization literature, regionally focused investments can still generate positive policy outcomes (e.g., Grossman, Pierskalla, and Dean 2017; Oates 1972; Ponce-Rodríguez et al. 2018). Moreover, the translation of national policies—and policies in general—into policy outcomes is strongly dependent on their details and implementation, and thus even the same types of policies can produce divergent results (Desmirguc-Kunt, Klapper, and Prasad 2017; Golden and Min 2013; Ross 2006; Scartascini, Stein, and Tommasi 2013). Consequently, the supply of national policies is considered to be largely orthogonal to on-the-ground improvements in public service provision. See Hudson, Hunter, and Peckham (2019) for a review of why such "policy-implementation gaps" exist.

making it more difficult to identify feasible policy options. Parties also face a time inconsistency problem since they must contend with the possibility that current policies could be overturned in the future should a different set of parties gain representation at the policymaking table. Furthermore, policymaking requires interparty cooperation, which becomes increasing challenging if parties can neither make credible commitments nor enforce them. Party system institutionalization mitigates such uncertainties, and enables parties to engage in the type of intertemporal coordination that is crucial for the provision of public goods and services.[4]

Party system institutionalization refers to a process by which similar sets of parties come to compete, colligate and collaborate in a stable and predictable manner across the electoral, legislative, and governmental arenas (Casal Bértoa and Enyedi 2021; Mainwaring and Scully 1995) by establishing rules—both formal and informal (Lupu and Riedl 2013)—that structure interparty interactions (Mainwaring 2018). As the party system becomes institutionalized, parties gain opportunities to repeatedly interact under a similar set of institutional constraints, which generates information about who the parties are, how they might behave, and what the viable policy outcomes are. Moreover, party system institutionalization strengthens horizontal accountability by establishing clearer standards of behavior and improving the ability of parties to collectively punish parties that renege on their commitments (Bernhard et al. 2020). As such, parties in institutionalized party systems come to "develop expectations and behavior based on the premise that the fundamental contours and rules of party competition will prevail into the foreseeable future" (Mainwaring 2018). This lengthens time-horizons and augments the credibility of intertemporal commitments, which makes short-term and long-term tradeoffs feasible (Keefer

[4] *Party* institutionalization, which refers the stable and predictability of individual party organizations, should share a close relationship with party system institutionalization and can also mitigate political uncertainty. As a part of the empirical analysis, I examine whether it is the institutionalization of parties or the party system that is more important for the provision of public goods and services.

2007; Tommasi 2006). As interparty interactions become more stable and predictable, parties also become better able to formulate policies that are aligned with the preferences of both the current and future policymaking parties, which eases the time inconsistency problem and promotes a stable policymaking environment that facilitates the consistent implementation of policies (Hicken 2018; Mauro 2022; Robbins 2010; Stein et al. 2006). In policymaking environments plagued by frequent party turnover and erratic interparty interactions, parties are unlikely to have reliable information about each other or the opportunity to enforce policy commitments, which shortens time-horizons and weakens the credibility of policies. Under such circumstances, parties can be expected to focus on maximizing immediate returns, which could come at the expense of policies that could bring about superior outcomes in the long run.

While party system institutionalization influences the policymaking environment by reducing policymaking uncertainty and strengthening intertemporal policy coordination, party system nationalization shapes policy interactions by determining the extent to which parties are public regarding and prioritize the national common good (Rose and Urwin 1975). Party systems in which the main parties draw support from across the country are regarded as being more nationalized, whereas those that are dominated by parties rooted in select regions are considered to be under-nationalized (or regionalized). Since the potential returns associated with national policies increase with the size of the targeted constituency (Bueno de Mesquita et al. 2003; Cox and McCubbins 2001)—and parties that draw support from across the country can be expected to prefer policies that broadly target all constituencies—party system nationalization is thought to generate stronger incentives for parties to pursue policies that are wider in geographical scope. On the other hand, parties in under-nationalized party systems have fewer reasons to treat all

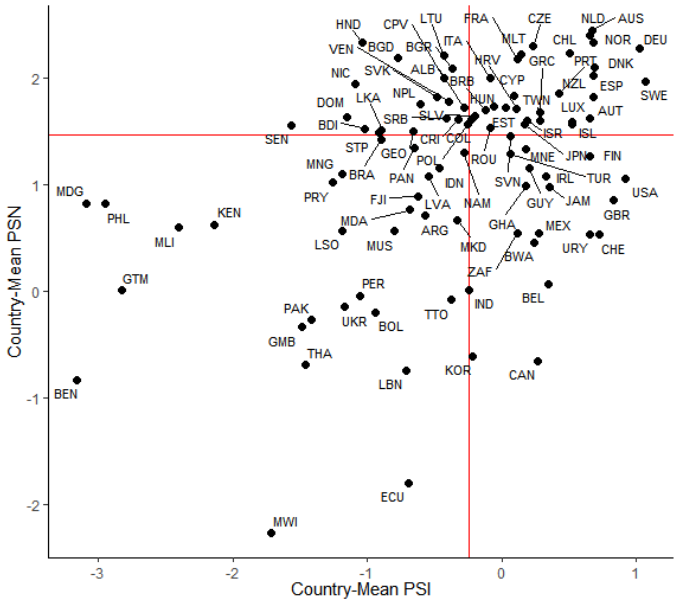
constituencies equally, and can instead be expected seek policies that narrowly distribute benefits to their own regional strongholds.

Accordingly, party system institutionalization and nationalization are distinct concepts that have different implications for the policymaking environment. However, given the lack of research that considers these two dimensions in tandem, there is no established consensus about how they might be related. On that account, it could be the case that these two dimensions are mutually reinforcing, and such assumptions are somewhat prevalent in the literature (although generally overlooked). For example, Mauro (2022) and Robbins (2010) argue that parties in institutionalized party systems should be more likely compete over broader constituencies, and discussions of party system nationalization often presume that parties will be able to effectively coordinate around national policies if it is in their interests to do so. If institutionalized party systems are nationalized and vice versa—i.e., conceptually distinct but empirically indistinguishable—then jointly assessing these two dimensions could provide little additional utility beyond confirming existing assumptions in the literature.

Nonetheless, I assert that there is nothing intrinsic about party system institutionalization and nationalization that guarantees that these two dimensions will move together. Theoretically, party systems could still be stable and predictable (i.e., institutionalized) even if they are composed of regional parties (i.e., under-nationalized), while party systems that are dominated by parties with national orientations (i.e., nationalized) could nonetheless be prone to frequent party turnover and erratic interparty interactions (i.e., under-institutionalized). Such variation can in fact be observed empirically. In Figure 4.1 below, I plot country-mean values of the measures of party system institutionalization and nationalization that are used in the empirical analysis presented

later in the chapter.[5] As the figure shows, the two dimensions are positively correlated (r=0.43), but there is a large subset of countries with party systems that score relatively high on one dimension but not the other, and the four quadrants (divided by median country-mean values) are relatively uniformly populated. Consequently, there are theoretical and empirical grounds to contend that party system institutionalization and nationalization should not simply be subsumed under each other, and that divergences across these two dimensions could have disparate implications for policymaking and policy outcomes.

Figure 4.1 Cross-National Variation in Party System Institutionalization and Nationalization



Note: red lines indicate the median country-mean values of each measure.

4.3 Party Systems and the Provision of Public Goods and Services

As discussed in the previous section, both party system institutionalization and nationalization can be expected to contribute positively to the provision of public goods and services in one form or

[5] The data cover 1945-2018, though not all countries have observations over the entire period. Counties enter the sample whenever they become a democracy, which is classified using a threshold of 6 in the Polity V dataset (Marshall and Gurr 2020).

another. Based on this discussion, I develop three sets of testable propositions that address how the institutionalization and nationalization of the party system impacts (1) the supply of national policies, (2) the quality of public service outcomes, and (3) equitable access to public services.

I first consider the supply of national policies, i.e., the role of the party system during the policy formulation phase. National policies distribute benefits broadly across the country and thus tend to be relatively costly, which can raise the bargaining stakes and make it more challenging to reach a policy consensus. In institutionalized party systems, parties can leverage their knowledge of each other's policy preferences and past interactions to not only coordinate over contested issues more efficiently, but also devise policies that are more consensual. Moreover, if the party system is institutionalized, parties will more often than not meet again at the policymaking table in the future, and thus become better positioned to enforce agreements. These types of policymaking interactions give parties greater certainty that any policies adopted in the present will be maintained over time, which lengthens time-horizons and increases the expected returns of long-term policies (Hicken 2018). This feature of the policymaking environment is especially relevant for national policies, which not only tend to bring about short-term costs, but typically require an extended period to generate positive returns (Hudson, Hunter, and Peckham 2019; Jacobs 2016; Keefer and Khemani 2005). Such intertemporal trade-offs are less feasible when the party system is under-institutionalized and parties have stronger incentives to maximize short-run returns and treat interactions as zero-sum games. Consequently, party system institutionalization should advance the capacity of parties to engage in intertemporal policy coordination, which makes national policies more viable during policy negotiations.[6]

[6] This is not to say that parties will always pursue long-term policies, but simply that parties will be better able to make trade-offs between short-term and long-term considerations during the policymaking process.

However, even if the party system is institutionalized, national policies could still be undersupplied if the party system is under-nationalized and parties simply prefer targeted policies that favor their own regional strongholds.[7] Conversely, policymaking environments in nationalized but under-institutionalized party systems may also depress the supply of national policies by undermining the ability of parties to consistently coordinate around national policies over time. That is, parties are unlikely to have the requisite capacity and incentives to expand the supply of national policies unless the party system is both institutionalized and nationalized.

H1a: Party system institutionalization will enhance the supply of national policies only when the party system is nationalized.
H1b: Party system nationalization will enhance the supply of national policies only when the party system is institutionalized.

I next turn my focus to actual public service outcomes, i.e., how the party system matters for the implementation of policies. Party system institutionalization reinforces policy stability by promoting intertemporal policy coordination, which supports the consistent implementation of policies. In turn, policy stability bolsters policy credibility, which is essential for the effective implementation of policies (Cox and McCubbins 2001; Hicken 2018) since the actors who carry out the policies on the ground (e.g., bureaucracy) are less likely to be committed to such endeavors if they expect current policies to be overturned in the future. As such, institutionalized party systems should promote the consistency and effectiveness of policy implementation, which should, ceteris paribus, contribute to higher levels of public service provision in the long run.

[7] It could even be the case that such institutionalized but under-nationalized party systems promote extensive logrolling by enabling region-oriented parties to better coordinate on such policies.

On the other hand, party system nationalization fashions the extent to which parties pursue public-regarding policies, but the manner in which policies are implemented is largely unrelated to the geographical scope of policies. Stated otherwise, policies do not automatically translate into better policy outcomes simply because they are public-regarding, and even regionally oriented targeting can still bring about net returns (e.g., Grossman, Pierskalla, and Dean 2017; Oates 1972; Ponce-Rodríguez et al. 2018) if they are carried out properly, which is more a function of the institutionalization of the party system rather than its nationalization. Policies in nationalized party systems will still lack stability and credibility if the party system is under-institutionalized and policies face a greater risk of either being overturned or inadequately implemented (Hicken 2018). Such policymaking environments can be especially detrimental for public service outcomes, which generally require consistent implementation over an extended period to produce discernible benefits.

In short—and contrary to the hypotheses regarding the supply of national policies—party system institutionalization is anticipated to be a sufficient condition for engendering higher levels of public service provision, while party system nationalization is not expected to play a significant role in this regard.

H2a: Party system institutionalization should be associated with a greater provision of public services.

H2b: Party system nationalization should not be associated with a greater provision of public services.

Lastly, I reflect on the distributional consequences of party systems. Although some countries may spend more on public services and/or exhibit higher levels of public service provision, such benefits may be isolated to specific regions (Hicken, Kollman, and Simmons 2016) or to more privileged sectors of society (Battacharya, Saha, and Banerjee 2016; Ross 2006; Zajacova and Lawrence 2018). This can further exacerbate socio-economic and political inequalities since the poor are particularly reliant on public services to maintain basic standards of living (Demirguc-Kunt, Klapper, and Prasad. 2017; Keefer and Khemani 2005). As such, I examine how the party system could cultivate a distribution of high-quality public services that are equally accessible to all of society.

Party system institutionalization can mitigate political market imperfections that lead to an under-supply of public services to the poor. In institutionalized party systems, voters not only have more information about who the parties are and what they stand for, which allows them to develop more accurate expectations about party behaviors, but are also better able to hold parties accountable for their performance (Jensenius and Suryanarayan 2022; Schleiter and Voznaya 2018).[8] Moreover, low-income citizens comprise a large proportion of eligible voters. Since parties in institutionalized party systems have longer time-horizons, they have stronger incentives to make high-quality public services accessible to the poor since this could have long-lasting implications for their electoral prospects. Thus, party system institutionalization not only dissuades parties from catering to special interests, but also reinforces the returns associated with a more equitable provision of public services (Keefer and Khemani 2005; Sen 1990), and thus should be beneficial for increasing the access that low-income voters have to high-quality public services.

[8] Since parties will expect to compete in the future and care more about doing well in elections due to having longer time-horizons. In addition, voters cannot hold parties accountable for their performance if the party system undergoes substantial turnover after every election.

The relationship between party system nationalization the equitable provision of public services is more ambiguous. One could make the simple argument that this relationship should be positive since parties have greater incentives to distribute benefits broadly across society. However, as previously discussed, policies that are broad in geographical scope are not necessarily implemented properly across the board. Furthermore, public services with extensive coverage can still exacerbate inequality if the quality of such provision is uneven across society (Desmirguc-Kunt, Klapper, and Prasad 2017), and it is usually the poor who are at greater risk of being excluded from having access to functioning public services (Ross 2006).[9] While parties in nationalized party systems may promote policies that are national in scope, this does not guarantee that such policies will be consistently and effectively implemented across all regions. Thus, party system nationalization is not expected to contribute towards a more equitable provision of public services.

H3a: Party system institutionalization should be associated with more a more equitable provision of public services.

H3b: Party system nationalization should not be associated with a more equitable provision of public services.

4.4 Empirical Analysis

The empirical analysis leverages an encompassing sample that covers most post-WWII democracies to test the hypotheses. I begin this section by identifying the measures of party system institutionalization and nationalization that are used in the empirical analysis. Using these

[9] As Crisp, Olivella, and Potter (2012) point out, nationalized party systems could still exhibit high levels of targeted policies if cross-district constituencies are dissimilar.

measures, I first investigate the extent to which party system institutionalization and nationalization matter for the supply of national policies, and then assess whether these two dimensions explain variations in the quality and equitable access of public education and healthcare services. After assessing the robustness of my main results, I conclude the analysis by exploring whether it is *party* institutionalization or party system institutionalization that matters for the provision of public goods and services.

Measuring Party System Institutionalization and Nationalization

Due to the difficulties associated with collecting and coding comparative party system data, most empirical studies of party system institutionalization focus on a particular region while frequently employing different indicators,[10] and there have been limited attempts to develop a comprehensive measure of party system institutionalization that covers most democracies. Consequently, the few studies that are cross-regional in scope have had little option but to mono-operationalize party system institutionalization with electoral volatility or the age of the main parties since data for these variables are available for a wide range of countries. However, party system institutionalization is a multi-faceted concept, and thus measuring it with a single indicator could introduce biases in comparative analyses (Munck and Verkuilen 2002). Moreover, electoral volatility can be an unreliable measure as it can be sensitive to coding decisions (Casal Bértoa, Deegan-Krause, and Haughton 2017), while the age of the main parties primarily captures the institutionalization of individual parties rather than the party system.

The Party System Institutionalization Scores, which is presented in Chapter 4 of this dissertation, address such weaknesses. These scores not only incorporate multiple indicators of

[10] Due to data limitations on one hand, and varied conceptual understandings on the other.

party system institutionalization to formulate more comprehensive estimates, but also account for the latent nature of the concept, measurement uncertainty,[11] and non-random missing data. Furthermore, the measure covers 96 post-WWII democracies, and hence offers the most expansive spatial/temporal coverage of any measure of party system institutionalization. Most importantly, the measure has demonstrated validity and outperforms existing measures such as electoral volatility and the age of the main parties in empirical tests of validity. Therefore, I measure party system institutionalization (*PSI*) using the Party System Institutionalization Scores.

I draw my measure of party system nationalization (*PSN*) from the Varieties of Democracy (V-Dem) dataset (Coppedge at al. 2021).[12] The variable represents standardized scores of the extent to which the major parties are competitive across most regions in the country (as opposed to in one or two regions). This measure also comes with almost universal coverage, and is less sensitive to cross-national differences in electoral systems as it is constructed using expert assessments instead of electoral data. Nonetheless, I demonstrate that the main results hold even if alternative measures constructed using electoral data are used instead.

Party Systems and the Supply of National Policies

In existing studies of party systems and policymaking, the supply of national policies is most commonly measured using government spending data (e.g., Castañeda-Angarita 2013; Crisp, Olivella, and Potter 2012; Lago-Peñas and Lago-Peñas 2009; Robbins 2010).[13] The main advantage of this approach is that data are generally widely available and—at least on the

[11] I use the median of the posterior distributions of latent levels of party system institutionalization as point estimates in the main analysis, i.e., without accounting for measurement uncertainty. Nonetheless, as I demonstrate through robustness checks, the main results hold even when accounting for measurement uncertainty.
[12] *v2pscomprg* in the V-Dem codebook.
[13] For instance, social security transfers are considered to be a form of non-targeted expenditures, while transfers to subnational governments or households are regarded as targeted spending.

surface—can be directly compared across countries. However, this measurement strategy is not without its weaknesses. Countries do not always prioritize the same types of policies or distribute different benefits to different groups (Kramon and Posner 2013), and expenditures that are traditionally associated with non-targeted policies could in fact be targeted depending on their implementation and details (Golden and Min 2013; Keefer 2007; Rodrik 1995; Stein et al. 2006). These issues become more pronounced in larger samples since cross-national institutional dissimilarities can produce further divergences in the composition of public spending (Lago-Peñas and Lago-Peñas 2009). Such problems can be mitigated by limiting the sample, which alleviates some of the data demands and allows the researcher to leverage their expertise to classify expenditures more accurately, but comes with the obvious cost of reduced generalizability.

Given such drawbacks, I adopt a different measure that both leverages expert assessments and offers extensive coverage. More specifically, I measure the supply of national policies using a variable from the V-Dem dataset that captures the extent to which social and infrastructural spending in the national budget is intended to benefit all communities with society (i.e., is public-regarding) or is narrowly targeted towards select groups within society (i.e., is private-regarding). This *Public Expenditures* variable [14] is constructed using expert assessments about the "particularistic" or "public goods" nature of government expenditures.[15] Since the measure does not involve making potentially tenuous assumptions about what types of spending are public or private-regarding and instead broadly captures the distributive nature of government expenditures, it should be much more useful for identifying cross-national differences across a comprehensive yet diverse set of democracies. In addition, this variable offers almost complete coverage for all

[14] *v2dlencmps* in the V-Dem codebook.
[15] Ordinal responses range from 0 ("Almost all of the social and infrastructure expenditures are particularistic") to 4 ("Almost all social and infrastructure expenditures are public-goods in character. Only a small portion is particularistic"), and responses are converted to standardized scores.

democracies. Since government budgets are determined on an annual basis, the unit of observation for the corresponding analysis is country-years.

I include the aforementioned measures of party system institutionalization and nationalization as the key explanatory variables, and also add their interaction to the model since theory suggests that the impact of each dimension on the supply of national policies should be conditional on one another. In addition, I account for other relevant independent variables that could shape the outcome of interest. I incorporate a lagged dependent variable since government expenditures in a given year should be partly constrained by past expenditures. I also calculate the effective number of parties (*ENP*) to measure the fragmentation of the party system, which could contribute to greater policy stability by increasing the number of policymaking actors (Hicken 2018).[16] Since uncertainty over regime durability shortens time-horizons (Lupu and Riedl 2013), I control for the institutionalization of democracy by measuring the age of democracy (*Dem Age*) using data from the Polity V dataset (Marshall and Gurr 2020).[17] Furthermore, the type of democratic regime (i.e., parliamentary vs. presidential) could also be pertinent since presidential systems are associated with an undersupply of public goods (Persson, Roland, and Tabellini 2000). Thus, I include an indicator variable for *Presidentialism* using data from the Democratic Electoral Systems dataset (Bormann and Golder 2013) supplemented with data from the Database of Political Institutions (Cruz, Keefer, and Scartascini 2018). The extent of *Decentralization* could plausibly be expected to influence patterns of government spending,[18] and is operationalized using

[16] The effective number of parties is another often-studied dimension of party systems. However, it is not a key focus in this chapter since the impact of the effective number of parties on policy stability—the main mechanism that connects the concept to policymaking and policy outcomes—is superseded by that of party system institutionalization. In other words, regardless of whether a party system is two-party or multi-party, the stability and predictability of the interactions between parties is much more consequential for policy stability.

[17] The variable sums the number of years that a country has been a democracy using a threshold of 6 from the Polity V dataset (Marshall and Gurr 2020).

[18] Treisman (2007) provides one review of the decentralization literature.

an indicator variable from the V-Dem dataset that signals whether a regional government exists in a given country-year.[19] Lastly, I control for overall levels of economic development using GDP per capita (*GDPpc*) data from the Maddison Project (Bolt and van Zanden 2020). Summary statistics of the variables are presented in Table 4.1.

Table 4.1 Summary Statistics for the Public Expenditures Analysis

Variable	N	Mean	SD	Min	Max
Public Expenditures	3313	1.3526	0.9246	-1.745	3.531
PSI	3313	-0.0007	0.8435	-3.6268	1.3073
PSN	3313	1.2867	0.9287	-2.513	2.448
ENP (ln)	3313	1.1467	0.4432	0	2.8102
Dem Age (ln)	3313	3.5459	0.8856	1.7918	5.3471
Presidentialism	3223	0.4856	0.4999	0	1
Regional Elections	3313	0.7199	0.4491	0	1
GDPpc (ln)	3271	9.4943	0.8706	6.58	11.35

I estimate the model using Generalized Estimating Equations (GEE) with an AR1 autoregressive error-correlation structure and Huber-White standard errors to account for autocorrelation and panel-heteroskedasticity.[20] It estimates population-averaged effects and is a relatively conservative estimation strategy (Mainwaring 2018). The results pertaining to the key independent variables of interest are provided in Table 4.2, and the full results are provided in Table C.1 in the appendix.[21]

[19] *v2elreggov* in the V-Dem codebook.

[20] A pooled OLS estimation approach is problematic given the presence of panel heteroscedasticity and autocorrelation (Beck and Katz 1995). Fixed-effects estimation is a popular method for handling panel data, but is less suitable for these models given the presence of a lagged dependent variable, which can bias estimates (Nickell 1981), and the slow-moving nature of the key independent variables of interest (Plümper and Troeger 2007).

[21] Out of the control variables, only the coefficient estimate for *Presidentialism* is statistically significant (and negative, which aligns with expectations), though just barely (*p*-value=0.091). These weak empirical relationships between *Public Expenditures* and the control variables may not be too surprising since these variables broadly structure the political conditions under which parties interact, but policies are ultimately determined by how parties strategically navigate such conditions, which is more directly a function of the party system.

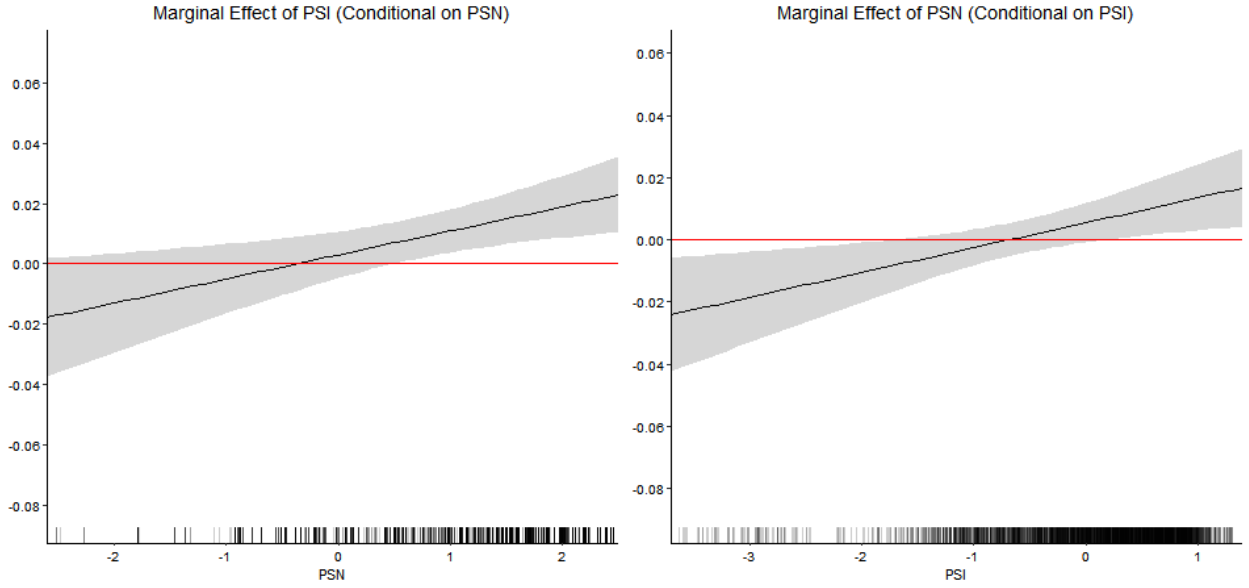
Table 4.2 Effects of PSI and PSN on Public Expenditures

Model	(1)
DV	*Public Expenditures*
DV (t-1)	0.9670***
	(0.0056)
PSI	0.0030
	(0.0047)
PSN	0.0055
	(0.0039)
PSI × *PSN*	0.0080**
	(0.0034)
Observations	3095
Countries	94

Note: standard errors shown are shown in the parentheses.
The full results can be found in Table C.1 in the appendix.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Joint hypothesis tests indicate that both *PSI* (p=0.010) and *PSN* (p=0.066) share a statistically significant association with *Public Expenditures*, and such associations do seem to be conditional on the other dimension (p=0.020). To ease interpretations of these results given the interaction term, I plot the conditional marginal effects of party system institutionalization and nationalization along with 90 percent confidence intervals in Figure 4.2.

Figure 4.2 Marginal Effects of PSI and PSN (Table 4.2)



The figure reveals that the estimated marginal effect of party system institutionalization is positive only at higher levels of party system nationalization (left pane), and vice versa (right pane).[22] These patterns corroborate the argument that parties are unlikely to increase the supply of national policies unless they have both the capacity (i.e., in institutionalized party systems) and incentives (i.e., in nationalized party systems) to do so. The substantive implications are also significant. A one standard deviation increase in *PSI* (*PSN*) holding *PSN* (*PSI*) at its 90th percentile[23] is predicted to lead to a 0.60 (0.39) standard deviation increase in *Public Expenditures* in the long run.

Party Systems and Public Service Outcomes in Education and Healthcare

Although the evidence suggests that party system institutionalization and nationalization have salutary implications for the supply of national policies, a greater supply of national policies does not necessarily lead to better public service outcomes (see footnote 3 in this chapter). Consequently, I examine how the institutionalization and nationalization of the party system are related to actual levels of public service provision. To this end, I focus on education and healthcare outcomes, which have real and significant implications for the quality of life enjoyed by citizens, and particularly those in lower socioeconomic brackets (Keefer and Khemani 2005).[24]

More specifically, I investigate two fundamental public service outcomes in education and healthcare—average years of education and infant mortality rates. Even though policy priorities likely vary from country to country, preferences for improvements in these outcomes should be

[22] The right pane also suggests that the supply of national policies decreases as an under-nationalized party system becomes institutionalized. This makes intuitive sense since the capacity of regionally oriented parties to engage in coordinated logrolling should increase with the institutionalization of the party system. Nonetheless, preliminary analysis indicates that this result not necessarily robust to different model specifications.

[23] These values are 2.335 and 0.8542 respectively.

[24] Thus, it is unsurprising that these policy areas have been at the center of a wide range of comparative studies of public service provision (e.g., Deacon 2009; Grossman, Pierskalla, and Dean 2017; Hicken and Simmons 2008; Hicken, Kollman, and Simmons 2016; Keefer and Khemani 2005; Lake and Baum 2001; Morrow et al. 2008; Roessler and Schmitt 2021; Stasavage 2005).

universal since they are popular indicators of development and have been consistent features of global development goals.[25] The variable *Education Years* represents the average years of education among citizens older than 15 and is sourced from the V-Dem dataset.[26] *Infant Mortality* reflects the number of infant deaths (babies under the age of one) per 1000 live births in a given year, and the data come from the World Bank Indicators.[27]

Furthermore, I also consider whether party system institutionalization and nationalization lead to more equitable access to public services. However, directly measuring the extent to which public services are distributed equitably across society requires detailed within-country data on public service outcomes, which are not available for many countries in the sample. Fortunately, the V-Dem dataset provides two convenient measures that leverage expert assessments to provide cross-nationally comparable standardized scores of education and healthcare equality. The *Education Equality* and *Health Equality* variables measure the extent to which high quality basic education and healthcare are guaranteed to all citizens.[28]

As for the independent variables, I again include measures of party system institutionalization and nationalization, though an interaction term is not included this time since only party system institutionalization is hypothesized to drive better public service outcomes.[29] I also incorporate the same set of control variables as the first empirical analysis to mitigate potential confounders.

[25] For example, these indicators are explicitly highlighted as areas for improvement in both the UN's Millennium Development Goals and the Sustainable Development Goals.
[26] *e_peaveduc* in the V-Dem codebook.
[27] In addition to capturing an acutely significant health outcome, infant mortality rates also indirectly reflect other health-related conditions such as access to clean water and sanitation, poverty, and prevalence of diseases (Hicken, Kollman, and Simmons 2016; Ross 2006).
[28] *v2peedueq* and *v2pehealth* in the V-Dem codebook, respectively.
[29] Nonetheless, I test for this possibility during the robustness checks.

Table 4.3 Summary Statistics for the Public Service Outcomes Analysis

Variable	N	Mean	SD	Min	Max
Education Years	612	8.8179	2.7194	0.7207	13.61
Infant Mortality	615	20.1361	21.9939	1.7	156.72
Education Equality	678	1.3743	1.397	-2.345	3.425
Health Equality	678	1.5559	1.3154	-1.819	3.409
PSI	678	-0.0073	0.844	-3.5616	1.2879
PSN	678	1.2847	0.917	-2.3648	2.448
ENP (ln)	678	1.1506	0.4335	0	2.7892
Dem Age (ln)	678	3.5492	0.8791	1.939	5.3399
Presidentialism	677	0.4860	0.5002	0	1
Regional Elections	678	0.7198	0.4494	0	1
GDPpc (ln)	669	9.4996	0.8756	6.594	11.3325

I adopt a different empirical approach when estimating the subsequent models to account for the intertemporal nature of public service provision. There are typically delays between the formulation of policy, its implementation, and policy outcomes (Jacobs 2016), and such delays should be relatively longer for public services since they generally require an extended period to generate discernible benefits (Hudson, Hunter, and Peckham 2019; Jacobs 2016; Keefer and Khemani 2005). Since investments take time to produce returns, country-year analysis should be too fine-grained to capture such long-term dynamics, and public services outcomes observed in the present should principally be a function of past factors. To account for such temporal dynamics, I average the data into five-year panels[30] and estimate autoregressive distributed lag models with panel-corrected standard errors (Beck and Katz 1995) that regress the dependent variables on their lagged values and the lagged values of the independent variables.[31, 32] Summary statistics are presented in Table 4.3.

[30] Within each five-year period, I exclude countries that are missing for more than two years during that period.

[31] It is also possible to incorporate contemporaneous values of the independent variables in autoregressive distributed lag models depending on the theorized dynamics between the dependent and independent variables (De Boef and Keele 2008). In this case, the dependent variables are not expected to immediately respond to contemporaneous changes in the independent variables, and thus the latter variables are not included in the model.

[32] Another viable modeling strategy could be to estimate error correction models that regress changes in the dependent variables on their lagged values, lagged values of the independent variables, and changes in the independent variables (De Boef and Keele 2008), which could capture both long-run and short-run dynamics. As I later demonstrate, the results are robust to this alternative modeling strategy.

Table 4.4 presents the estimated results for the key coefficients of interest, and the full results can be found in Table C.2 in the appendix. Higher values of the dependent variables are considered to be normatively desirable with the exception of infant mortality rates, for which lower values constitute an improvement.

Table 4.4 Effects of PSI and PSN on Public Service Outcomes

Model	(2)	(3)	(4)	(5)
DV	*Education Years*	*Infant Mortality*	*Education Equality*	*Health Equality*
DV (t-1)	0.9724***	0.9130***	0.9719***	0.9681***
	(0.0090)	(0.0126)	(0.0150)	(0.0186)
PSI (t-1)	0.1421***	-0.6930***	0.0717**	0.0545***
	(0.0287)	(0.1613)	(0.0325)	(0.0204)
PSN (t-1)	-0.0212**	0.1142	-0.0151	0.0012
	(0.0083)	(0.0800)	(0.0114)	(0.0131)
Observations	513	513	572	572
Countries	71	90	91	91

Note: standard errors shown are shown in the parentheses. The full results can be found in Table C.2 in the appendix. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

As expected, party system institutionalization has substantively (and statistically) significant implications for levels of education and infant mortality rates as shown in Models 2 and 3. In the long-run, a one standard deviation increase in party system institutionalization is predicted to lead to a 4.27 year increase in average years of education and a 6.73 death reduction (out of 1000 live births) in infant mortality rates. In addition, the coefficient estimates for party system institutionalization are both positive and statistically significant in Models 4 and 5, which indicates that stable and predictable party systems seem to facilitate a more equitable provision of education and healthcare services. Party system nationalization, on the other hand, appears to have little positive consequences for the outcomes of interest.[33] Together, these results suggest that a stable policymaking environment is more important for producing high-quality and more equitable

[33] Although party system nationalization has a negative and statistically significant coefficient estimate in Model 2, this result is generally not robust.

public service outcomes than one that promotes nationally-oriented politics. That is, party system institutionalization seems to be more consequential for the provision of public services than party system nationalization.

Robustness Checks

The main results demonstrate that party system institutionalization plays a central role in the provision of public goods and services. However, since party system institutionalization is a latent concept (Mainwaring 2018),[34] indicators likely incorporate measurement noise, and overlooking such noise could contribute to overconfident inferences about the importance of party system institutionalization. One of the advantages of the Party System Institutionalization Scores, i.e., the measure of party system institutionalization used in the empirical analysis, is that it quantifies the uncertainty regarding its estimates of party system institutionalization. Thus, I re-estimate the previous models while incorporating measurement uncertainty in the *PSI* variable to assess whether the results remain robust to such noise.[35] As shown in Tables C.3 and C.4 in the appendix, the observed empirical patterns hold despite the apparent attenuation bias brought about by measurement noise. This lends further support to the claim that party system institutionalization is essential for the provision of public goods and services.

In Tables C.5 and C.6 in the appendix, I re-estimate the models after replacing V-Dem's party system nationalization measure with Cox's (1999) alternative measure of party system

[34] Stability and predictability are a function of perceptions and expectations, which cannot be directly measured.
[35] I employ the method of composition (Tanner 1993) to account for measurement uncertainty. I randomly draw 500 sets of values from the full posterior distributions of the latent estimates of party system institutionalization, and iteratively re-estimate the model using each set of values. Within each iteration, I simulate a vector of coefficient estimates from a multivariable normal density using the coefficients and variance-covariance matrices from the fitted model. This procedure simulates 500 draws from the marginal posterior densities of the model coefficients. The medians of the marginal posterior densities are treated as point-estimates, and the 5% and 95% percentiles as the bounds of the 90% credible interval.

nationalization,[36] which calculates inflation scores based on differences in the effective number of parties at the national and district levels.[37] Nationalized party systems should exhibit similar sets of parties at the national and district level, in which case the difference in *ENP* (i.e., the inflation scores) should be small. While the measure (mostly) [38] ranges from 0 to 1, it should be noted that *lower* values represent more nationalized party systems (i.e., the reverse of V-Dem's *PSN* measure). The data for Cox's inflation scores are sourced from the Constituency-Level Elections Archive (Kollman et al. 2019). The reduced coverage that comes with the use of Cox's measure causes the sample to shrink by around 10 percent, but the results nonetheless remain robust, and the predicted conditional impact of party system institutionalization and nationalization on public expenditures in particular become even more pronounced.

Next, the second and third hypotheses assume that the predicted relationship between party system institutionalization and public service outcomes should be unrelated to the nationalization of the party system. Nonetheless, public service outcomes could be further boosted if policies are both consistently implemented *and* nationally oriented, i.e., the impact of party system institutionalization on public service provision could be conditional on the nationalization of the party system. To investigate this possibly, I re-estimate the models in Table 4.4 after adding an interaction term between party system institutionalization and nationalization. As shown in Table C.7 in the appendix, there does not appear to be any persuasive evidence of such a conditional relationship.

[36] Bochsler (2010) offers another measure of party system nationalization that calculates Gini coefficients of inequality in the votes shares obtained by parties across districts, which are then adjusted to account for differences in the number and size of districts across countries. The results obtained using Bochsler's measure mirror the results associated with Cox's measure, and thus are not presented.

[37] The specific formula is $[(ENP_{nat} - ENP_{avg})/ENP_{nat}] \times 100$, where ENP_{nat} refers to the national-level ENP and ENP_{avg} refers to the average district-level ENP.

[38] There are a few negative inflation scores due to the average district-level ENP being greater than the national-level ENP.

Table 4.5 Error Correction Model Estimates of Public Service Outcomes

Model	(6)	(7)	(8)	(9)
ΔDV	*ΔEducation Years*	*ΔInfant Mortality*	*ΔEducation Equality*	*ΔHealth Equality*
DV (t-1)	-0.0382***	-0.0921***	-0.0332*	-0.0400**
	(0.0104)	(0.0132)	(0.0171)	(0.0196)
PSI (t-1)	0.1219***	-0.5934***	0.0709**	0.0461**
	(0.0241)	(0.1458)	(0.0320)	(0.0196)
ΔPSI	0.0510	-0.4820	0.1147*	0.1026
	(0.0443)	(0.5271)	(0.0649)	(0.0664)
PSN (t-1)	-0.0183**	0.0661	-0.0150	0.0013
	(0.0079)	(0.0721)	(0.0121)	(0.0128)
ΔPSN	0.0352	-0.3786	0.0230	0.0183
	(0.0515)	(0.5051)	(0.0421)	(0.0497)
Observations	513	513	572	572
Countries	71	90	91	91

Note: standard errors shown are shown in the parentheses. The full results can be found in Table C.8 in the appendix. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

I also repeat the analysis concerning public service outcomes using error correction models, which regress changes in the dependent variables on their lagged values, lagged values of the independent variables, and changes in the independent variables (De Boef and Keele 2008). These models account for both long-run and short-run dynamics, and shift the substantive focus from levels of public service provision to improvements in such outcomes. Table 4.5 presents the results for the key variables of interest, and the full results are presented in Table C.8 in the appendix. As the results indicate, party system institutionalization is consistently linked to improved outcomes in education and healthcare, whereas party system nationalization continues to have an insignificant impact. In addition, the results corroborate the assertion that party system institutionalization shapes the effective provision of public services in the long run by establishing a stable policymaking environment, as long-run levels of party system institutionalization appear to contribute more heavily towards improvements in public service outcomes than short-run changes.

Party Institutionalization or Party System Institutionalization?

Due to ambiguous conceptualizations, party system institutionalization has often been treated as being synonymous with *party* institutionalization with the assumption being that a party system becomes institutionalized when individual parties within the party system become institutionalized. However, while party system institutionalization should partly be a function of the extent to which individual parties are stable and predictable,[39] stable and predictable parties do not naturally come to develop stable and predictable interactions (Casal Bértoa 2017; Randall and Svåsand 2002). Nonetheless, the institutionalization of individual parties could also influence public service provision, and it could even be that party system institutionalization is less relevant for the provision of public services once party institutionalization is accounted for. That is, the stability and predictability of individual parties could be sufficient for explaining variations in the dependent variables of interest examined in this chapter.

To examine such a possibility, I re-estimate the main models after adding party institutionalization (*PI*) as another independent variable. The variable is measured using the Party Institutionalization Index in the V-Dem dataset, which captures the extent to which parties have permanent national organizations, local party branches, programmatic linkages, and legislative cohesion.[40] It should be noted that this measure is highly correlated with the measure of party system institutionalization (r=0.765 in the country-years dataset). Although this is to be expected since parties should be better situated to develop stable and predictable patterns of interaction if

[39] The reverse could also hold. For example, a stable and predictable party system could incentivize parties to become more institutionalized in order to secure their position within the party system.

[40] An indicator that accounts for the distinctiveness of party platforms (*v2psplats* in the V-Dem codebook) is also included in the original index. However, since such distinctiveness can only be assessed at the *system* level, the indicator is used as one of the manifest indicators in the construction of Party System Institutionalization Scores. As such, the Party Institutionalization Index used in this chapter is adjusted to exclude this particular indicator. Nonetheless, the results are robust to using the original values of the index.

the average level of party institutionalization is high, the high correlation should make it more challenging to identify clear discrepancies between the two variables.

Table 4.6 presents the results that pertain to the supply of national policies. The results show that while party institutionalization has a strong positive association with public expenditures, the main results concerning party system institutionalization and nationalization remain robust. Nonetheless, it should be noted that the substantive and statistical significance of party system institutionalization's estimated effects are somewhat muted as shown in Figure 4.3. While this can be partly attributed to the high collinearity between the measures of party institutionalization and party system institutionalization, it can also be explained theoretically. As individual parties become more stable and predictable, they not only come to have longer time-horizons (Simmons 2016), but also establish clearer signals about what they stand for. Moreover, if familiar parties become regular fixtures of the party system, parties gain some additional information about what parties are more likely to sit at the policymaking table in the future (though not necessarily about which subset or combinations of parties will gain control of policymaking offices, or how these parties will behave during negotiations). Given that such mechanisms overlap with those associated with the institutionalization of the party system, it makes sense that the impact of party system institutionalization is partly diminished when party institutionalization is included in the same model. That being said, party system institutionalization is not completely subsumed by party institutionalization—the latter reflects the stability and predictability of individual parties, which does not fully capture the extent to which interparty interactions are stable and predictable—and thus it is encouraging that party system institutionalization generally continues to exert robust influences even when accounting for party institutionalization.

Table 4.6 Re-estimating Table 4.2 after adding Party Institutionalization as an Independent Variable

Model	(9)
Public Expenditures (t-1)	0.9640***
	(0.0063)
PSI	-0.0084
	(0.0065)
PSN	0.0056
	(0.0038)
PSI × PSN	0.0090**
	(0.0039)
PI	0.0915***
	(0.0288)
Observations	3095
Countries	94

Note: standard errors shown are shown in the parentheses.
The full results can be found in Table C.9 in the appendix.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Figure 4.3 Marginal Effects of PSI and PSN (Table 4.6)

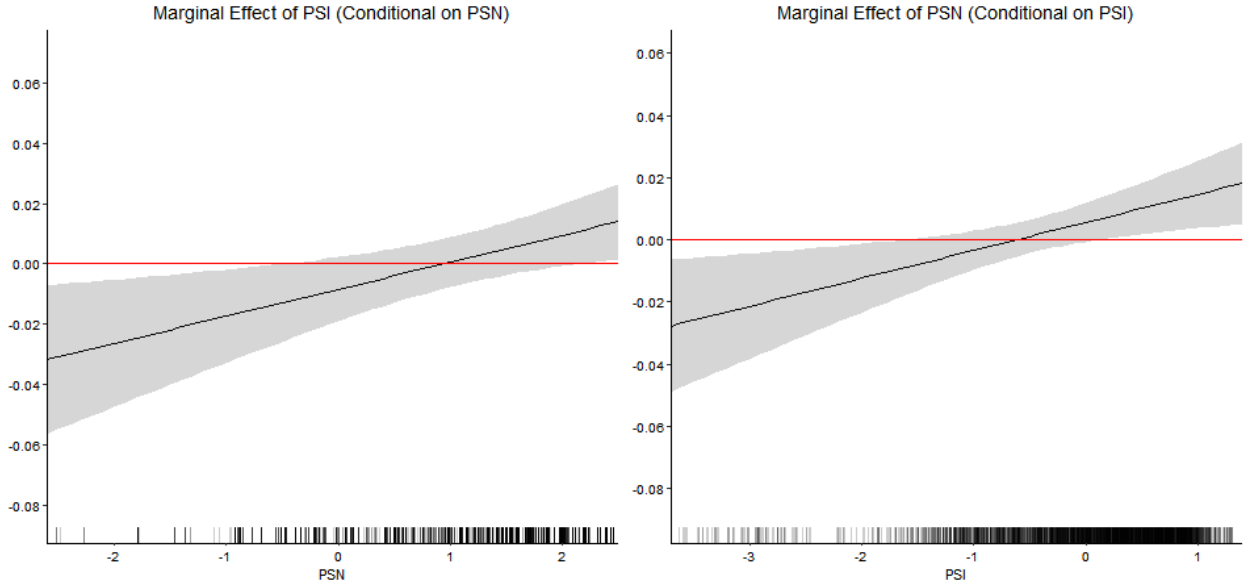


Table 4.7 presents the estimated results when party institutionalization is included as an additional predictor of public service outcomes. Contrary to the previous results, the coefficient estimates for party institutionalization fail to achieve conventional levels of statistical significance across all the models. Party system institutionalization on the other hand continues to be a strong predictor of better public service outcomes. Such patterns suggest that party and party system institutionalization are interrelated but distinct. Party institutionalization generates more

information about what policies each parties prefer, who might control policymaking in the future, and lengthens time-horizons, which can establish useful foundations that allow parties to begin coordinating on policies over time. However, public service outcomes observed in the present are not determined by the potential that parties have to sustain intertemporal coordination, but by the extent to which parties have actually managed to establish a stable policymaking environment that ensures that policies are consistently implemented. This, in turn, is a direct function of the institutionalization of the party system (i.e., whether parties already exhibit stable and predictable interactions), and is less tightly connected to the institutionalization of individual parties. Even if parties are stable and predictable, they are unlikely to possess the capacity to consistently implement policies if they fail to develop institutionalized interactions that enable them to coordinate over policies both in the present and the future. In sum, these results demonstrate the need to disentangle party and party system institutionalization to more clearly understand the specific causal chains that link these processes to the performance of democratic institutions.

Table 4.7 Re-estimating Table 4.4 after adding
Party Institutionalization as an Independent Variable

Model	(10)	(11)	(12)	(13)
DV	*Education Years*	*Infant Mortality*	*Education Equality*	*Health Equality*
DV (t-1)	0.9720***	0.9117***	0.9714***	0.9665***
	(0.0091)	-0.0126	(0.0154)	(0.0196)
PSI (t-1)	0.1530***	-0.8973***	0.0677**	0.0474**
	(0.0311)	(0.2135)	(0.0332)	(0.0230)
PSN (t-1)	-0.0207**	0.1126	-0.0152	0.0012
	(0.0083)	(0.0797)	(0.0114)	(0.0131)
PI (t-1)	-0.0851	1.6718	0.0317	0.0578
	(0.0674)	(1.3250)	(0.0644)	(0.1199)
Observations	513	513	572	572
Countries	71	90	91	91

Note: standard errors shown are shown in the parentheses. Full results are presented in Table C.10 in the appendix. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

4.5 Conclusion

Party systems play an integral role in the functioning of democracies. They set the parameters under which parties negotiate to produce policy, and the institutionalization and nationalization of the party system have been frequently connected—albeit independently—to policymaking processes and outcomes. This chapter contributes to the literature by examining how party system institutionalization and nationalization shape the provision of public goods and services in democracies. To this end, I develop a more nuanced theoretical framework that accounts for the different mechanisms through which party system institutionalization and nationalization influence decision-making. The results indicate that both party system institutionalization and nationalization are necessary for a greater supply of national policies, while party system institutionalization seems to be the key dimension that generates improved public service outcomes. As such, this chapter demonstrates that party system institutionalization and nationalization should not only be treated as distinct concepts, but can also have divergent implications for political outcomes.

The empirical analysis exploits broad cross-national differences in party system institutionalization and nationalization by taking advantage of a relatively expansive sample of democracies that incorporates most democracies in the post-WWII period. The content and dynamics of policy formulation and implementation can vary quite dramatically on a country-to-country basis (and even within countries), and thus it is encouraging that this somewhat coarse approach nevertheless produces robust empirical associations that are aligned with theoretical expectations. Nonetheless, these findings cannot be cast as being causal given the research design. Subsequent studies could build on the results of this chapter by conducting within-country analyses

that better accounts for context-specific details, which could help to clarify the causal mechanisms and dynamics that link party systems to policymaking and policy outcomes in democracies.

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Chapter 5

Party System Institutionalization in Competitive Authoritarian Regimes[1]

5.1 Introduction

Since Mainwaring and Scully's (1995) formative work on party systems in Latin America, the concept of party system institutionalization—or the stability and predictability of patterns of interparty competition—has been widely applied to explain variations in the performance and consolidation of democratic institutions. Party system institutionalization has come to be regarded as a critical underpinning of democracy as it facilitates representation and governance, with defective patterns linked to ineffective democratic institutions and even democratic backsliding.

While the study of party systems has been a staple in the comparative analysis of democracies, the role that party systems play in authoritarian contexts has largely gone unexplored. This is not without reason, as interparty competition was nonexistent or irrelevant in many traditional authoritarian regimes. However, the rise of new forms of competitive authoritarianism engendered party systems in which a dominant ruling party "competes" against opposition parties, albeit while enjoying significant structural and resource advantages. Elections in these regimes are fundamentally distinct from those typically observed in democracies given that they occur on an uneven playing field and are not primarily focused on representation or governance, but provide institutional channels through which incumbents can extend and legitimize their rule. Thus, the patterns of interparty competition observed in these competitive authoritarian regimes carry greater

[1] I am the first author of this chapter, which is co-authored with Michael Bernhard (bernhard@ufl.edu) and Allen Hicken (ahicken@umich.edu).

significance for regime stability since they form the foundation of the regime. A democratic regime can remain robust even when its party system experiences significant turnover—such turnover could even be a reflection of properly functioning democratic institutions—but a competitive authoritarian regime is likely to be much more fragile in the aftermath of substantial party system change. As such, the study of party system institutionalization in competitive authoritarian regimes should not only be valuable, but also necessary for understanding the development and fate of such regimes.

Our main argument is that the durability of a competitive authoritarian regime is contingent on the institutionalization of the party system, which in turn is a function of the ability of the ruling party to pacify opposition challenges in the electoral arena and consolidate its status as the dominant actor within the party system. An extensive body of research highlights the importance of elections for strengthening authoritarian rule (e.g., Levitsky and Way 2010), but also demonstrates that such elections still carry varying degrees of uncertainty and do trigger authoritarian breakdown (e.g., Bernhard, Edgell, and Lindberg 2020). We suggest that the stability and predictability of interparty competition reflects the extent to which ruling parties manage to resolve such electoral uncertainties. Our discussion of this relationship generalizes some of the implications of Magaloni's (2010) formal model of electoral fraud in autocracies. Specifically, we explore how the establishment of an "autocratic collusive equilibrium" through cooptation and repression can curb the ability and incentives of the opposition to disrupt the status quo, which enables ruling parties to "reap the fruits of electoral legitimacy without running the risks of democratic uncertainty" (Schedler 2002) and prolong their stay in power.

To test our argument, we operationalize party system institutionalization with Pedersen's index of electoral volatility, which is the standard measure of the concept in comparative studies

of democracy. However, in authoritarian settings, this system-level electoral volatility measure conflates ruling party and opposition party electoral dynamics, and thus is less useful for our purposes since each type of volatility can have disparate consequences for authoritarian incumbents. As such, we disaggregate the system-level measure into ruling party seat change and opposition party seat volatility, and also divide the latter into Type-A volatility (caused by the entry and exit of opposition parties) and Type-B volatility (caused by shifts in seat shares between existing opposition parties).

Our newly constructed dataset of electoral volatility covers 111 competitive authoritarian regimes across 79 countries from 1945-2018, and we use the dataset to conduct the first large-N cross-national study of party system institutionalization's implications in non-democratic contexts. More specifically, we assess the extent to which different forms of electoral volatility foreshadow the demise of competitive authoritarian regimes, and whether such demise is brought about by authoritarian replacement or democratic transition. Our principal finding is that an erosion of the ruling party's electoral performance combined with a disruption of the competitive equilibrium among existing opposition parties (i.e., a rise in opposition party Type-B volatility) is a robust predictor of competitive authoritarian breakdown in the form of democratization. This result runs counter to expectations about electoral volatility and regime stability in democracies, which suggest that Type-A rather than Type-B volatility is particularly inimical to the consolidation of democracy. In sum, we demonstrate that party system institutionalization can be a useful concept for understanding the performance and survival of non-democratic regimes.

The chapter is organized as follows: in Section 5.2, we review the existing literature on party system institutionalization in democracies before discussing the applicability of the concept to authoritarian contexts; in Section 5.3, we develop hypotheses that link different types of

electoral volatility with the survival and collapse of competitive authoritarian regimes; in Section 5.4, we discuss our data, empirical strategy, and results; in Section 5.5, we provide concluding remarks.

5.2 Party System Institutionalization across Regimes

Party System Institutionalization in Democracies

Institutionalized party systems are those in which "a stable set of parties interact regularly in stable ways" (Mainwaring 1999); a consistent set of parties compete against one another, form alliances, and enter government. As a result of these regular interactions, political actors come to acquire credible information about the parties and their preferences, and develop expectations that existing patterns of interparty competition will persist.

The notion of party system institutionalization grows out of classic work on the origins and viability of democracy. In their foundational study, Lipset and Rokkan (1967) argue that a series of political cleavages intrinsic to the emergence of modernity in Western Europe—center versus periphery, state versus church, owner versus worker, and rural versus urban—became frozen in the late nineteenth and early twentieth centuries and continued to structure party competition for decades after. The creation of durable and regular structures of interparty competition was regarded as a characteristic of successful democratization,[2] and subsequent studies in Western Europe created a set of expectations about the development of institutionalized party systems in democracies. For example, Bartolini and Mair (1990), using data from 13 longstanding West European democracies that span a century, show that party systems became destabilized after the onset of competitive elections before settling into regular patterns of interparty competition (also

[2] However, these cleavages have thawed over time in the face of new divisions over issues such as post-materialist values (Inglehart 1977; Kitschelt 1989) and globalization (Hooghe and Marks 2018; Kriesi et al. 2008).

see Rose and Urwin 1979). Such works were seen as confirming Lipset and Rokkan's (1967) theory of durable cleavages.[3]

The historical patterns observed in Europe do not seem to hold for the rest of the world, however. Instead of early elections functioning as a "great electoral lottery" (Innes 2002) that settle which parties would become mainstays of an institutionalized system, the weeding out period has proved to be of longer duration or shown no signs of ever abating in many newer democracies (Bielasiak 2005; Mainwaring and Zoco 2007). The evidence is extensive and covers many regions, including Latin America (Cohen, Kobilanski, and Zechmeister 2018; Madrid 2005; Roberts 2014; Roberts and Wibbels 1999), Eastern Europe (Bernhard and Karakoc 2011; Bielasiak 2002; Haughton and Deegan-Krause 2020; Kitschelt et al. 1999; Tavits 2005), Asia (Hicken and Kuhonta 2011, 2015; Stockton 2001; Ufen 2013; Wilkinson 2015), and Africa (Ferree 2010; Kuenzi and Lambright 2005; Mozaffar and Scarritt 2005; Riedl 2014; Weghorst and Bernhard 2014).

These developments are troubling because under-institutionalized party systems hinder representation and governance, and thus impair the smooth functioning of democracy. Parties channel and give expression to interests through the way they frame issues and pursue policies, and weakly institutionalized party systems shorten time horizons and reduce the incentives and abilities of parties to coordinate and implement policies that reflect voter preferences (Mainwaring and Scully 1995; Sartori 1976; Schleiter and Voznaya 2018). Parties are also essential for effective governance, and erratic or short-lived governing coalitions can debilitate governments, making rule unpredictable and/or ineffective (Helmke 2017; Hicken 2018; Mainwaring and Scully 1995; Lupu and Stokes 2010; Stokes 2001). Moreover, parties play a central role in opposition; they are one of the key actors who hold governments accountable by imposing audience costs and

[3] See Casal Bértoa and Enyedi (2021) for a more recent analysis of party system institutionalization in Europe.

exercising horizontal constraints for both poorly performing governments and those who try to overreach in their exercise of power (Bernhard et al. 2020).

Sartori (1976) was among the first to point out that "formless," i.e., uninstitutionalized, party systems are more likely to succumb to one-party dictatorships or overthrow by coup d'état. Democracies with weakly institutionalized party systems have also been shown to be more prone to breakdown (Bernhard et al. 2020), and the collapse of party systems has been identified a central mechanism in some cases of democratic backsliding (Helmke 2010, 2017; Seawright 2012; Morgan 2011). Ultimately, the failure to develop institutionalized party systems in democracies can lead to unstructured polities in which policy is incoherent, government disorganized, governance ineffective, and accountability weak, thus leading to endemic instability or democratic failure.

Party System Institutionalization in Authoritarian Regimes

Contrary to democracies, there has been very little call to study party system institutionalization in authoritarian regimes given that most conventional authoritarian regimes were either no-party or one-party regimes. No-party authoritarian regimes, by definition, are devoid of meaningful parties or interparty competition. In one-party authoritarian regimes, which are one of the most important subtypes of historical authoritarianism, the ruling party is the preeminent political actor and any minor parties that are permitted to exist are often fully licensed satellites subservient to the ruling party. Compared to other forms of conventional authoritarianism, these one-party regimes have been able to project expansive infrastructural power (Mann 1984) that reach broadly and deeply into society (Slater 2008), and they represent the most highly institutionalized and stable form of authoritarianism for most of the twentieth century, as demonstrated by their long

and durable tenures in power (Geddes, Wright and Frantz 2018; Smith 2007). In these regimes, the ruling parties may call noncompetitive elections whose plebiscitary nature make them exercises in the public signaling of loyalty to the regime (Havel 2018; Zaslavsky and Brym 1978), where the official slate of candidates consistently secures overwhelming majorities. The essence of no-party and one-party regimes is a monopoly of political organization by the authoritarian incumbents (Przeworski 1991) and an absence or a highly constrained degree of party subsystem autonomy (Sartori 1976). The study of party systems institutionalization in such contexts is effectively meaningless, as one cannot reasonably speak of a system that only has one (or no) constituent units.

Party System Institutionalization in Competitive Authoritarian Regimes

Over the last four decades, the number of authoritarian regimes that do not allow elections, prohibit opposition parties, or where electoral results bear no relationship to votes cast, has become increasingly small. By the mid- to late-1990s, the number of electoral authoritarian regimes surpassed that of conventional authoritarian regimes (Lührmann, Tannenberg, and Lindberg 2018), and the discipline has had to wrestle with the rise of authoritarian regimes that relax the monopoly of political organization and permit some degree of electoral competition and party subsystem autonomy.

In competitive authoritarian regimes, opposition parties are allowed to compete against the ruling party and electoral results are generally dependent on the votes cast. However, such interparty competition is constrained by the structural and resource advantages granted to the incumbent holders of state power and the range of manipulative strategies available to them, which can—if wielded effectively—shield incumbents from electoral punishment and diminish the

probability that they cede power (Levitsky and Way 2010). A large number of authors argue that elections hold the key to maintaining credible commitments within the ruling authoritarian coalition by providing a mechanism for distributing rents (Boix and Svolik 2013; Magaloni 2008; Svolik 2012; Wright and Escribà-Folch 2012), effectively containing popular challenges to authoritarian rule by coopting or disrupting counter-elites who could lead popular challenges to incumbent authority (Arriola, Devaro, and Meng 2021; Gandhi and Przeworski 2007; Lust-Okar 2009), granting concessions to important social constituencies to garner popular support (Greene 2010), and regularizing popular legitimation via electoral competition (Schedler 2002). Nonetheless, elections can be a double-edged sword for ruling parties (Bernhard, Edgell, and Lindberg 2020) as they can amplify the voices of disgruntled actors against ruling incumbents, and facilitate the solution of collective action problems that complicate effective opposition coordination (Knutsen, Nygård, and Wig 2017; Tucker 2007). Thus, elections in competitive authoritarian regimes are not devoid of uncertainty.

We argue that the durability of competitive authoritarian regimes is a function of the ability of ruling parties to minimize such uncertainty by taming the opposition in the electoral arena, which should promote the institutionalization of the party system. Elections provide ruling parties with information about the degree and sources of elite and mass support, and ruling parties can exploit such information to identify and appease key opposition actors via access to appointments and spoils while punishing defectors and those who continually resist the regime. Such strategies create perverse incentives for the coopted opposition to participate in elections without truly challenging the ruling party to maintain good standing and the flow of benefits. This acquiescence through participation legitimizes the ruling party, which simultaneously divides and demotivates anti-regime supporters and thereby diminishes threats to the regime. As ruling parties establish

this "autocratic collusive equilibrium" (Magaloni 2010) by successfully managing elites, opposition parties, and larger groups within society through elections, patterns of interparty competition should become more stable and predictable, and expectations that the party system status quo—which revolves around and is dominated by the ruling party—will persist into the future should become stronger. Consequently, and contrary to democracies in which institutionalized party systems typically manifest in familiar sets of parties alternating in power, institutionalized party systems in competitive authoritarian regimes contribute to the entrenchment of the ruling party. When incumbents fail to effectively contain and control the opposition through elections and develop institutionalized patterns of interparty competition, they face greater prospects of electoral loss or the necessity of using repression to hold on to power. This has negative ramifications for the incumbent's rule, including undermining the claim that their hold on power is legitimized by a popular mandate and exposing their vulnerabilities, which subsequently undermines the durability of the regime.

Thus, our expectation is that party system institutionalization should be an important correlate of the survival and breakdown of competitive authoritarian regimes. In the next section, we propose a novel measure that unpacks the different insights that electoral volatility can provide for assessing the stability and predictability of patterns of interparty competition in competitive authoritarian regimes.

5.3 Electoral Volatility across Regimes

Electoral Volatility in Democracies

Party system institutionalization is commonly measured with electoral volatility (Pedersen 1979), which aggregates the movement of seats (or votes)[4] from party to party across elections:[5]

$$EV_t = \frac{\sum_{i=1}^{N} |p_{i,t} - p_{i,t-1}|}{2}$$

where $p_{i,t}$ is the seat share obtained by party *i* in election *t*. This system-level measure of volatility ranges from 0 to 100, with a value of 0 indicating no change in the composition of the legislature across two consecutive elections, and a value of 100 indicating that the composition of the legislature in election t is completely novel relative to election *t-1*.

Generally speaking, consistently high levels of volatility are associated with under-institutionalized party systems and indicate the inability of the existing parties to develop stable and predictable interparty interactions.[6] More recent work by Powell and Tucker (2014) differentiates between Type-A and Type-B volatility, where Type-A volatility captures the entry and exit of parties from the system, and Type-B reflects the reallocation of seats between existing parties. Type-A volatility is thought to be potentially dangerous and destabilizing for democracies, whereas Type-B is regarded as a reflection of the normal operation of vertical accountability wherein voters redistribute their support based on their satisfaction with the incumbent.

[4] Since legislative outcomes generally reflect electoral outcomes and legislatures are important arenas for opposition coordination and contestation, we focus on changes in seat shares.
[5] See Casal Bértoa and Enyedi (2021) for a novel, though data-intensive, alternative to electoral volatility.
[6] Singular episodes of high volatility are more indicative of party system realignments.

Electoral Volatility in Authoritarian Regimes

Does electoral volatility convey any useful information in authoritarian contexts? Is it an indicator with any validity and utility where party competition is less than fully competitive? To begin, there are three settings in which an application of electoral volatility would be nonsensical, superfluous, or misleading. In the first category are regimes in which there are no direct national elections or where political parties are not allowed (e.g., China). The second category includes regimes that hold elections in which only ruling party is allowed to compete as a party (e.g., Vietnam). In the final category would be regimes in which electoral results have little relationship to underlying voter preferences as expressed through the ballot (e.g., cases with massive electoral fraud or those in which officials are not elected through popular elections). Where these conditions hold, electoral volatility is not useful for making sense of underlying political dynamics between the ruling party and opposition parties.

Electoral Volatility in Competitive Authoritarian Regimes

On the other hand, we expect electoral volatility to provide valuable information in competitive authoritarian contexts. Some could contest this point by arguing that electoral results in these regimes are endogenous to incumbent preferences, and thus convey little else apart from the incumbent's strategic decisions over how much competition to allow, who will be allowed to vote, and what dirty tricks to employ to ensure the desired result. To accept this view, however, is to reject the assumptions of competitive authoritarianism as a concept and ignore the compelling evidence that the chance of incumbent loss is non-negligible. Despite their best laid plans, incumbents of competitive authoritarian regimes can be surprised by election results and do, sometimes, lose elections. Research has shown that these regimes can be both vulnerable and

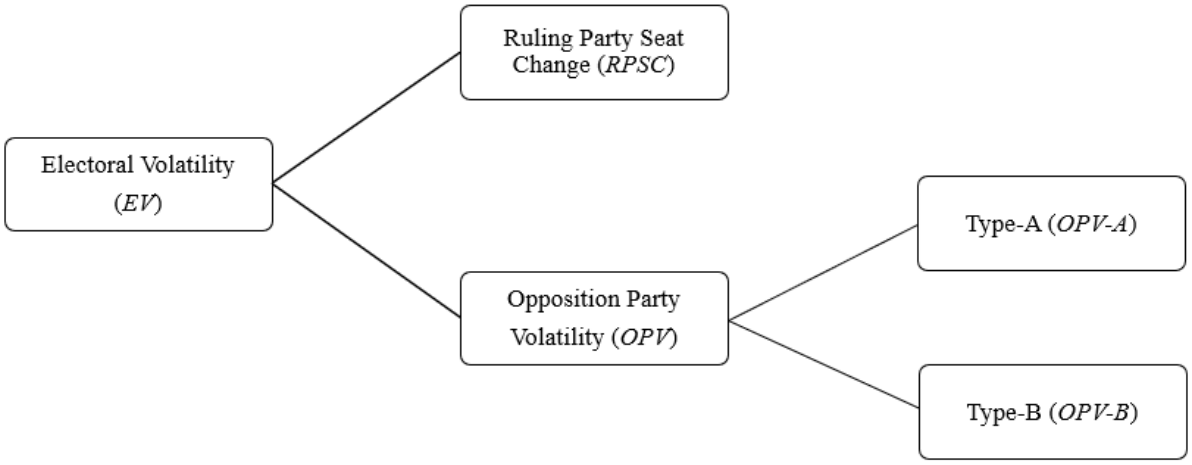
relatively fragile (Bernhard, Edgell and Lindberg 2020; Bunce and Wolchik 2011; Knutsen, Nygård, and Wig 2017), and almost two-thirds of the competitive authoritarian regimes we sample in the empirical analysis eventually come to an end. Thus, unless one is willing to assume that incumbents are more interested in losing than winning, then elections and subsequent patterns of interparty competition should offer meaningful insight into the strength and durability of competitive authoritarian regimes.

But what specific information can electoral volatility provide about competitive authoritarian regimes? While system-level volatility measures are applicable to democracies given that patterns of interparty competition do not usually revolve around a single party, this is clearly not the case in competitive authoritarian regimes where the significance of the ruling party's electoral performance eclipses that of the other parties in the system, and the fate of the regime is directly tied to the fate of the ruling party. Thus, we suggest that the measure needs to be explored in ways that go beyond its application in democracies to be suitable for making sense of electoral dynamics in competitive authoritarian regimes.

More specifically, we treat changes in the seat shares held by the ruling party and opposition parties as distinct components of volatility. We first disaggregate electoral volatility to capture changes in the ruling party's seat share across two elections. Whereas conventional calculations of electoral volatility use absolute changes in seat shares, we expect the direction of change in the ruling party's seat share to be consequential given the ruling party's position within the party system, e.g., a 20 percent decrease in the ruling party's seat share has very different implications compared to a 20 percent increase. Thus, we allow the measure to be positive or negative. We then calculate opposition party volatility following conventional calculations of Pedersen's index, but only using seat shares won by the opposition parties (i.e., excluding the

ruling party's seat share), and further divide this measure into Type-A (seat share changes resulting from the entry and exit of opposition parties) and Type-B volatility (changes in the distribution of seat shares between existing opposition parties). Figure 5.1 below demonstrates how we disaggregate the system-level measure of electoral volatility into its subcomponents.

Figure 5.1 Disaggregating Electoral Volatility in Competitive Authoritarian Regimes



Hypotheses

In this section, we present hypotheses that link these different types of volatility to the survival and breakdown of competitive authoritarian regimes. Central to our argument is the idea that the capability of the ruling party to manage the party system through elections is a key to the durability of these regimes.

We begin with system-level electoral volatility. Contrary to democracies, we suggest that high system-level electoral volatility is unlikely to be a strong predictor of the durability of competitive authoritarian regimes since the measure conflates ruling party and opposition party electoral dynamics:

H1: System-level electoral volatility should not be associated with regime breakdown.

Turning to the disaggregated measures of electoral volatility, we expect decreases (increases) in the ruling party's seat share to indicate a weakening (strengthening) of the ruling party:

H2: Negative (positive) ruling party seat change should be associated with a higher (lower) risk of regime breakdown.

Opposition party volatility should be low when the opposition is content with the collusive equilibrium established by the ruling party and has fewer incentives to launch genuine challenges against the status quo. Thus, low opposition volatility can signal that the opposition has been tamed, contained, or sufficiently handicapped. On a popular level, it signals the satisfaction, resignation, or apathy of voters. High volatility, on the other hand, could be the result of defection or splits at the level of party elites that aim to alter the status quo, or the result of voters expressing their discontent with the existing arrangement of parties. And while we do not argue that such volatility itself causes regime breakdown, it does reflect the deterioration of the ruling party's ability to manage the opposition in the electoral arena, and could well portend the fall of the regime.

H3: Higher opposition party volatility is associated with a higher risk of regime breakdown.

We also disaggregate opposition party volatility into Type-A and Type-B volatility. In democracies, Type-A volatility is regarded as being inimical to democratic consolidation (except

in the one or two elections following a democratic founding or in the case of a successful party system realignment), while moderate Type-B volatility is generally regarded as a manifestation of a healthy and competitive democracy. Such patterns are likely to be reversed in competitive authoritarian regimes. We hypothesize that Type-A volatility will not be associated with regime breakdown, though this is not because we regard the entry and exit of opposition parties as inconsequential. We acknowledge that some cases of opposition party entry and exit may represent the rise of new significant challengers or the failure of the ruling party to satisfy key opposition parties, which could threaten the regime's dominance. Conversely, such electoral patterns could be a result of the ruling party's strategic attempts to remake the collusive bargain due to a perceived need to integrate new partners, or the removal of non-compliant and/or weakened opposition partners. Since Type-A volatility conflates such patterns and does not allow us to distinguish between these two processes, it is likely to have ambiguous associations with regime durability.[7]

In contrast, Type-B volatility should be a robust predictor of regime fortunes. Opposition parties that possess the infrastructure, resources, and support to compete and win seats in consecutive elections despite facing electoral disadvantages are more likely to be to be key actors. When these opposition parties and their supporters have been successfully integrated into the collusive equilibrium and shift their attention from contesting the status quo to maintaining it, we should expect their seat shares to be generally stable over time (i.e., low opposition party Type-B volatility), which should be associated with regime stability. On the other hand, high volatility in their seat shares may reflect the inability of the ruling party to successfully control key opposition actors and resolve electoral uncertainty, and thus should be linked to a greater likelihood of regime breakdown.

[7] Volatility measures in general are not designed to capture such dynamics because they focus on changes in seat shares and not the identity/characteristics of the parties.

H4a: Opposition party Type-A volatility should not be associated with regime breakdown.

H4b: Opposition party Type-B volatility should be positively associated with a higher risk of regime breakdown.

Lastly, we also consider the interaction between ruling party seat change and opposition party volatility. When a ruling party improves on its past levels of electoral performance, opposition party volatility is in part a consequence of the ruling party exerting control at the expense of the opposition. On the other hand, a ruling party that experiences poor electoral performance may find it more difficult to re-establish a collusive agreement that satisfies an altered and potentially empowered set of opposition bargaining partners. Thus, and based on our preceding discussion, we hypothesize that opposition party Type-B volatility will be associated with a higher risk of regime breakdown only when the ruling party concurrently loses seats, but to be largely inconsequential when the ruling party gains seats. Since we expect opposition party Type-A volatility to have a weak association with regime breakdown, we do not expect its interaction with ruling party seat change to add any meaningful distinction.

H5: Opposition party Type-B volatility should share stronger associations with regime breakdown when ruling party seat change is negative.

In our tests of the hypotheses, we assess whether these various components of electoral volatility are associated with regime breakdown generally, and also with breakdown in the form of authoritarian replacement and democratic transition. Since electoral volatility reflects both elite and mass support for the collusive equilibrium, we suggest that it will not be a strong correlate of

authoritarian replacement, which is a function of the ability of the ruling party to organize and discipline elite actors (Svolik 2012). To better predict authoritarian replacement, we may well need detailed data on the state of affairs within the incumbent camp and elite-to-elite relations generally, but such data are much harder to come by. As such, we expect transitions from competitive authoritarianism to democracy, which involves both elites and the masses, to drive the results for authoritarian breakdown in our tests.

H6: The disaggregated measures of electoral volatility should share stronger associations with democratic transition relative to authoritarian replacement.

5.4 Empirical Analysis

Competitive Authoritarian Regimes

We first use the Varieties of Democracy (V-Dem) Regimes of the World variable (Coppedge et al. 2020) to identify electoral autocracies, but incorporate more stringent criteria to construct our sample since not all electoral autocracies are competitive authoritarian. We begin by limiting our sample to regimes that hold minimally competitive multiparty elections with basic de jure provisions of suffrage.[8] We then drop monarchies, as classified by Geddes et al. (2014). Lastly, we further constrain our sample to regimes in which the ruling party won a minimum of two consecutive elections that meet our baseline criteria since electoral volatility cannot be calculated

[8] For minimally competitive elections, we use V-Dem's *v2elmulpar_ord* variable to identify elections in which "at least one real opposition party is allowed to contest but competition is highly constrained—legally or informally," and further drop elections in which the ruling party won all the seats while obtaining more than 90 percent of the vote. We also use V-Dem's *v2x_suffr* variable to drop elections in which less than 25 percent of adult citizens have the legal right to vote to exclude cases such as apartheid-era South Africa from the sample.

with one time point. We end up with a final sample that contains 111 ruling party regimes[9] and 372 elections across 79 post-WWII countries for a total of 940 country-year observations. This makes up less than 30 percent of observations that are classified as electoral autocracies in the V-Dem data set.

Dependent Variable

We use two dependent variables and models in our analysis. First, we estimate the conditional probability of regime survival and breakdown using a logistic regression model. Second, following Geddes et al. (2014), we differentiate between two types of regime breakdown by applying a trinary categorical coding scheme that indicates the survival of the ruling party regime, the displacement of the incumbent by another authoritarian regime, or democratic transition. We regard each pair of outcomes as competing failure events and utilize a multinomial logistic regression model to explore whether different types of electoral volatility are associated with particular types of regime breakdown. We match the dependent variables with values of the independent variables from the preceding year.[10] Around two-thirds of the competitive authoritarian regimes in our sample come to an end; there are 50 instances of authoritarian replacement and 24 instances of democratic transition.[11]

[9] We code the party affiliated with the head of state as the ruling party for cases in which the ruling party is unclear. We code a regime as ending but not undergoing transition if it does not hold an election over the next decade or holds an election that does not meet our baseline criteria. As such, a ruling party can preside over more than one regime.

[10] The dependent variables are matched with values of the independent variable in the same transition year for Bolivia 1964 and Republic of Vietnam 1963 since the ruling parties were removed from power after winning an election in those years. Our results are not sensitive to this coding decision.

[11] The remainder of the regimes are right-censored as they were still in power as of 2018 or transitioned to a closed autocracy. We code regimes that intermittently shift between being classified as an electoral autocracy and democracy as undergoing democratic transition if it classified as a democracy in at least 3 of the 5 subsequent years after the regime is first classified as an electoral democracy.

Independent Variables

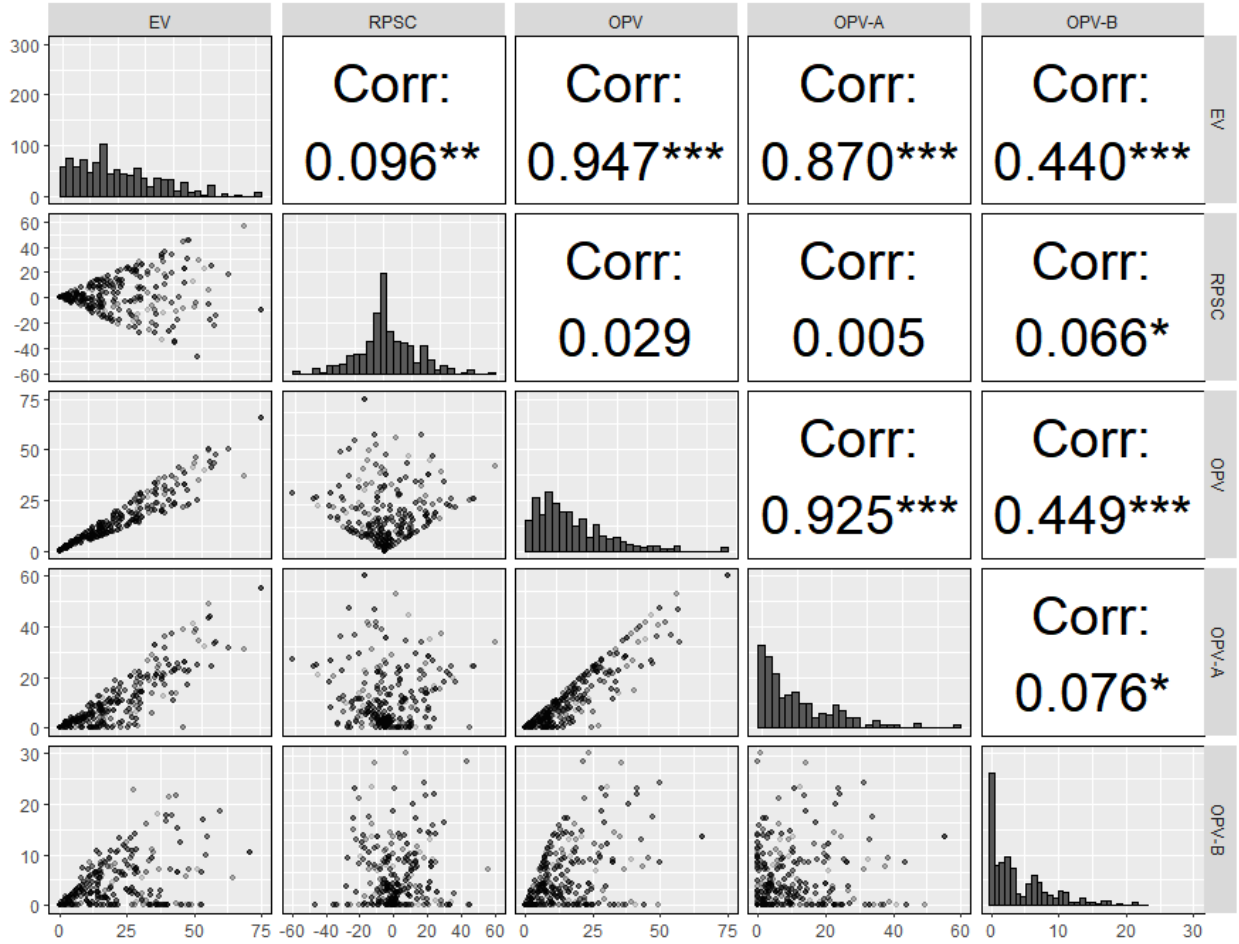
We first calculate Pedersen's (1979) index of electoral volatility (*EV*) using seat share data from general lower house legislative elections.[12] However, since we expect different types of electoral volatility to have distinct implications for ruling party survival, we further disaggregate the measure. We calculate ruling party seat change (*RPSC*), which is simply the change in the ruling party seat share across two consecutive elections and can be positive or negative. Opposition party volatility (*OPV*) is calculated using the Pedersen index excluding ruling party seat shares, and we also break down opposition party volatility into Type-A and Type-B, where opposition party Type-A volatility (*OPV-A*) reflects changes in the distribution of seat shares caused by the entry and exit of opposition parties, and opposition party Type-B volatility (*OPV-B*) represents shifts in the distribution of seats between existing opposition parties.

Figure 5.2 plots the different types of electoral volatility. As in democracies, degrees of electoral volatility vary widely in competitive authoritarian regimes. Changes in the ruling party's seat shares are centered around 0, which indicates that ruling party seat share usually remains steady across elections, as we would expect. Changes in opposition party volatility are generally of higher magnitude, and tend to be driven by opposition party Type-A volatility rather than Type-B volatility. This pattern is unsurprising since opposition parties face significant electoral disadvantages and costs in competitive authoritarian regimes, which can undermine their ability to consistently win seats across elections. Moreover, the lack of uniform trends in electoral

[12] Parties with seat shares less than 2 percent or those categorized as "Other" parties in election data are treated as "new" parties in each election. For mergers and coalitions, we compare party seat shares where possible. Parties that undergo dissolution are treated as "exiting" the party system, and any successor parties as "new" parties that enter the party system. If a party experiences a split but the original party continues to contest and win elections, the original party is treated as a continuation of the old party while the faction that broke off from the original party is treated as a "new" party. Parties that simply change their name without undergoing any significant organizational change are coded as being the same party.

dynamics[13] across the different measures demonstrates that there is some uncertainty about how patterns of interparty competition might unfold in competitive authoritarian regimes.

Figure 5.2 Scatterplots, Histograms, and Correlations of Different Types of Electoral Volatility



Control Variables

We also control for other factors that may influence the durability of competitive authoritarian regimes. Ruling parties may become more experienced and better able to prolong their rule the

[13] Ruling party seat change should be accompanied by—at minimum—equivalent levels of opposition party volatility, but the reverse does not hold; the seat share of ruling parties can remain steady even when the distribution of seats between opposition parties undergoes significant transformation.

longer they are in power. The *Regime Age* variable counts the number of years that have passed since the regime held its first minimally competitive multiparty election. In addition, elections provide an institutionalized means for opposition parties to challenge the ruling party, and thus we control for *Years Since Election*, which counts the number of years that have passed since the last competitive multiparty election held by the ruling party. When opportunities to contest the ruling party through electoral institutions become too infrequent, the opposition may be moved to seek extra-institutional methods of challenging the regime. We also include the effective number of parties (*ENP*) in our model since, ceteris paribus, the ruling party may find it easier to maintain its position as the dominant party when the party system is more fragmented. We use the natural log of *ENP* due to the variable's right skew.

Economic development and growth have been frequently linked to regime stability and are measured using the natural log of per capita GDP (*GDP per capita*) and per capita GDP growth rates (*GDP Growth*), which are sourced from the Maddison Project (Bolt et al. 2020). Since state capacity dictates the ability of regimes to maintain control of the state apparatus, we include V-Dem's estimate of the percentage of a state's territory over which the state has effective control (*Territory Control*).

Extensive ethnic fractionalization can foster conflict (Easterly and Levine 1997; Horowitz 1993) that can threaten the stability of regimes, and so we calculate ethnic fractionalization scores (*EF*) using ethnic data from the Composition of Religious and Ethnic Groups (CREG) data set (Nardulli et al. 2012). While the CREG data set is only available up to 2013, ethnic fractionalization scores change very slowly over time, and thus we use linear prediction based on all past scores to calculate scores for post-2013 years. For the handful of countries that are not covered in the CREG data set, we substitute ethnic fractionalization scores calculated by Alesina

et al. (2003). Nonetheless, we show that our results are robust to using observations from the original CREG data set, i.e., without linear prediction and substitution.

We also include a standardized score that reflects the proportion of the losing parties that accept the results of the national election within three months (*Election Accepted*), which is sourced from the V-Dem data set. Regardless of whether fraud was committed, the decision of opposition parties to contest election outcomes signals their dissatisfaction with the electoral arena or the status quo, which reflects a weakening of the ruling party's control. Furthermore, the presence of an active civil society through which citizens can collectively voice their demands should increase impetus towards democratization (Bunce and Wolchik 2011; Kaya and Bernhard 2013; Newton 2001), and so we also include a five-year moving average of V-Dem's Civil Society Participation Index (*Civil Society*). Lastly, we include the mean regional V-Dem electoral democracy score (*Regional Polyarchy*) to control for neighborhood democratization effects, and a post-Cold War (*Post-Cold War*) dummy variable since electoral authoritarian regimes became much more commonplace during this period. The summary statistics for all variables used in our main models are presented below in Table 5.1.

Oil production per capita and district magnitude could also be included in our models as rent capacity can facilitate more effective cooptation and repression, while modifications to the electoral system could mechanically alter the seat distribution between parties. Moreover, "western leverage" (Levitsky and Way 2006) in the form of foreign aid may push authoritarian regimes towards democratization. However, the use of associated variables would force us to drop a significant number of our observations due to missing data. Thus, while we do not include such variables in our main models, we show that our results are robust to their inclusion in the appendix.

Table 5.1 Summary Statistics for Regime Breakdown Analysis

Variable	N	Mean	SD	Min	Max
Transition (Binary)	940	0.0787	0.2694	0	1
Transition (Trinary)	940	0.1043	0.3803	0	2
EV	940	19.6822	14.727	0	70.8
RPSC	940	1.7259	14.4733	-46.6667	55.8
OPV	940	14.449	12.0644	0	65.9
OPV-A	940	10.3119	10.7789	0	55.5
OPV-B	940	4.1371	4.6303	0	22.95
Regime Age	940	14.483	10.477	1	59
Years Since Election	940	1.6713	1.4723	0	8
ENP (ln)	940	0.5986	0.4064	1	2.0148
GDP per Capita (ln)	916	8.3997	1.0281	6.4791	11.1332
GDP Growth	916	0.0299	0.0464	-0.1668	0.3451
Territory Control	940	91.7064	8.3743	48	100
EF	940	0.4775	0.2723	0.0001	0.8833
Election Accepted	940	-0.6904	1.172	-3.325	1.728
Civil Society	940	0.4615	0.1955	0.069	0.914
Regional Polyarchy	940	0.3444	0.1221	0.1256	0.721
Post-Cold War	940	0.6734	0.4692	0	1

Results

Table 5.2 presents the results of the logistic (Model 1) and multinomial logistic (Model 2) regressions using system-level electoral volatility as the key independent variable. The remaining results presented in Tables 5.3, 5.4, and 5.5 use our disaggregated measures of electoral volatility. Given that estimates of the control variables are generally similar across the board, only Table 5.2 reports the full results, and the results for the control variables in Table 5.3, 5.4, and 5.5 are presented in Appendix D.

Table 5.2 Effects of Electoral Volatility on Regime Breakdown

Model	(1)	(2)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
EV	0.0137	-0.0025	0.0524**	0.0549**
	(0.0119)	(0.0122)	(0.0239)	(0.0262)
Regime Age	-0.2619*	-0.5421***	0.3868	0.9289***
	(0.1509)	(0.1668)	(0.2543)	(0.3134)
Years Since Election	0.1392	0.3468***	-0.3373	-0.6841***
	(0.1008)	(0.1215)	(0.2214)	(0.2544)
ENP (ln)	0.3357	0.6271	-0.2220	-0.8491
	(0.4300)	(0.4883)	(0.7093)	(0.8174)
GDP per capita (ln)	-0.3030*	-0.4308*	-0.0993	0.3315
	(0.1824)	(0.2294)	(0.3621)	(0.4343)
GDP Growth	-2.9421	-6.0545	2.2353	8.2898
	(3.7142)	(4.0032)	(5.9220)	(6.5171)
Territory Control	-0.0123	-0.0158	0.0183	0.0341
	(0.0124)	(0.0144)	(0.0215)	(0.0260)
EF	-0.7928	-1.0713*	0.1518	1.2231
	(0.5417)	(0.6240)	(0.9697)	(1.0866)
Election Accepted	0.3705**	0.2342	0.9447***	0.7106**
	(0.1544)	(0.1618)	(0.3154)	(0.3339)
Civil Society	1.7353**	0.8368	4.4984**	3.6616*
	(0.8396)	(1.0301)	(1.7472)	(2.0656)
Regional Polyarchy	3.8977***	1.8759	7.7837***	5.9078**
	(1.2400)	(1.6318)	(2.1496)	(2.7213)
Post-Cold War	-0.6218*	-0.5946	-0.7807	-0.1861
	(0.3663)	(0.4577)	(0.6849)	(0.8803)
Constant	0.1159	3.0119	-11.4722**	-14.4840***
	(2.2935)	(2.8861)	(4.4753)	(5.5543)
Observations	916		916	
Pseudo R^2	0.1349		0.1895	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

As expected, the results of Model 1 indicate that system-level electoral volatility does not seem to be associated with regime breakdown in general.[14] However, Model 2 shows that the

[14] As for the control variables, competitive authoritarian regimes are less likely to be replaced by another authoritarian regime as they become older, GDP per capita is higher, and when ethnic fractionalization is greater. Authoritarian replacement becomes more likely while democratization becomes less likely as more time passes since the last election. Democratization becomes more likely when the opposition accepts the most recent election results, there is a vibrant civil society, and when surrounding countries are more democratic.

association between regime stability and electoral volatility is more nuanced. As with democracies, competitive authoritarian regimes may be more vulnerable when party systems are under-institutionalized, though this figures strongly in cases of democratic transition and not authoritarian replacement.

Table 5.3 Effects of Ruling Party Seat Change and Opposition Party Volatility on Regime Breakdown

Model	(3)	(4)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0100	0.0107	0.0037	-0.0069
	(0.0099)	(0.0111)	(0.0185)	(0.0197)
OPV	0.0180	0.0016	0.0592*	0.0576*
	(0.0148)	(0.0145)	(0.0316)	(0.0323)
Observations	916		916	
Pseudo R^2	0.1382		0.1893	

Note: results report country-clustered standard errors. Full results are presented in Table D.1 in the appendix.
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table 5.4 Effects of Ruling Party Seat Change and Opposition Party Type-A and Type-B Volatility on Regime Breakdown

Model	(5)	(6)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0089	0.0126	-0.0072	-0.0198
	(0.0101)	(0.0113)	(0.0211)	(0.0225)
OPV-A	0.0170	0.0044	0.0623*	0.0579
	(0.0151)	(0.0140)	(0.0362)	(0.0368)
OPV-B	0.0327	-0.0281	0.1619***	0.1900***
	(0.0318)	(0.0411)	(0.0484)	(0.0620)
Observations	916		916	
Pseudo R^2	0.1387		0.1964	

Note: results report country-clustered standard errors. Full results are presented in Table D.2 in the appendix.
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table 5.3 replaces system-level electoral volatility with ruling party seat change and opposition party volatility, and we further distinguish between Type-A and Type-B opposition party volatility in Table 5.4. The results suggest that ruling party seat change does not seem to be

linked to any form of regime breakdown, and while opposition party Type-A volatility achieves statistical significance in Model 6 and in several of our other models, our robustness checks reveal that this outcome can be sensitive to model specification and/or dropping influential cases. Our main (and robust) finding is that opposition party Type-B volatility is associated with a higher likelihood of democratization (Model 6, Table 5.4). This aligns with our argument that the ability of the ruling party to manage key opposition parties and supporters through elections is particularly important for their survival, and this pattern runs entirely counter to understandings of electoral volatility in democracies, in which Type-A volatility is thought to be more detrimental to regime stability than Type-B volatility.

To examine whether opposition party Type-B volatility is more dangerous for ruling parties when they suffer electoral setbacks, we re-estimate the models in Table 5.4 adding an interaction term between *RPSC* and opposition party *OPV-B*.[15] Estimates of the coefficients of interest are presented in Table 5.5.

Table 5.5 Re-estimating Table 5.4 including an Interaction Term

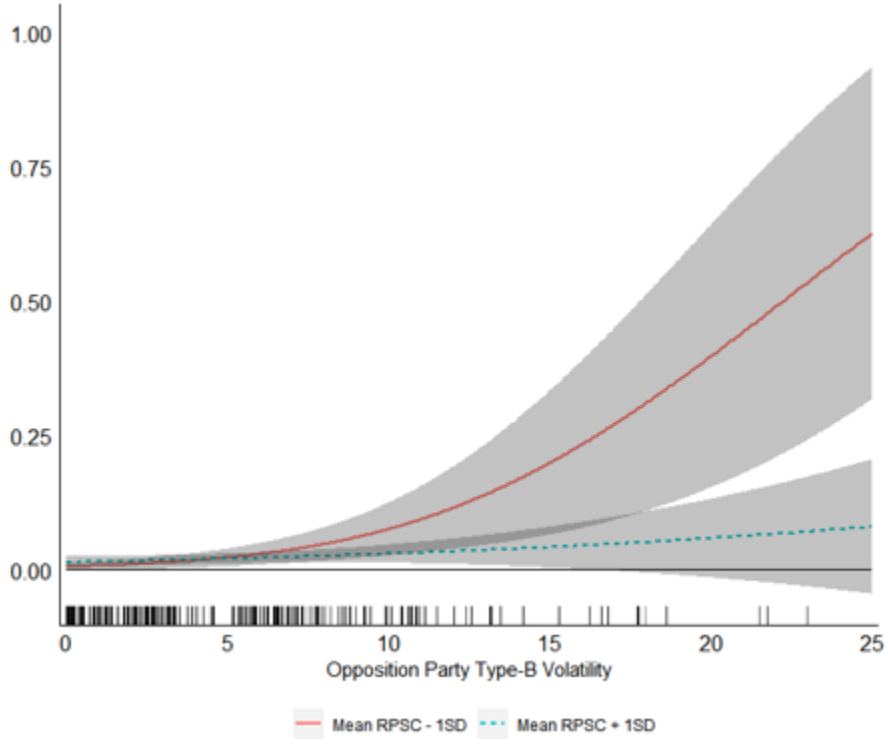
Model	(7)	(8)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0236*	0.0138	0.0350	0.0212
	(0.0125)	(0.0122)	(0.0287)	(0.0303)
OPV-A	0.0174	0.0043	0.0726*	0.0683*
	(0.0152)	(0.0140)	(0.0373)	(0.0377)
OPV-B	0.0461	-0.0259	0.2070***	0.2329***
	(0.0341)	(0.0437)	(0.0647)	(0.0771)
RPSC × *OPV-B*	-0.0029**	-0.0002	-0.0076***	-0.0073**
	(0.0011)	(0.0016)	(0.0025)	(0.0032)
Observations	916		916	
Pseudo R^2	0.1458		0.2106	

Note: results report country-clustered standard errors. Full results are presented in Table D.3 in the appendix.
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

[15] Interactions between ruling party seat change and opposition party Type-A volatility do not generate any robust and substantively meaningful results. As such, we do not include the interactions in our analysis.

To facilitate interpretation of the interaction, we plot the predicted probability of democratic transition along with 90 percent confidence intervals across the range of observed *OPV-B* values when values of *RPSC* are held at ±1 standard deviation from the mean of *RPSC* (around -13 and 16), and other variables are held their means. The plot is shown in Figure 5.3.

Figure 5.3 Predicted Probability of Democratization (Table 5.5 Model 8)



The likelihood of democratic transition is largely unaffected by increased Type-B opposition volatility when the ruling party improves on its past electoral performance. However, when the ruling party loses a relatively significant share of seats and Type-B opposition volatility begins to exceed its mean value (4.11), the predicted probability of regime breakdown via democratization begins to grow substantially, and when it hits the maximum value in our sample (22.95), the predicted probability of democratic transition becomes quite large (around 0.53). Such electoral dynamics align with the *conceding-to-thrive* scenario described by Slater and Wong (2013), in which ruling parties accept democratization when they face "ominous setbacks signaling

that they have passed their apex of domination," and turn their attention from maintaining an authoritarian collusive equilibrium to leveraging their political and resource advantages to win democratic elections.

Robustness Checks

We conduct several robustness checks, which are presented in Appendix D, to address concerns that our results might be driven by omitted variable bias or influential cases. For parsimony, we focus on Models 7 and 8 presented in Table 5.5, and specifically on the coefficient estimates of *RPSC*, *OPV-B*, and their interaction given that they are the strongest predictors of the likelihood of regime failure.

In Table D.4, we include oil production per capita as a measure of rent capacity using data from Ross and Mahdavi (2015) supplemented by Wimmer and Min (2006), although this reduces our sample by 129 observations. In Table D.5, we add a variable that measures the change in district magnitude across two consecutive elections since volatility in seat shares may also be driven by institutional changes. We use district magnitude data from the Database of Political Institutions (Cruz, Keefer, and Scartascini 2018), though the inclusion of the variable causes us to lose around a third of our observations. In Table D.6, we account for Official Development Assistance (ODA), or foreign aid, that countries receive from the Development Assistance Committee—which is principally composed of developed democracies—to capture the extent to which incumbents are exposed to external pressure for democratization, i.e., the degree of "western leverage" (Levitsky and Way 2006). The data is available from the OECD (2021), though only from 1960 onwards and thus we lose 108 observations from our sample. In Table D.7, we use the original ethnic fractionalization scores calculated from the CREG data set, i.e., without linear

prediction and substitution. This drops around a fifth of our observations. In Table D.8, we drop censored regimes that were still in power as of 2018, which leaves us with around 60 percent of our sample. As shown in the appendices, the estimated relationships between *RPSC*, *OPV-B*, and the probability of democratization remain robust and statistically significant, although a few estimates become noisier due to reduced sample sizes.

Adding all the control variables to our model and using just the original CREG-based ethnic fractionalization scores would cause us to lose more than half of our sample. As such, we re-estimate this full model after using Multiple Imputation by Chained Equations (MICE) to impute missing values based on observed values of our variables. We impute 10 complete data sets and present the pooled estimates in Table D.9. The results remain robust.

Lastly, there may be concerns that our results could be driven by a single influential regime. To address these concerns, we re-estimate Model 8 in Table 5 dropping one country at a time. This presents a more challenging test of robustness since more than one regime may be dropped when a country is excluded from the sample. As shown in Table D.10, our results are not driven by one influential case.

5.5 Conclusion

The collapse of many conventional authoritarian regimes over the past several decades has been accompanied by the rise of authoritarian regimes that hold competitive multiparty elections. The literature argues that the holding of elections was a strategic move designed to enhance the viability of authoritarianism in the face of a global surge in democratization. While the empirical evidence in support of this is at best mixed, we argue that the success of electoral authoritarian regimes depends crucially on the ability of ruling parties to legitimize and extend their rule by effectively

managing elections and the opposition. We adapt the concept of party system institutionalization from its use in the study democracies to capture the specificities of electoral competition under authoritarianism. Rather than focusing on whether competitive elections fortify or undermine authoritarian rule, we explain regime durability/vulnerability as a product of the skills of the authoritarian incumbent to resolve electoral uncertainty and establish an institutionalized party system.

To test our claim, we explore the relationship between electoral volatility, the most commonly used measure of party system institutionalization, and the survival of competitive authoritarian regimes. Because elections in competitive authoritarian regimes revolve around the ruling party and thus follow a different logic than democracies, we examine both ruling party seat change and opposition party volatility. We find evidence that the ability of the ruling party to control electoral outcomes by maintaining a collusive equilibrium with the opposition is critical for regime survival. Moreover, the consequences of party system institutionalization for regime stability in competitive authoritarian regimes contrast with those in democracies, as the results show a robust association between Type-B volatility (but not Type-A volatility) and regime breakdown via democratization. Since measures of electoral volatility tend to be noisy (Casal Bértoa, Deegan-Krause, and Haughton. 2017), the fact that our analyses capture significant and robust associations lends evidence to our argument that electoral outcomes do provide meaningful information about the survival and breakdown of ruling parties in competitive authoritarian regimes.

The findings of this chapter show that an increased focus on the institutionalization of party systems in authoritarian contexts is warranted, and corroborate existing arguments that elections can pave the way toward democratization in competitive authoritarian regimes. We show that the

ability of the incumbent to manage elections holds one of the keys to success or failure. The fact that our findings on breakdown seem to be driven by democratization more than authoritarian replacement is a reminder that the conditions under which the latter occurs requires more study. But we can say that the ability of the incumbent to manage the electoral sphere does not seem to play are large role in neo-autocratization.

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Appendix A

Table A.1 Full Results of Table 2.2

Model	(1)	(2)
DV	*Log Subsidy per Capita (Million Won)*	
DV (t-1)	0.6461***	0.6465***
	(0.0181)	(0.0182)
Opp	-0.0221	-0.0361*
	(0.0189)	(0.0208)
× *Majority*	-0.0662***	-0.0467**
	(0.0199)	(0.0209)
× *Pre-Leg*		0.0545
		(0.0407)
× *Majority* × *Pre-Leg*		-0.0938**
		(0.0453)
Core	-0.0814***	-0.0705***
	(0.0218)	(0.0234)
× *Majority*	0.1186***	0.1150***
	(0.0252)	(0.0267)
× *Pre-Leg*		-0.0580
		(0.0424)
× *Majority* × *Pre-Leg*		0.0228
		(0.0476)
Majority	0.0116	0.0070
	(0.0162)	(0.0174)
Pre-Leg		-0.0480
		(0.0390)
Majority × *Pre-Leg*		0.0250
		(0.0413)
Fiscal Independence (ln)	-0.3823***	-0.3866***
	(0.0307)	(0.0306)
Percentage of Young Pop (ln)	0.6375***	0.6298***
	(0.0592)	(0.0586)
Percentage of Old Pop (ln)	0.4922***	0.4859***
	(0.0378)	(0.0378)
Budget Committee Chair	0.0329	0.0305
	(0.0494)	(0.0478)
Budget Committee Member	-0.0139	-0.0146*
	(0.0085)	(0.0086)
Seniority	0.0009	0.0005
	(0.0034)	(0.0034)
Time	0.0721***	0.0725***
	(0.0046)	(0.0047)
Time × *Time*	-0.0013***	-0.0013***
	(0.0001)	(0.0001)
Constant	0.7357***	0.7133***
	(0.1432)	(0.1419)
Observations	6720	6720
Arellano-Bond Test for AR(2)	0.206	0.248
Hansen Test	0.881	0.662

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table A.2 Re-estimating Table 2.2 with Different Cut-off Points (0.15 and 0.85) for the *CSO* Variable

Model	(1)	(2)
DV	*Log Subsidy per Capita (Million Won)*	
DV (t-1)	0.6501***	0.6482***
	(0.0182)	(0.0182)
Opp	0.0127	-0.0248
	(0.0160)	(0.0179)
× *Majority*	-0.0877***	-0.0453
	(0.0181)	(0.0191)
× *Pre-Leg*		0.1494***
		(0.0330)
× *Majority* × *Pre-Leg*		-0.1940***
		(0.0414)
Core	-0.0334	-0.0358
	(0.0217)	(0.0230)
× *Majority*	0.0885***	0.0997***
	(0.0243)	(0.0264)
× *Pre-Leg*		0.0095
		(0.0354)
× *Majority* × *Pre-Leg*		-0.0491
		(0.0421)
Majority	0.0332***	0.0193
	(0.0111)	(0.0125)
Pre-Leg		-0.0976***
		(0.0270)
Majority × *Pre-Leg*		0.0718**
		(0.0303)
Fiscal Independence (ln)	-0.3782***	-0.3856***
	(0.0313)	(0.0312)
Percentage of Young Pop (ln)	0.6242***	0.6199***
	(0.0594)	(0.0592)
Percentage of Old Pop (ln)	0.4795***	0.4760***
	(0.0381)	(0.0383)
Budget Committee Chair	0.0284	0.0289
	(0.0501)	(0.0487)
Budget Committee Member	-0.0143*	-0.0152*
	(0.0086)	(0.0086)
Seniority	-0.0003	-0.0010
	(0.0034)	(0.0034)
Time	0.0709***	0.0720***
	(0.0045)	(0.0047)
Time × *Time*	-0.0013***	-0.0013***
	(0.0001)	(0.0001)
Constant	0.6744***	0.6628***
	(0.1426)	(0.1422)
Observations	6720	6720
Arellano-Bond Test for AR(2)	0.225	0.236
Hansen Test	0.915	0.773

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Figure A.1 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support and Majority Status (Table A.2 Model 1)

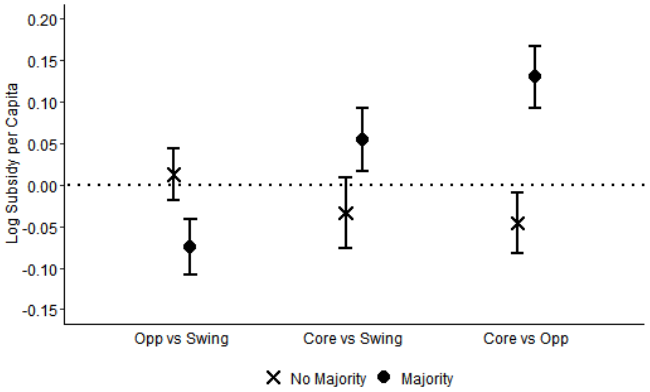


Figure A.2 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Off-Election Years (Table A.2 Model 2)

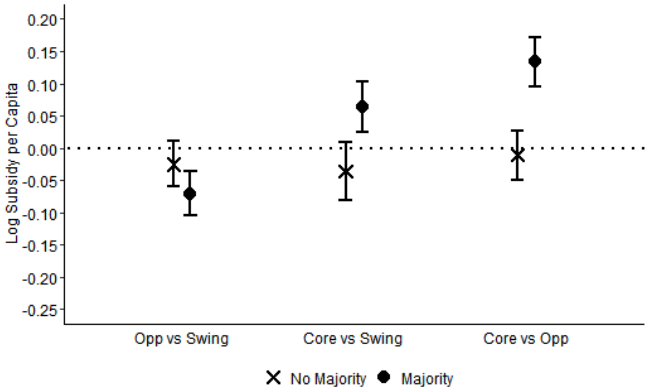


Figure A.3 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Pre-Election Years (Table A.2 Model 2)

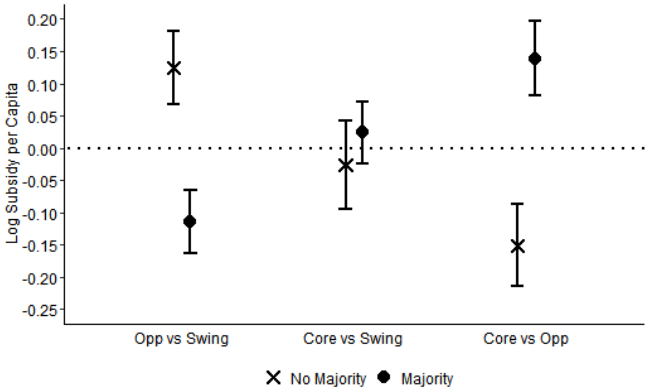


Table A.3 Re-estimating Table 2.2 with Different Cut-off Points (0.35 and 0.65) for the *CSO* Variable

Model	(1)	(2)
DV	*Log Subsidy per Capita (Million Won)*	
DV (t-1)	0.6461***	0.6429***
	(0.0185)	(0.0184)
Opp	-0.0140	-0.0473**
	(0.0201)	(0.0210)
× *Majority*	0.0051	0.0521**
	(0.0222)	(0.0223)
× *Pre-Leg*		0.1837***
		(0.0441)
× *Majority* × *Pre-Leg*		-0.2744***
		(0.0478)
Core	-0.0643***	-0.0744***
	(0.0230)	(0.0240)
× *Majority*	0.1412***	0.1661***
	(0.0263)	(0.0279)
× *Pre-Leg*		0.0919
		(0.0463)
× *Majority* × *Pre-Leg*		-0.1711***
		(0.0518)
Majority	-0.0241	-0.0526***
	(0.0195)	(0.0204)
Pre-Leg		-0.1680***
		(0.0441)
Majority × *Pre-Leg*		0.1899***
		(0.0482)
Fiscal Independence (ln)	-0.3752***	-0.3816***
	(0.0314)	(0.0311)
Percentage of Young Pop (ln)	0.6329***	0.6331***
	(0.0606)	(0.0606)
Percentage of Old Pop (ln)	0.4891***	0.4901***
	(0.0390)	(0.0392)
Budget Committee Chair	0.0343	0.0321
	(0.0490)	(0.0470)
Budget Committee Member	-0.0117	-0.0122
	(0.0085)	(0.0086)
Seniority	0.0005	-0.0001
	(0.0034)	(0.0034)
Time	0.0713***	0.0736***
	(0.0047)	(0.0049)
Time × *Time*	-0.0013***	-0.0014***
	(0.0001)	(0.0001)
Constant	0.7302***	0.7316***
	(0.1471)	(0.1473)
Observations	6720	6720
Arellano-Bond Test for AR(2)	0.223	0.425
Hansen Test	0.719	0.438

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Figure A.4 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support and Majority Status (Table A.3 Model 1)

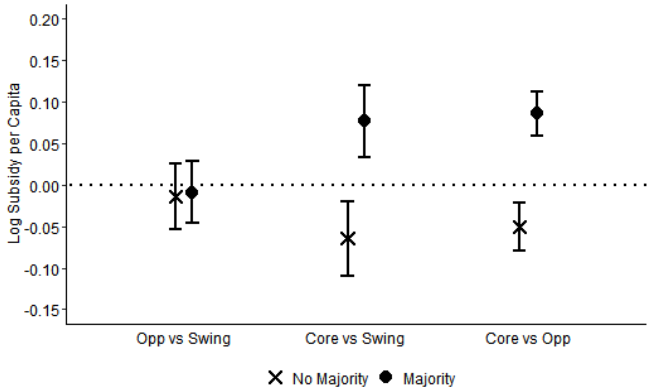


Figure A.5 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Off-Election Years (Table A.3 Model 2)

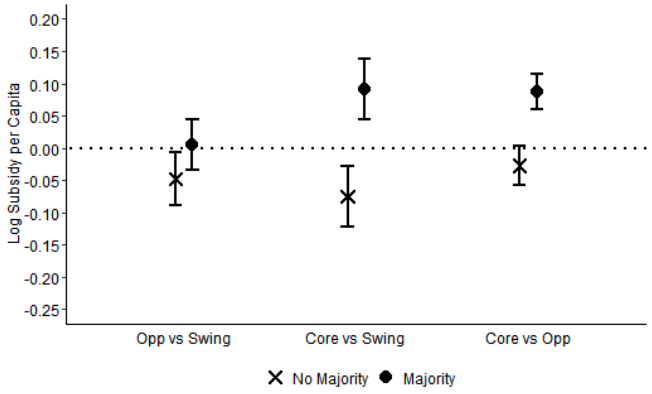


Figure A.6 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Pre-Election Years (Table A.3 Model 2)

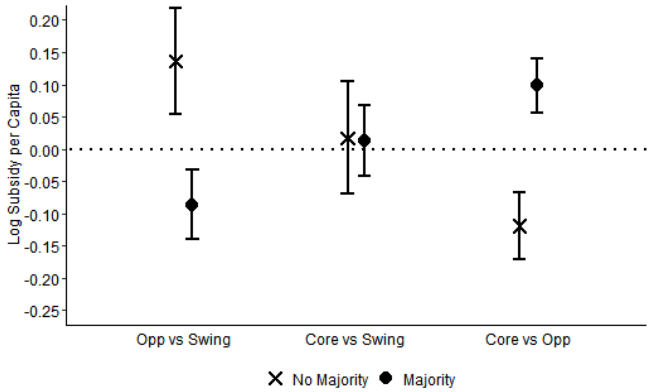


Table A.4 Re-estimating Table 2.2 after Re-calculating the *CSO* Variable with District-Level Data

Model	(1)	(2)
DV	*Log Subsidy per Capita (Million Won)*	
DV (t-1)	0.6503***	0.6500***
	(0.0177)	(0.0177)
Opp	-0.0110	-0.0268
	(0.0199)	(0.0215)
× *Majority*	-0.0756***	-0.0534**
	(0.0214)	(0.0227)
× *Pre-Leg*		0.0659*
		(0.0368)
× *Majority* × *Pre-Leg*		0.0408
		(0.0358)
Core	-0.0732***	-0.0651***
	(0.0226)	(0.0237)
× *Majority*	0.1253***	0.1252***
	(0.0259)	(0.0269)
× *Pre-Leg*		-0.0415
		(0.0368)
× *Majority* × *Pre-Leg*		-0.1113**
		(0.0455)
Majority	0.0126	0.0056
	(0.0174)	(0.0182)
Pre-Leg		-0.0600*
		(0.0319)
Majority × *Pre-Leg*		
Fiscal Independence (ln)	-0.3803***	-0.3854***
	(0.0308)	(0.0307)
Percentage of Young Pop (ln)	0.6360***	0.6292***
	(0.0582)	(0.0576)
Percentage of Old Pop (ln)	0.4848***	0.4791***
	(0.0368)	(0.0367)
Budget Committee Chair	0.0364	0.0325
	(0.0489)	(0.0471)
Budget Committee Member	-0.0146*	-0.0157*
	(0.0085)	(0.0086)
Seniority	0.0013	0.0009
	(0.0033)	(0.0034)
Time	0.0710***	0.0717***
	(0.0045)	(0.0046)
Time × *Time*	-0.0013***	-0.0013***
	(0.0001)	(0.0001)
Constant	0.7239***	0.7029***
	(0.1400)	(0.1384)
Observations	6720	6720
Arellano-Bond Test for AR(2)	0.194	0.236
Hansen Test	0.880	0.651

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Figure A.7 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support and Majority Status (Table A.4 Model 1)

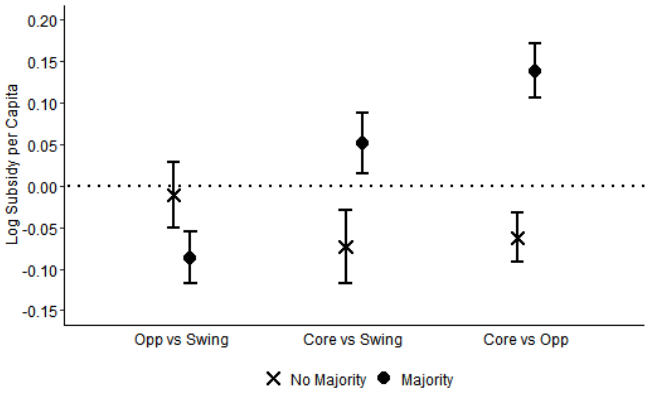


Figure A.8 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Off-Election Years (Table A.4 Model 2)

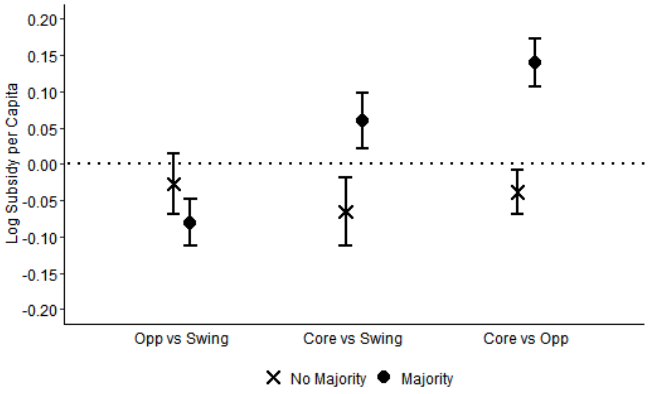


Figure A.9 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Pre-Election Years (Table A.4 Model 2)

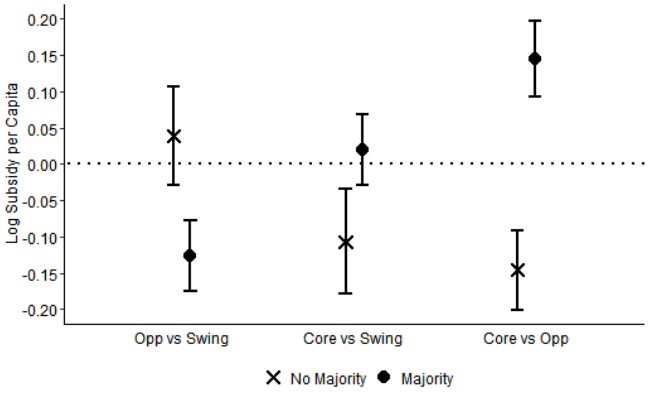


Table A.5 Re-estimating Table 2.2 after Re-calculating the *CSO* Variable using the Past Four Elections

Model	(1)	(2)
DV	*Log Subsidy per Capita (Million Won)*	
DV (t-1)	0.6522***	0.6524***
	(0.0183)	(0.0184)
Opp	-0.0141	-0.0250
	(0.0181)	(0.0199)
× *Majority*	-0.0537**	-0.0402*
	(0.0224)	(0.0236)
× *Pre-Leg*		0.0426
		(0.0453)
× *Majority* × *Pre-Leg*		-0.0610
		(0.0510)
Core	-0.0587***	-0.0457***
	(0.0207)	(0.0219)
× *Majority*	0.0758***	0.0674**
	(0.0265)	(0.0283)
× *Pre-Leg*		-0.0654
		(0.0454)
× *Majority* × *Pre-Leg*		0.0426
		(0.0530)
Majority	0.0252	0.0241
	(0.0192)	(0.0205)
Pre-Leg		-0.0369
		(0.0438)
Majority × *Pre-Leg*		0.0091
		(0.0493)
Fiscal Independence (ln)	-0.3731***	-0.3768***
	(0.0307)	(0.0305)
Percentage of Young Pop (ln)	0.6213***	0.6142***
	(0.0583)	(0.0578)
Percentage of Old Pop (ln)	0.4795***	0.4738***
	(0.0377)	(0.0377)
Budget Committee Chair	0.0439	0.0403
	(0.0494)	(0.0479)
Budget Committee Member	-0.0142*	-0.0149*
	(0.0085)	(0.0086)
Seniority	0.0011	0.0007
	(0.0034)	(0.0034)
Time	0.0712***	0.0716***
	(0.0046)	(0.0048)
Time × *Time*	-0.0013***	-0.0013***
	(0.0001)	(0.0001)
Constant	0.6962***	0.6747***
	(0.1419)	(0.1402)
Observations	6720	6720
Arellano-Bond Test for AR(2)	0.212	0.302
Hansen Test	0.862	0.662

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Figure A.10 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support and Majority Status (Table A.5 Model 1)

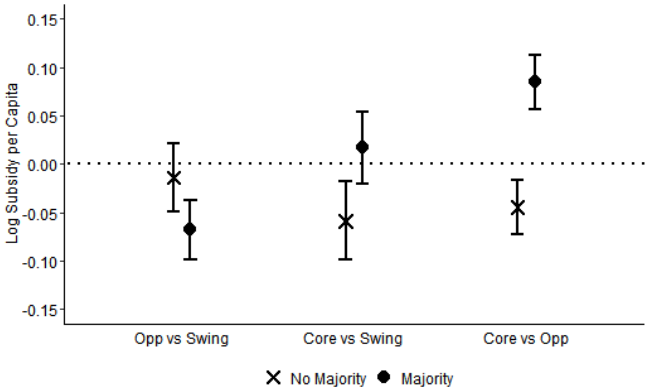


Figure A.11 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Off-Election Years (Table A.5 Model 2)

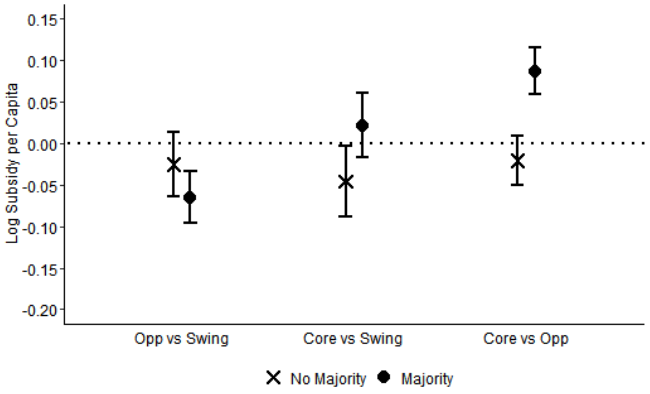


Figure A.12 Predicted Marginal Difference in Log Subsidy per Capita conditional on Support Status and Majority Status during Pre-Election Years (Table A.5 Model 2)

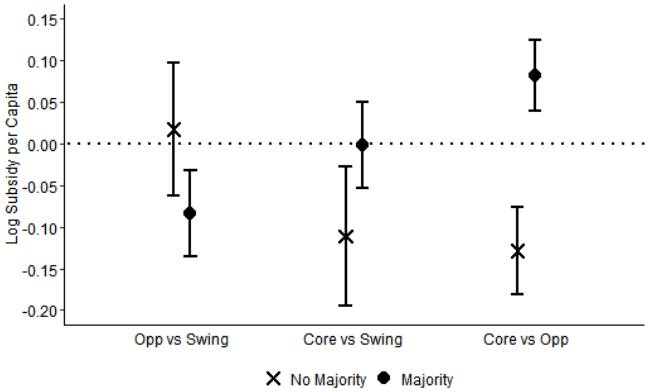


Table A.6 Re-estimating Table 2.2 using Vote Shares to Measure Support Status

Model	(1)	(2)
DV	*Log Subsidy per Capita (Million Won)*	
DV (t-1)	0.6555***	0.6504***
	(0.0195)	(0.0193)
Vote Share	0.3367**	0.9916***
	(0.1361)	(0.1531)
× *Majority*	0.3515	-0.4343**
	(0.2306)	(0.2173)
× *Pre-Leg*		-2.2498***
		(0.3748)
× *Majority* × *Pre-Leg*		2.8652***
		(0.4797)
Vote Share × *Vote Share*	-0.5968***	-1.3235***
	(0.1841)	(0.2165)
× *Majority*	-0.2440	0.6607**
	(0.3067)	(0.2988)
× *Pre-Leg*		2.5173***
		(0.4835)
× *Majority* × *Pre-Leg*		-3.2988***
		(0.6647)
Majority	-0.0597*	0.0802**
	(0.0349)	(0.0326)
Pre-Leg		0.3413***
		(0.0562)
Majority × *Pre-Leg*		-0.4813***
		(0.0658)
Fiscal Independence (ln)	-0.3838***	-0.3961***
	(0.0311)	(0.0314)
Percentage of Young Pop (ln)	0.6045***	0.6117***
	(0.0620)	(0.0622)
Percentage of Old Pop (ln)	0.4689***	0.4703***
	(0.0397)	(0.0398)
Budget Committee Chair	0.0457	0.0430
	(0.0484)	(0.0485)
Budget Committee Member	-0.0141	-0.0143
	(0.0086)	(0.0088)
Seniority	0.0016	0.0009
	(0.0035)	(0.0035)
Time	0.0718***	0.0748***
	(0.0046)	(0.0049)
Time × *Time*	-0.0014***	-0.0014***
	(0.0001)	(0.0001)
Constant	0.5923***	0.4524***
	(0.1569)	(0.1597)
Observations	6720	6720
Arellano-Bond Test for AR(2)	0.277	0.834
Hansen Test	0.423	0.222

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

The two vertical black lines represent the 5th and 95th percentile of observed values of vote shares. The vertical red line indicates the maximum predicted log subsidy per capita within this range, i.e., excluding values for which there are relatively few or no observations.

Figure A.13 Predicted Log Subsidy per Capita over Vote Shares conditional on Majority Status (Table A.6 Model 1)

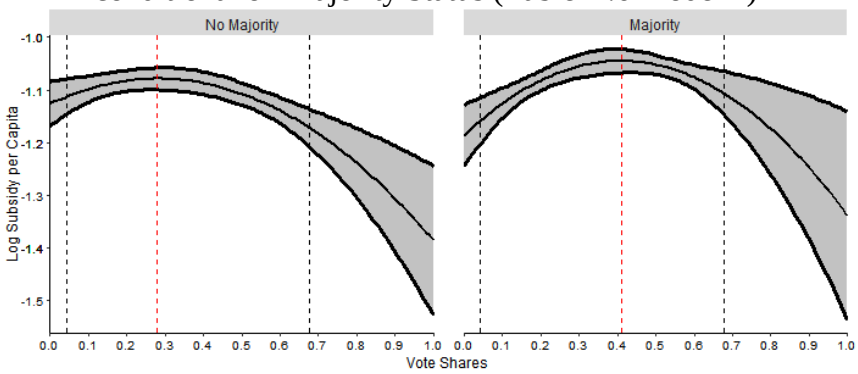


Figure A.14 Predicted Log Subsidy per Capita over Vote Shares conditional on Majority Status during Off-Election Years (Table A.6 Model 2)

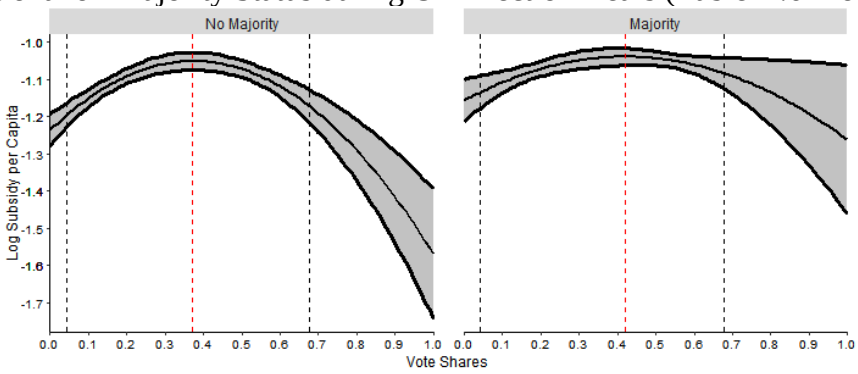


Figure A.15 Predicted Log Subsidy per Capita over Vote Shares conditional on Majority Status during Pre-Election Years (Table A.6 Model 2)

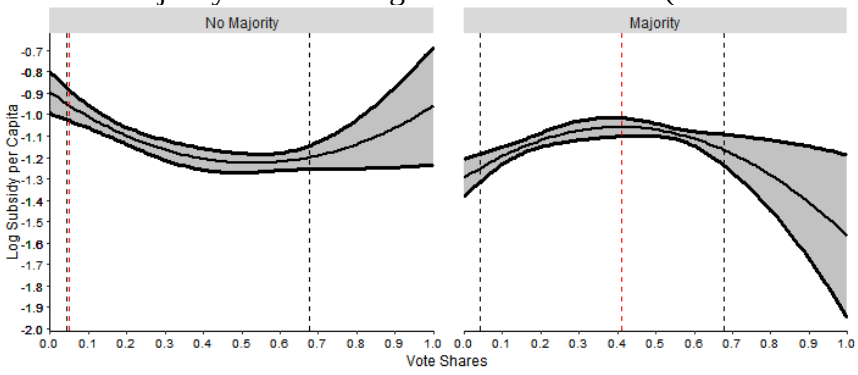


Table A.7 Re-estimating Table 2.2 using Vote Margins to Measure Support Status

Model	(1)	(2)
DV	*Log Subsidy per Capita (Million Won)*	
DV (t-1)	0.6369***	0.6313***
	(0.0202)	(0.0204)
Vote Margins	-0.0493**	-0.0128
	(0.0236)	(0.0257)
× *Majority*	0.0690*	0.0421
	(0.0361)	(0.0364)
× *Pre-Leg*		-0.1704***
		(0.0492)
× *Majority* × *Pre-Leg*		0.1333**
		(0.0626)
Vote Margins × *Vote Margins*	-0.3931***	-0.5603***
	(0.0928)	(0.1061)
× *Majority*	0.2801**	0.5491***
	(0.1103)	(0.1170)
× *Pre-Leg*		0.7993***
		(0.2112)
× *Majority* × *Pre-Leg*		-1.3747***
		(0.2634)
Majority	0.0064	-0.0175
	(0.0126)	(0.0130)
Pre-Leg		-0.1282***
		(0.0300)
Majority × *Pre-Leg*		0.1427***
		(0.0366)
Fiscal Independence (ln)	-0.3811***	-0.3911***
	(0.0311)	(0.0314)
Percentage of Young Pop (ln)	0.6390***	0.6475***
	(0.0643)	(0.0648)
Percentage of Old Pop (ln)	0.5155***	0.5197***
	(0.0399)	(0.0405)
Budget Committee Chair	0.0482	0.0381
	(0.0490)	(0.0489)
Budget Committee Member	-0.0154*	-0.0183**
	(0.0085)	(0.0088)
Seniority	0.0015	0.0005
	(0.0035)	(0.0036)
Time	0.0720***	0.0740***
	(0.0048)	(0.0051)
Time × *Time*	-0.0013***	-0.0014***
	(0.0001)	(0.0001)
Constant	0.7870***	0.8005***
	(0.1531)	(0.1545)
Observations	6720	6720
Arellano-Bond Test for AR(2)	0.228	0.788
Hansen Test	0.499	0.308

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

The two vertical black lines represent the 5th and 95th percentile of observed values of vote shares. The vertical red line indicates the maximum predicted log subsidy per capita within this range, i.e., excluding values for which there are relatively few or no observations.

Figure A.16 Predicted Log Subsidy per Capita over Vote Margins conditional on Majority Status (Table A.7 Model 1)

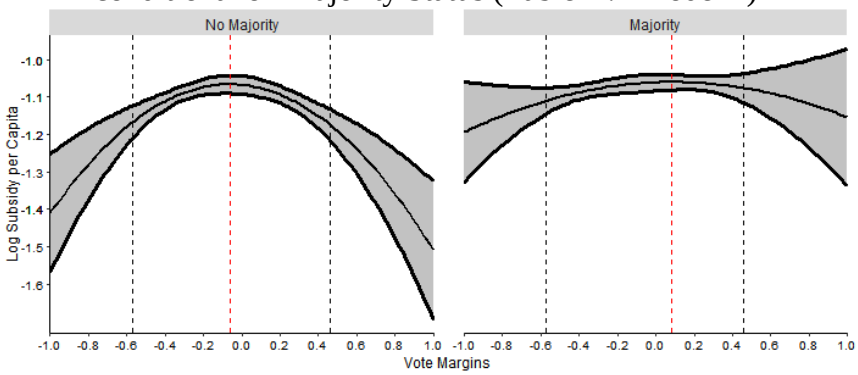


Figure A.17 Predicted Log Subsidy per Capita over Vote Margins conditional on Majority Status during Off-Election Years (Table A.7 Model 2)

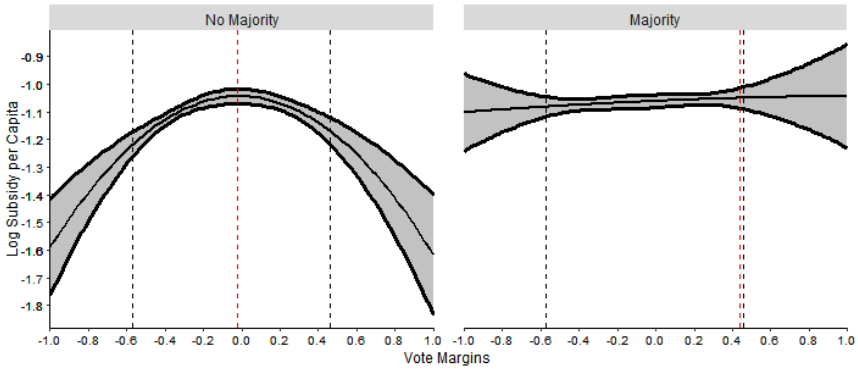
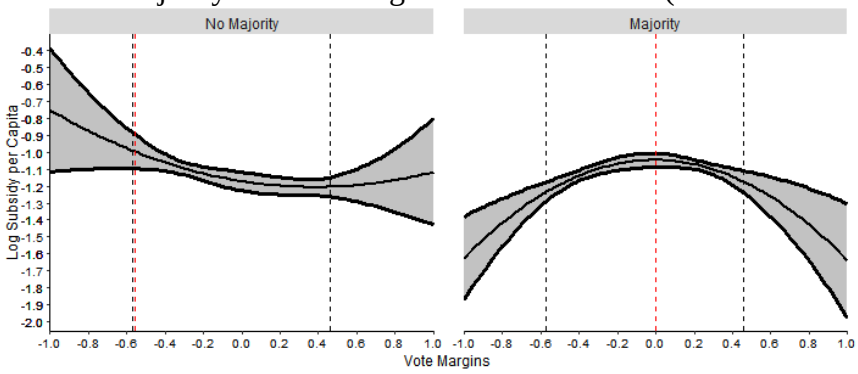


Figure A.18 Predicted Log Subsidy per Capita over Vote Margins conditional on Majority Status during Pre-Election Years (Table A.7 Model 2)



Appendix B

Table B.1 Summary Statistics of the Manifest Indicators

Variable	Mean	SD	Min	Max
ALV	0.6623	0.2381	0	1
AGV	0.4582	0.2835	0	1
MPI	0.9671	0.0535	0.5470	1
PDST	0.7989	0.1559	0.1520	0.9987
PSW	0.9252	0.0808	0.4164	1

Note: the scales of the *ALV*, *AGV*, *MPI*, and *PSW* indicators are reversed so that higher values represent greater levels of party system institutionalization.

Table B.2 Sources for the Partisan Composition Dataset

Source Name	Source
Adam Carr's Election Archive	Carr, Adam. 2020. *Election Archive*. Retrieved from http://psephos.adam-carr.net/
African Elections Database	African Election Database. 2012. *A Database of Election Results in Sub-Saharan Africa*. Retrieved from http://africanelections.tripod.com/
Amorim Neto	Amorim Neto, Octavio. 2006. "The Presidential Calculus: Executive Policy Making and Cabinet Formation in the Americas." *Comparative Political Studies* 39.4: 415-40.
Ariotti and Golder	Ariotti, Margaret H., and Sona N. Golder. 2018. "Partisan Portfolio Allocation in African Democracies." *Comparative Political Studies* 51.3: 341-79.
CLEA	Kollman, Ken, Hicken, Allen, Caramani, Daniele., Backer, David, & Lublin, David. 2019. *Constituency-Level Elections Archive*. Retrieved from http://www.electiondataarchive.org
Comparative Political Data Set	Armingeon, Klaus, Sarah Engler, and Lucas Leemann. 2021. *Supplement to the Comparative Political Data Set – Government Composition 1960-2019*. Zurich: Institute of Political Science, University of Zurich. Retrieved from https://www.cpds-data.org/index.php
CPD	European Representative Democracy Data Archive. 2012. *Comparative Parliamentary Democracy*. Retrieved from https://erdda.org/cpd/data-archive/
CSES	CSES. 2019. *Comparative Study of Electoral Systems*. Retrieved from https://cses.org/
Database of Political Institutions	Cruz, Cesi, Philip Keefer, and Carlos Scartascini. 2018. *The Database of Political Institutions*. Washington: Inter-American Development Bank.
Democratic Electoral Systems	Bormann, Nils-Christian, and Matt Golder. 2013. "Democratic Electoral Systems Around the World, 1945-2011." *Electoral Studies* 32.2: 360-69.
European Election Database	Norwegian Centre for Research Data. 2014. *European Election Database*. Retrieved from https://nsd.no/nsd/english/
IPU Parline	Inter-Parliamentary Union. 2020. *Global Data on National Parliaments*. Retrieved from https://data.ipu.org/
Keesing's World New Archive	Keesings Worldwide. 2018. *Keesing's World News Archive*. Retrieved from http://www.keesings.com/
Lee	Lee, Don S. 2020. *President's Dilemma: Making Sense of Government Formation in Asia*. Unpublished manuscript.
Müller-Rommel et al.	Müller-Rommel, Ferdinand, Katja Fettelschoss, and Philipp Harfst. 2004. "Party Government in Central European Democracies: A Data Collection (1990-2003)." *European Journal of Political Research* 43.6: 869-93.
Nohlen - Africa	Nohlen, Dieter, Michael Krennerish, and Bernhard Thibaut (eds.). 1999. *Elections in Africa: A Data Handbook*. Oxford: Oxford University Press.
Nohlen - Americas	Nohlen, Dieter (ed.). 2005. *Elections in Asia and the Pacific: A Data Handbook*. Oxford: Oxford University Press.

Nohlen - Asia	Nohlen, Dieter, Florian Grotz, and Christof Hartmann (eds.). 2001. *Elections in Asia and the Pacific: A Data Handbook*. Oxford: Oxford University Press.
Nohlen - Europe	Nohlen, Dieter, and Philip Stöver (eds.). 2010. *Elections in Europe: A Data Handbook*. Baden-Baden: Nomos Publishing.
ParlGov	Döring, Holger and Philip Manow. 2019. *Parliaments and Governments Database* (Development version). Retrieved from http://www.parlgov.org/
Presidential Cabinets Project	Martinez-Gallardo, and Marcelo Camerlo. 2018. *Presidential Cabinets Project*. Retrieved from https://www.presidentialcabinets.org/
WhoGoverns	Casal Bértoa, Fernando. 2020. *The Institutionalization of European Party Systems: Explaining Party Competition in 48 Democracies (1948-2017)*. Retrieved from https://whogoverns.eu/
Woldendorp et al.	Woldendorp, Jaap, Hans Keman, and Ian Budge. 2000. *Party Government in 48 Democracies (1945-2008)*. Retrieved from https://fsw.vu.nl/en/departments/political-science-and-public-administration/staff/woldendorp/party-government-data-set/index.aspx

Table B.3 Summary of Posterior Distributions

Parameter	Median	95% Credible Interval
c_{ALV}	0.6622	[0.6541, 0.6703]
c_{AGV}	0.4411	[0.4302, 0.4519]
c_{MPI}	0.9671	[0.9651, 0.9691]
c_{PDST}	0.7988	[0.7935, 0.8042]
c_{PSW}	0.9260	[0.9231, 0.9289]
λ_{ALV}	0.1263	[0.1152, 0.1376]
λ_{AGV}	0.1090	[0.0924, 0.1261]
λ_{MPI}	0.0212	[0.0189, 0.0234]
λ_{PDST}	0.1095	[0.1026, 0.1163]
λ_{PSW}	0.0564	[0.0534, 0.0594]
ϵ_{ALV}	0.2033	[0.1961, 0.2103]
ϵ_{AGV}	0.2669	[0.2587, 0.2752]
ϵ_{MPI}	0.0549	[0.0536, 0.0564]
ϵ_{PDSTT}	0.1137	[0.1083, 0.1193]
ϵ_{PSW}	0.0627	[0.0606, 0.0648]
b_0	-2.2232	[-2.3762, -2.0794]
b_1	-1.1028	[-1.2628, -0.9523]

Note: the scales of the *ALV*, *AGV*, *MPI*, and *PSW* indicators are reversed so that higher values are associated with greater levels of party system institutionalization.

Table B.4 Description of Variables used in the Causes of Party System Institutionalization Analysis

Variable (Source)	Description
GDP growth (Bolt and van Zanden 2020)	Mean growth rate of GDP per capita over the past five years.
DM (Bormann and Golder 2013; Carey and Hix 2011; Coppedge et al. 2020)	Mean district magnitude.
ENP (Author's calculation)	Effective number of legislative parties based on Laasko and Taagepera's (1979) formula.
Executive Strength (Coppedge et al. 2020)	The index is an aggregation of various indicators, which measure the level of systemic concentration of political power in the hands of one individual who resists delegating all but the most trivial decision making tasks" and the extent to which the executive is "free from constraints by other institutions or actors."
Dem Age (ln) (Author's calculation)	Number of years since the inauguration of the democratic regime in a country.
Dem Birth Year (ln) (Author's calculation)	The difference between 2013 and the year that democracy was inaugurated in a country.
EF (Author's calculation; Alesina et al. 2003)	Data on ethnic groups is sourced from the Composition of Religious and Ethnic Groups Project (Cline Center 2017), and the ethnic fractionalization measure is calculated using the Herfindahl index. Alesina et al.'s (2003) measure of ethnic fractionalization is used for countries that are not covered in the CREG data set.
Party Org (Coppedge et al. 2020)	Expert survey respondents are asked the question: "How many political parties for national-level office have permanent organizations?" Possible responses are: 0: No parties. 1: Fewer than half of the parties. 2: About half of the parties. 3: More than half of the parties. 4: All parties. Responses are converted into a standardized score using a Bayesian IRT model.
Party Branch (Coppedge et al. 2020)	Expert survey respondents are asked the question: "How many parties have permanent local party branches?" Possible responses are: 0: None. 1: Fewer than half. 2: About half. 3: More than half. 4: All. Responses are converted into a standardized score using a Bayesian IRT model.
Party Linkage (Coppedge et al. 2020)	Expert survey respondents are asked the question: "Among the major parties, what is the main or most common form of linkage to their constituents?" Possible responses are: 0: Clientelistic. Constituents are rewarded with goods, cash, and/or jobs.

	1: Mixed clientelistic and local collective. 2: Local collective. Constituents are rewarded with local collective goods, e.g., wells, toilets, markets, roads, bridges, and local development. 3: Mixed local collective and policy/programmatic. 4: Policy/programmatic. Constituents respond to a party's positions on national policies, general party programs, and visions for society. Responses are converted into a standardized score using a Bayesian IRT model.
Party Cohesion (Coppedge et al. 2020)	Expert survey respondents are asked the question: "Is it normal for members of the legislature to vote with other members of their party on important bills?" Possible responses are: 0: Not really. Many members are elected as independents and party discipline is very weak. 1: More often than not. Members are more likely to vote with their parties than against them, but defections are common. 2: Mostly. Members vote with their parties most of the time. 3: Yes, absolutely. Members vote with their parties almost all the time. Responses are converted into a standardized score using a Bayesian IRT model.

Table B.5 Summary Statistics for the Causes of Party System Institutionalization Analysis

Variable	N	Mean	SD	Min	Max
PSI Scores	3313	0	0.84	-3.63	1.31
EV	3280	0.76	0.23	0	1
Party Age (ln)	2511	3.46	0.95	0	5.21
Closure	1629	91.36	6.02	55.6	100
MI Avg	3313	0.77	0.11	0.38	0.97
GDP growth	3269	0.03	0.02	-0.1	0.19
DM (ln)	3108	1.5	1.37	0	6.11
ENP (ln)	3313	1.15	0.44	0	2.81
Executive Strength	3313	0.15	0.15	0.01	0.97
Dem Age (ln)	3313	3.55	0.89	1.79	5.35
Dem Birth Year (ln)	3313	3.99	0.78	1.95	5.32
EF	2881	0.32	0.23	0.01	0.86
Party Org	3313	1.73	0.71	-0.51	3.17
Party Branch	3313	1.67	0.75	-0.59	3.33
Party Linkage	3313	1.16	1.31	-2.4	3.37
Party Cohesion	3313	1.09	1.01	-3.21	2.51

Table B.6 Description of Control Variables used in the Causes of Party System Institutionalization Analysis

Variable	Description
Bureaucracy	Expert survey respondents are asked the question: "To what extent are appointment decisions in the state administration based on personal and political connections, as opposed to skills and merit?" Possible responses are: 0: All appointment decisions in the state administration are based on personal or political connections. None are based on skills and merit. 1: Most appointment decisions in the state administration are based on personal or political connections. Only a few are based on skills and merit. 2: Approximately half of the appointment decisions in the state administration are based on personal or political connections. Approximately half are based on skills and merit. 3: Only few of the appointment decisions in the state administration are based on personal or political connections. Most appointment decisions are based on skills and merit. 4: None of the appointment decisions in the state administration are based on personal or political connections. All are based on skills and merit. Responses are converted into a standardized score using a Bayesian IRT model.
Civil Society	Expert survey respondents are asked the question: "Which of these best describes the involvement of people in civil society organizations (CSOs)?" Possible responses are: 0: Most associations are state-sponsored, and although a large number of people may be active in them, their participation is not purely voluntary. 1: Voluntary CSOs exist but few people are active in them. 2: There are many diverse CSOs, but popular involvement is minimal. 3: There are many diverse CSOs and it is considered normal for people to be at least occasionally active in at least one of them. Responses are converted into a standardized score using a Bayesian IRT model.
Judiciary	Expert survey respondents are asked the question: "When the high court in the judicial system is ruling in cases that are salient to the government, how often would you say that it makes decisions that merely reflect government wishes regardless of its sincere view of the legal record?" Possible responses are: 0: Always. 1: Usually. 2: About half of the time. 3: Seldom. 4: Never. Responses are converted into a standardized score using a Bayesian IRT model.
Media	Expert survey respondents are asked the question: "Of the major print and broadcast outlets, how many routinely criticize the government?" Possible responses are: 0: None. 1: Only a few marginal outlets. 2: Some important outlets routinely criticize the government but there are other important outlets that never do. 3: All major media outlets criticize the government at least occasionally. Responses are converted into a standardized score using a Bayesian IRT model.

State	Expert survey respondents are asked the question: "Over what percentage (%) of the territory does the state have effective control?"

Source: Coppedge et al. (2020)

Table B.7 Summary Statistics for the Consequences of Party System Institutionalization Analysis

Variable	N	Mean	SD	Min	Max
PSI Scores	723	-0.04	0.85	-3.56	1.29
EV	719	0.75	0.22	0	1
Party Age (ln)	569	3.45	0.91	0.99	5.15
Closure	345	91.19	6.14	56.43	100
MI Avg	723	0.57	0.1	0.22	0.78
Performance of Democratic Institutions	163	7.39	1.49	3	10
State Effectiveness and Legitimacy	391	-4.81	4.71	-18.67	0
Factionalized Elites	251	-4.69	2.33	-9.45	-0.86
Corruption Perception Index	169	52.91	18.81	20	91
Transparent and Predictable Laws	723	1.89	1.13	-2.24	3.67
Regulatory Quality	409	0.57	0.8	-1.11	2.03
Bureaucracy	696	1.21	0.87	-1.75	2.83
Civil Society	723	1.6	0.85	-0.57	3.18
Judiciary	723	1.45	1	-2.59	3.13
Media	723	1.89	0.78	-0.38	3.4
State	723	95.18	6.9	63.32	100

Table B.8 Full Results of Table 3.4 for PSI Scores

DV	*PDI*	*SEL*	*FE*	*CPI*	*TPL*	*RQ*
PSI Scores	0.35**	1.28***	0.67***	4.26***	0.18***	0.23***
	(0.16)	(0.34)	(0.17)	(1.18)	(0.06)	(0.04)
Bureaucracy	0.21	0.63**	0.41**	7.52***	0.30***	0.27***
	(0.19)	(0.29)	(0.17)	(2.07)	(0.04)	(0.05)
Civil Society	0.10	0.02	0.09	3.20**	0.15***	-0.01
	(0.16)	(0.26)	(0.20)	(1.57)	(0.05)	(0.05)
Judiciary	0.43***	0.57***	0.08	3.96***	0.20***	0.09*
	(0.14)	(0.20)	(0.12)	(1.30)	(0.05)	(0.05)
Media	0.20*	-0.09	0.31***	-1.88	0.18***	0.07**
	(0.12)	(0.21)	(0.12)	(1.17)	(0.05)	(0.03)
State	0.06***	0.16***	0.09***	0.35**	0.02***	0.01
	(0.02)	(0.04)	(0.03)	(0.17)	(0.01)	(0.01)
Constant	1.24	-21.42***	-14.16***	6.29	-1.37*	-0.45
	(1.52)	(3.83)	(2.47)	(15.60)	(0.71)	(0.55)
Observations	156	384	245	166	695	400
Countries	54	87	84	83	95	91
Marginal R^2	0.60	0.52	0.56	0.68	0.65	0.69

Note: parentheses show the standard errors. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table B.9 Standardized Coefficient Estimates of Table B.8

	PDI	*SEL*	*FE*	*CPI*	*TPL*	*RQ*	*Mean*
PSI Scores	0.22	0.26	0.26	0.2	0.14	0.27	0.22
Bureaucracy	0.11	0.12	0.16	0.34	0.23	0.31	0.21
Civil Society	0.04	0	0.03	0.13	0.11	-0.01	0.05
Judiciary	0.29	0.12	0.03	0.21	0.17	0.11	0.16
Media	0.1	-0.02	0.11	-0.08	0.12	0.07	0.05
State	0.29	0.25	0.27	0.13	0.12	0.09	0.19

Table B.10 Full Results of Table 3.4 for PSI Scores (D)

DV	*PDI*	*SEL*	*FE*	*CPI*	*TPL*	*RQ*
PSI Scores (D)	0.23*	0.47**	0.3**	1.92*	0.05	0.08***
	[0.02, 0.43]	[0.13, 0.79]	[0.13, 0.5]	[0.06, 3.9]	[0, 0.11]	[0.03, 0.13]
Bureaucracy	0.24	0.75**	0.52***	8.18***	0.31***	0.28***
	[-0.07, 0.56]	[0.25, 1.21]	[0.22, 0.81]	[4.62, 11.63]	[0.24, 0.38]	[0.19, 0.37]
Civil Society	0.08	0.01	0.06	3.04*	0.14***	-0.02
	[-0.21, 0.32]	[-0.48, 0.41]	[-0.31, 0.38]	[0.29, 5.51]	[0.06, 0.21]	[-0.11, 0.05]
Judiciary	0.45***	0.63***	0.12	4.27***	0.2***	0.1*
	[0.21, 0.66]	[0.32, 0.91]	[-0.09, 0.31]	[2.06, 6.33]	[0.13, 0.27]	[0.01, 0.18]
Media	0.2*	-0.04	0.33***	-1.87	0.19***	0.07**
	[0.01, 0.4]	[-0.39, 0.33]	[0.12, 0.53]	[-3.8, 0.19]	[0.11, 0.27]	[0.02, 0.13]
State	0.07***	0.19***	0.1***	0.41**	0.02***	0.01
	[0.04, 0.09]	[0.12, 0.26]	[0.06, 0.15]	[0.12, 0.72]	[0.01, 0.04]	[0, 0.02]
Constant	0.43	-24.27***	-15.69***	-1.54	-1.8**	-0.93
	[-2.23, 2.97]	[-30.66, -17.87]	[-19.7, -11.82]	[-28.88, 26.3]	[-3.01, -0.72]	[-1.86, 0]
Observations	156	384	245	166	695	400
Countries	54	87	84	83	95	91
Marginal R^2	[0.58, 0.6]	[0.46, 0.5]	[0.54, 0.56]	[0.58, 0.66]	[0.62, 0.64]	[0.62, 0.66]

Note: brackets show the 90% credible intervals. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table B.11 Full Results of Table 3.4 for EV

DV	*PDI*	*SEL*	*FE*	*CPI*	*TPL*	*RQ*
EV	-0.05	0.45	0.63*	-0.03	0.07	0.13**
	(0.34)	(0.50)	(0.35)	(2.76)	(0.07)	(0.07)
Bureaucracy	0.30	0.80***	0.58***	8.61***	0.32***	0.28***
	(0.21)	(0.29)	(0.17)	(2.28)	(0.04)	(0.05)
Civil Society	0.03	0.01	0.04	2.97*	0.14***	-0.03
	(0.15)	(0.27)	(0.22)	(1.69)	(0.05)	(0.05)
Judiciary	0.45***	0.63***	0.12	4.31***	0.20***	0.09
	(0.15)	(0.20)	(0.13)	(1.43)	(0.05)	(0.06)
Media	0.18	-0.02	0.32**	-2.04*	0.19***	0.07**
	(0.12)	(0.23)	(0.12)	(1.19)	(0.05)	(0.04)
State	0.07***	0.19***	0.11***	0.43**	0.02***	0.01*
	(0.02)	(0.04)	(0.02)	(0.18)	(0.01)	(0.01)
Constant	-0.26	-25.12***	-16.49***	-2.92	-1.88***	-1.03*
	(1.66)	(3.76)	(2.40)	(16.67)	(0.73)	(0.57)
Observations	156	383	245	166	692	399
Countries	54	87	84	83	95	91
Marginal R^2	0.58	0.43	0.52	0.58	0.61	0.58

Note: parentheses show the standard errors. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table B.12 Full Results of Table 3.4 for Party Age (ln)

DV	*PDI*	*SEL*	*FE*	*CPI*	*TPL*	*RQ*
Party Age (ln)	-0.13	0.56***	0.02	2.75***	0.02	0.05**
	(0.12)	(0.19)	(0.13)	(0.87)	(0.03)	(0.03)
Bureaucracy	0.30	0.72**	0.60***	8.20***	0.35***	0.27***
	(0.21)	(0.29)	(0.17)	(2.33)	(0.05)	(0.05)
Civil Society	0.05	-0.13	-0.02	2.50	0.19***	-0.04
	(0.15)	(0.28)	(0.23)	(1.63)	(0.06)	(0.05)
Judiciary	0.46***	0.62***	0.12	3.90***	0.21***	0.09*
	(0.15)	(0.20)	(0.13)	(1.48)	(0.05)	(0.06)
Media	0.18	0.04	0.30**	-1.79	0.16***	0.08**
	(0.13)	(0.23)	(0.13)	(1.17)	(0.05)	(0.04)
State	0.07***	0.20***	0.11***	0.44**	0.02**	0.01**
	(0.02)	(0.04)	(0.03)	(0.20)	(0.01)	(0.01)
Constant	0.09	-26.81***	-16.78***	-12.42	-1.10	-1.33**
	(1.68)	(3.76)	(2.40)	(18.57)	(0.74)	(0.60)
Observations	151	379	237	158	551	390
Countries	52	85	81	79	92	88
Marginal R^2	0.59	0.42	0.53	0.61	0.69	0.61

Note: parentheses show the standard errors. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table B.13 Full Results of Table 3.4 for Closure

DV	*PDI*	*SEL*	*FE*	*CPI*	*TPL*	*RQ*
Closure	0.01	0.10**	0.07**	0.42	0.01	0.02***
	(0.02)	(0.04)	(0.03)	(0.31)	(0.01)	(0.01)
Bureaucracy	-0.01	0.18	-0.07	3.21	0.38***	0.15***
	(0.26)	(0.31)	(0.23)	(2.05)	(0.06)	(0.06)
Civil Society	0.16	0.55*	0.53**	8.27***	0.21**	0.10
	(0.20)	(0.33)	(0.27)	(2.88)	(0.09)	(0.06)
Judiciary	0.78***	0.26	0.59***	6.70***	0.10	0.16**
	(0.22)	(0.35)	(0.18)	(1.68)	(0.08)	(0.07)
Media	0.40**	0.19	0.51**	-1.33	0.37***	0.11**
	(0.19)	(0.14)	(0.22)	(2.47)	(0.07)	(0.04)
State	0.07***	0.12***	0.15***	0.07	0.02**	0.00
	(0.01)	(0.04)	(0.02)	(0.14)	(0.01)	(0.01)
Constant	-1.19	-23.71***	-27.44***	-9.12	-2.01	-1.70**
	(2.34)	(5.32)	(3.17)	(30.71)	(1.27)	(0.81)
Observations	53	168	113	74	331	176
Countries	19	37	39	37	39	39
Marginal R^2	0.95	0.95	0.89	0.92	0.92	0.96

Note: parentheses show the standard errors. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table B.14 Full Results of Table 3.4 for MI Avg

DV	*PDI*	*SEL*	*FE*	*CPI*	*TPL*	*RQ*
MI Avg	1.04	2.35*	2.29***	-6.32	0.22	0.34*
	(0.89)	(1.42)	(0.87)	(6.39)	(0.24)	(0.20)
Bureaucracy	0.26	0.75**	0.52***	8.72***	0.31***	0.28***
	(0.20)	(0.30)	(0.18)	(2.23)	(0.04)	(0.05)
Civil Society	0.04	0.02	0.05	2.83*	0.14***	-0.02
	(0.15)	(0.27)	(0.22)	(1.65)	(0.05)	(0.05)
Judiciary	0.46***	0.65***	0.14	4.19***	0.20***	0.09*
	(0.15)	(0.20)	(0.13)	(1.44)	(0.05)	(0.06)
Media	0.18	-0.03	0.30**	-1.97*	0.19***	0.07**
	(0.12)	(0.23)	(0.13)	(1.12)	(0.05)	(0.04)
State	0.07***	0.20***	0.11***	0.42**	0.02***	0.01*
	(0.02)	(0.04)	(0.03)	(0.18)	(0.01)	(0.01)
Constant	-0.67	-26.51***	-17.51***	0.88	-1.98***	-1.26**
	(1.78)	(3.76)	(2.55)	(16.75)	(0.72)	(0.58)
Observations	156	384	245	166	695	400
Countries	54	87	84	83	95	91
Marginal R^2	0.58	0.44	0.54	0.54	0.61	0.60

Note: parentheses show the standard errors. ***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Appendix C

Table C.1 Full Results of Table 4.2

DV	*Public Expenditures*
Public Expenditures (t-1)	0.9670***
	(0.0056)
PSI	0.0030
	(0.0047)
PSN	0.0055
	(0.0039)
PSI × PSN	0.0080**
	(0.0034)
ENP (ln)	0.0041
	(0.0062)
Dem Age (ln)	0.0025
	(0.0045)
Presidentialism	-0.0115*
	(0.0068)
Regional Elections	-0.0020
	(0.0063)
GDPpc (ln)	0.0022
	(0.0050)
Constant	0.0147
	(0.0375)
Observations	3095
Countries	94

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table C.2 Full Results of Table 4.4

DV	*Education Years*	*Infant Mortality*	*Education Equality*	*Health Equality*
DV (t-1)	0.9724***	0.9130***	0.9719***	0.9681***
	(0.0090)	(0.0126)	(0.0150)	(0.0186)
PSI (t-1)	0.1421***	-0.6930***	0.0717**	0.0545***
	(0.0287)	(0.1613)	(0.0325)	(0.0204)
PSN (t-1)	-0.0212**	0.1142	-0.0151	0.0012
	(0.0083)	(0.0800)	(0.0114)	(0.0131)
ENP (ln; t-1)	0.0089	-0.4720*	0.0243	-0.0145
	(0.0159)	(0.2456)	(0.0206)	(0.0271)
Dem Age (ln; t-1)	-0.0352***	0.2581	0.0104	0.0088
	(0.0112)	(0.1987)	(0.0138)	(0.0196)
Presidentialism (t-1)	-0.0377**	-0.3903***	-0.0340*	-0.0208
	(0.0161)	(0.1110)	(0.0197)	(0.0239)
Regional Elections (t-1)	-0.0115	-0.2464	-0.0399**	0.0200
	(0.0156)	(0.1601)	(0.0191)	(0.0215)
GDPpc (ln; t-1)	-0.0335	1.2401***	-0.0491*	-0.0465
	(0.0218)	(0.3415)	(0.0266)	(0.0374)
Constant	1.0275***	-13.3919***	0.5454***	0.5203*
	(0.1763)	(3.2519)	(0.2032)	(0.2685)
Observations	513	513	572	572
Countries	71	90	91	91

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table C.3 Re-estimating Table 4.2 with PSI Measurement Uncertainty

DV	*Public Expenditures*
Public Expenditures (t-1)	0.9688***
	[0.959, 0.9774]
PSI	0.0004
	[-0.0077, 0.0095]
PSN	0.0055
	[-0.0008, 0.0112]
PSI × PSN	0.0049
	[-0.0004, 0.0097]
ENP (ln)	0.0031
	[-0.0064, 0.0131]
Dem Age (ln)	0.0026
	[-0.0039, 0.0096]
Presidentialism	-0.0129
	[-0.023, 0.0003]
Regional Elections	-0.0012
	[-0.0124, 0.009]
GDPpc (ln)	0.0045
	[-0.0026, 0.0122]
Constant	-0.0071
	[-0.069, 0.0484]
Observations	3012
Countries	93

Note: brackets show the 90% credible interval.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Figure C.1 Marginal Effects of PSI and PSN (Table C.3)

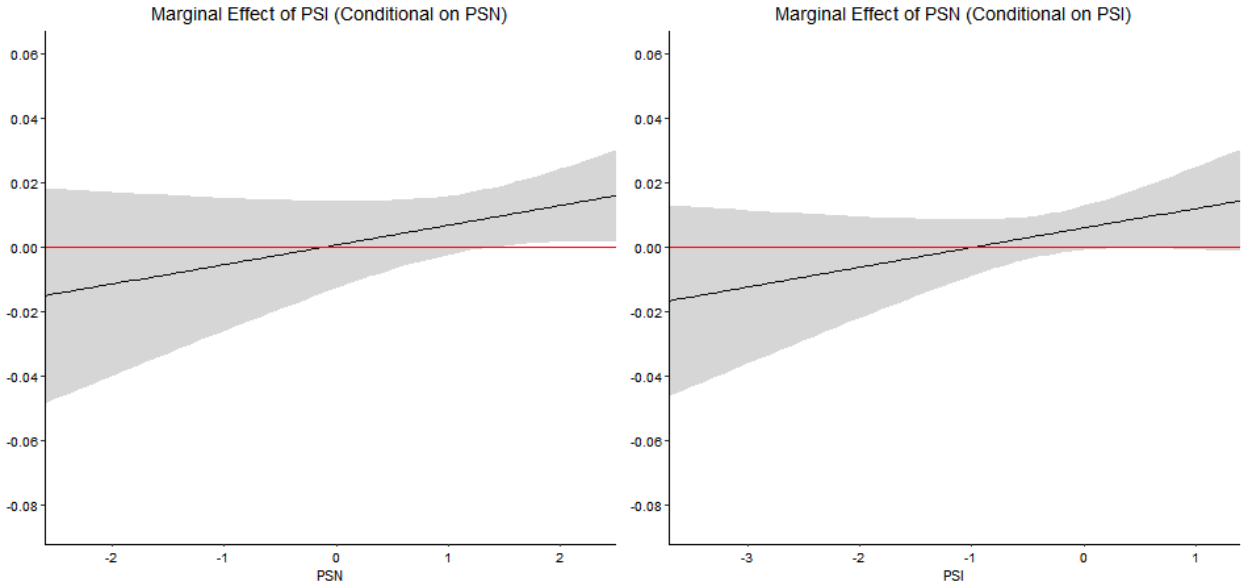


Table C.4 Re-estimating Table 4.4 with PSI Measurement Uncertainty

DV	*Education Years*	*Infant Mortality*	*Education Equality*	*Health Equality*
DV (t-1)	0.9722***	0.9118***	0.9732***	0.9682***
	[0.957, 0.9884]	[0.8926, 0.9316]	[0.9493, 0.998]	[0.9401, 0.9959]
PSI (t-1)	0.1209***	-0.5823***	0.0596*	0.0432**
	[0.0759, 0.1572]	[-0.8495, -0.3211]	[0.0096, 0.1047]	[0.0141, 0.0793]
PSN (t-1)	-0.0174**	0.0968	-0.0141	0.0023
	[-0.0317, -0.0032]	[-0.0342, 0.2216]	[-0.0327, 0.0051]	[-0.0176, 0.0223]
ENP (ln; t-1)	0.0029	-0.4452	0.021	-0.0184
	[-0.0275, 0.0305]	[-0.8203, 0.0041]	[-0.0111, 0.0522]	[-0.0587, 0.0304]
Dem Age (ln; t-1)	-0.0301**	0.2509	0.013	0.0104
	[-0.0499, -0.0078]	[-0.0878, 0.5447]	[-0.0104, 0.0358]	[-0.0232, 0.0456]
Presidentialism (t-1)	-0.0425**	-0.3546***	-0.0365*	-0.0215
	[-0.0783, -0.0125]	[-0.5491, -0.1766]	[-0.0696, -0.004]	[-0.0635, 0.016]
Regional Elections (t-1)	-0.0108	-0.226	-0.0405**	0.0214
	[-0.0379, 0.0203]	[-0.5118, 0.0106]	[-0.0717, -0.0083]	[-0.0194, 0.0563]
GDPpc (ln; t-1)	-0.0229	1.1759***	-0.044*	-0.0431
	[-0.0598, 0.0102]	[0.6119, 1.6964]	[-0.0856, -0.0037]	[-0.0999, 0.0162]
Constant	0.9209***	-12.6954***	0.4914**	0.4795*
	[0.657, 1.1838]	[-17.6732, -7.7239]	[0.1844, 0.8133]	[0.0705, 0.8894]
Observations	513	513	572	572
Countries	71	90	91	91

Note: brackets show the 90% credible interval.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table C.5 Re-estimating Table 4.2 using Cox's Measure of PSN

DV	*Public Expenditures*
Public Expenditures (t-1)	0.9696***
	(0.0052)
PSI	0.0226***
	(0.0067)
PSN	-0.0391**
	(0.0187)
PSI × PSN	-0.0507***
	(0.0175)
ENP (ln)	0.0073
	(0.0075)
Dem Age (ln)	0.0016
	(0.0043)
Presidentialism	-0.0110
	(0.0074)
Regional Elections	0.0007
	(0.0068)
GDPpc (ln)	-0.0003
	(0.0048)
Constant	0.0482
	(0.0386)
Observations	2722
Countries	79

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Figure C.2 Marginal Effects of PSI and PSN (Table C.5)

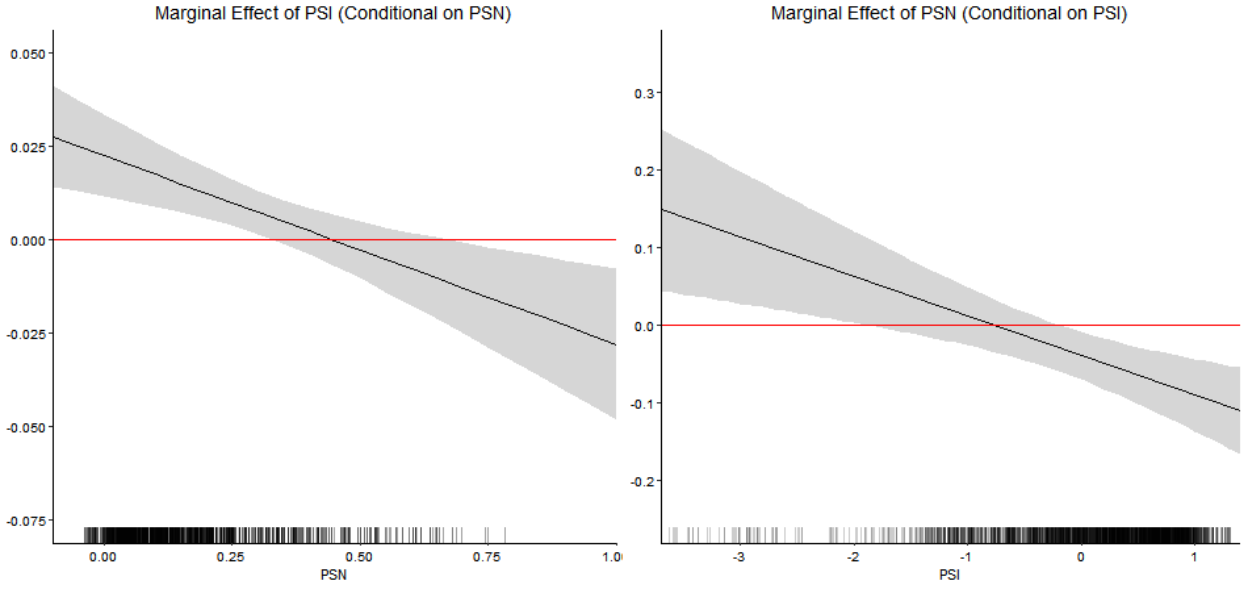


Table C.6 Re-estimating Table 4.4 with Cox's Measure of PSN

DV	*Education Years*	*Infant Mortality*	*Education Equality*	*Health Equality*
DV (t-1)	0.9695***	0.9035***	0.9614***	0.9729***
	(0.0093)	(0.0161)	(0.0201)	(0.0198)
PSI (t-1)	0.1489***	-0.4903***	0.0677**	0.0373*
	(0.0301)	(0.1818)	(0.0334)	(0.0219)
PSN (t-1)	0.0363	1.3977	-0.0543	-0.2749***
	(0.0348)	(0.9386)	(0.0726)	(0.0936)
ENP (ln; t-1)	-0.0150	-0.5779**	0.0548*	0.0118
	(0.0151)	(0.2555)	(0.0294)	(0.0311)
Dem Age (ln; t-1)	-0.0381***	0.2392	0.0121	0.0167
	(0.0131)	(0.2127)	(0.0135)	(0.0234)
Presidentialism (t-1)	-0.0243**	-0.3470***	-0.0488**	-0.0270
	(0.0118)	(0.0993)	(0.0219)	(0.0247)
Regional Elections (t-1)	0.0000	-0.3432	-0.0518**	0.0458**
	(0.0207)	(0.2115)	(0.0223)	(0.0217)
GDPpc (ln; t-1)	-0.0463**	1.0727***	-0.0506	-0.0668
	(0.0199)	(0.3918)	(0.0354)	(0.0421)
Constant	1.1757***	-11.4755***	0.5484*	0.6808**
	(0.1716)	(3.7433)	(0.2940)	(0.3237)
Observations	461	458	512	512
Countries	62	76	77	77

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table C.7 Re-estimating Table 4.4 with an Interaction Term

DV	*Education Years*	*Infant Mortality*	*Education Equality*	*Health Equality*
DV (t-1)	0.9723***	0.9119***	0.9701***	0.9677***
	(0.0089)	(0.0129)	(0.0141)	(0.0182)
PSI (t-1)	0.1443***	-0.7540***	0.0445	0.0403
	(0.0256)	(0.1831)	(0.0374)	(0.0273)
PSN (t-1)	-0.0211***	0.1165	-0.0140	0.0018
	(0.0081)	(0.0811)	(0.0124)	(0.0130)
PSI × PSN (t-1)	-0.0027	0.0787	0.0331*	0.0172
	(0.0082)	(0.1233)	(0.0178)	(0.0164)
ENP (ln; t-1)	0.0092	-0.4903*	0.0180	-0.0180
	(0.0159)	(0.2508)	(0.0215)	(0.0268)
Dem Age (ln; t-1)	-0.0352***	0.2585	0.0103	0.0088
	(0.0113)	(0.1993)	(0.0135)	(0.0193)
Presidentialism (t-1)	-0.0383**	-0.3752***	-0.0263	-0.0166
	(0.0164)	(0.1214)	(0.0200)	(0.0241)
Regional Elections (t-1)	-0.0110	-0.2492	-0.0446**	0.0177
	(0.0143)	(0.1583)	(0.0211)	(0.0220)
GDPpc (ln; t-1)	-0.0333	1.2145***	-0.0473*	-0.0461
	(0.0219)	(0.3309)	(0.0260)	(0.0369)
Constant	1.0267***	-13.1381***	0.5279***	0.5150*
	(0.1768)	(3.1495)	(0.1984)	(0.2633)
Observations	513	513	572	572
Countries	71	90	91	91

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table C.8 Full Results of Table 4.5

ΔDV	*ΔEducation Years*	*ΔInfant Mortality*	*ΔEducation Equality*	*ΔHealth Equality*
DV (t-1)	-0.0382***	-0.0921***	-0.0332*	-0.0400**
	(0.0104)	(0.0132)	(0.0171)	(0.0196)
PSI (t-1)	0.1219***	-0.5934***	0.0709**	0.0461**
	(0.0241)	(0.1458)	(0.0320)	(0.0196)
ΔPSI	0.0510	-0.4820	0.1147*	0.1026
	(0.0443)	(0.5271)	(0.0649)	(0.0664)
PSN (t-1)	-0.0183**	0.0661	-0.0150	0.0013
	(0.0079)	(0.0721)	(0.0121)	(0.0128)
ΔPSN	0.0352	-0.3786	0.0230	0.0183
	(0.0515)	(0.5051)	(0.0421)	(0.0497)
ENP (ln; t-1)	-0.0189	-0.3562	0.0182	-0.0229
	(0.0163)	(0.2419)	(0.0202)	(0.0278)
ΔENP (ln)	-0.0585	0.5434	-0.0189	0.0191
	(0.0461)	(0.5177)	(0.0608)	(0.0543)
Dem Age (ln; t-1)	0.0302	-0.3737	-0.0017	0.0380
	(0.0393)	(0.3570)	(0.0391)	(0.0509)
ΔDem Age (ln)	0.3718	-4.1495*	-0.0956	0.1564
	(0.3076)	(2.1277)	(0.2476)	(0.3019)
Presidentialism (t-1)	-0.0490***	-0.3438***	-0.0323*	-0.0262
	(0.0176)	(0.1032)	(0.0191)	(0.0222)
Regional Elections (t-1)	-0.0042	-0.2357	-0.0368*	0.0214
	(0.0163)	(0.1580)	(0.0198)	(0.0214)
GDPpc (ln; t-1)	0.0098	1.0694***	-0.0385	-0.0265
	(0.0232)	(0.3806)	(0.0272)	(0.0363)
ΔGDPpc (ln)	0.5360***	-2.4270**	0.1241	0.4033**
	(0.1588)	(1.1060)	(0.1560)	(0.1900)
Constant	0.3781	-8.5165**	0.5005*	0.1726
	(0.2720)	(3.8015)	(0.2916)	(0.2968)
Observations	513	513	572	572
Countries	71	90	91	91

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table C.9 Full Results of Table 4.6

DV	*Public Expenditures*
Public Expenditures (t-1)	0.9640***
	(0.0063)
PSI	-0.0084
	(0.0065)
PSN	0.0056
	(0.0038)
PSI × PSN	0.0090**
	(0.0039)
PI	0.0915***
	(0.0288)
ENP (ln)	0.0023
	(0.0065)
Dem Age (ln)	0.0041
	(0.0049)
Presidentialism	-0.0050
	(0.0071)
Regional Elections	-0.0024
	(0.0063)
GDPpc (ln)	-0.0024
	(0.0055)
Constant	-0.0169
	(0.0413)
Observations	3095
Countries	94

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Table C.10 Full Results of Table 4.7

DV	*Education Years*	*Infant Mortality*	*Education Equality*	*Health Equality*
DV (t-1)	0.9720***	0.9117***	0.9714***	0.9665***
	(0.0091)	-0.0126	(0.0154)	(0.0196)
PSI (t-1)	0.1530***	-0.8973***	0.0677**	0.0474**
	(0.0311)	(0.2135)	(0.0332)	(0.0230)
PSN (t-1)	-0.0207**	0.1126	-0.0152	0.0012
	(0.0083)	(0.0797)	(0.0114)	(0.0131)
PI (t-1)	-0.0851	1.6718	0.0317	0.0578
	(0.0674)	(1.3250)	(0.0644)	(0.1199)
ENP (ln; t-1)	0.0111	-0.5105**	0.0234	-0.0162
	(0.0154)	(0.2392)	(0.0198)	(0.0274)
Dem Age (ln; t-1)	-0.0364***	0.2822	0.0106	0.0092
	(0.0106)	(0.1929)	(0.0139)	(0.0199)
Presidentialism (t-1)	-0.0453***	-0.2806**	-0.0317*	-0.0168
	(0.0170)	(0.1120)	(0.0189)	(0.0225)
Regional Elections (t-1)	-0.0117	-0.2494	-0.0402**	0.0192
	(0.0157)	(0.1609)	(0.0189)	(0.0211)
GDPpc (ln; t-1)	-0.0282	1.1060***	-0.0501*	-0.0478
	(0.0240)	(0.3478)	(0.0270)	(0.0381)
Constant	1.0539***	-13.5084***	0.5299***	0.4882*
	(0.1736)	(3.2896)	(0.2025)	(0.2603)
Observations	513	513	572	572
Countries	71	90	91	91

Note: standard errors shown are shown in the parentheses.
***=p<0.01; **=p<0.05; *=p<0.10 (two-tailed).

Appendix D

Table D.1 Full Results of Table 5.3

Model	(1)	(2)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0100	0.0107	0.0037	-0.0069
	(0.0099)	(0.0111)	(0.0185)	(0.0197)
OPV	0.0180	0.0016	0.0592*	0.0576*
	(0.0148)	(0.0145)	(0.0316)	(0.0323)
Regime Age	-0.2590*	-0.5231***	0.3641	0.8872***
	(0.1454)	(0.1658)	(0.2441)	(0.3072)
Years Since Election	0.1294	0.3327***	-0.3616*	-0.6943***
	(0.1000)	(0.1205)	(0.2191)	(0.2516)
ENP (ln)	0.4078	0.6931	-0.3397	-1.0328
	(0.5075)	(0.5534)	(1.0083)	(1.0529)
GDP per capita (ln)	-0.3345*	-0.4481*	-0.1488	0.2993
	(0.1855)	(0.2327)	(0.3738)	(0.4457)
GDP Growth	-2.8730	-5.7897	2.1075	7.8972
	(3.7233)	(3.8799)	(6.3209)	(6.7401)
Territory Control	-0.0119	-0.0167	0.0191	0.0358
	(0.0125)	(0.0146)	(0.0231)	(0.0272)
EF	-0.8327	-1.0950*	0.1052	1.2002
	(0.5427)	(0.6227)	(0.9850)	(1.1161)
Election Accepted	0.3806**	0.2530	0.9275***	0.6745**
	(0.1589)	(0.1620)	(0.3084)	(0.3174)
Civil Society	1.8747**	0.8734	4.6360***	3.7626*
	(0.8196)	(0.9959)	(1.6742)	(1.9846)
Regional Polyarchy	4.1469***	2.2448	7.8677***	5.6229**
	(1.2405)	(1.6672)	(2.0996)	(2.7136)
Post-Cold War	-0.6831*	-0.6965	-0.7959	-0.0994
	(0.3553)	(0.4473)	(0.6665)	(0.8478)
Constant	0.0857	2.8819	-10.9182**	-13.8002**
	(2.2230)	(2.8199)	(4.4504)	(5.5981)
Observations	916		916	
Pseudo R^2	0.1382		0.1893	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.2 Full Results of Table 5.4

Model	(3)	(4)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0089	0.0126	-0.0072	-0.0198
	(0.0101)	(0.0113)	(0.0211)	(0.0225)
OPV-A	0.0170	0.0044	0.0623*	0.0579
	(0.0151)	(0.0140)	(0.0362)	(0.0368)
OPV-B	0.0327	-0.0281	0.1619***	0.1900***
	(0.0318)	(0.0411)	(0.0484)	(0.0620)
Regime Age	-0.2667*	-0.5102***	0.3378	0.8480***
	(0.1459)	(0.1663)	(0.2636)	(0.3288)
Years Since Election	0.1296	0.3323***	-0.3450	-0.6773***
	(0.1001)	(0.1203)	(0.2208)	(0.2541)
ENP (ln)	0.3100	0.8586	-1.3366	-2.1951**
	(0.5391)	(0.5884)	(1.0023)	(1.0019)
GDP per capita (ln)	-0.3428*	-0.4326*	-0.1812	0.2515
	(0.1860)	(0.2316)	(0.3889)	(0.4642)
GDP Growth	-2.8185	-6.0007	2.5155	8.5163
	(3.7092)	(3.9533)	(6.7890)	(7.1618)
Territory Control	-0.0130	-0.0146	0.0056	0.0202
	(0.0126)	(0.0149)	(0.0228)	(0.0266)
EF	-0.8228	-1.1424*	0.0264	1.1689
	(0.5421)	(0.6164)	(0.9110)	(1.0421)
Election Accepted	0.3836**	0.2534	1.0062***	0.7528**
	(0.1591)	(0.1618)	(0.3313)	(0.3425)
Civil Society	1.8522**	0.9276	4.6009***	3.6733*
	(0.8218)	(1.0219)	(1.5968)	(2.0002)
Regional Polyarchy	4.1415***	2.2446	7.8263***	5.5817**
	(1.2295)	(1.6840)	(2.0798)	(2.6956)
Post-Cold War	-0.6808*	-0.6939	-0.7284	-0.0345
	(0.3571)	(0.4368)	(0.7321)	(0.8956)
Constant	0.2878	2.5116	-9.2492*	-11.7608**
	(2.2523)	(2.8162)	(4.7195)	(5.8537)
Observations	916		916	
Pseudo R^2	0.1387		0.1964	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.3 Full Results of Table 5.5

Model	(5)	(6)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0236*	0.0138	0.0350	0.0212
	(0.0125)	(0.0122)	(0.0287)	(0.0303)
OPV-A	0.0174	0.0043	0.0726*	0.0683*
	(0.0152)	(0.0140)	(0.0373)	(0.0377)
OPV-B	0.0461	-0.0259	0.2070***	0.2329***
	(0.0341)	(0.0437)	(0.0647)	(0.0771)
RPSC × OPV-B	-0.0029**	-0.0002	-0.0076***	-0.0073**
	(0.0011)	(0.0016)	(0.0025)	(0.0032)
Regime Age	-0.3125**	-0.5121***	0.1904	0.7025**
	(0.1486)	(0.1713)	(0.2340)	(0.2992)
Years Since Election	0.1291	0.3317***	-0.3256	-0.6573***
	(0.1010)	(0.1202)	(0.2216)	(0.2513)
ENP (ln)	0.1689	0.8471	-2.3000**	-3.1471***
	(0.5411)	(0.5864)	(1.0994)	(1.0785)
GDP per capita (ln)	-0.3344*	-0.4320*	-0.1947	0.2372
	(0.1758)	(0.2309)	(0.3165)	(0.4014)
GDP Growth	-3.5123	-6.0691	0.2063	6.2754
	(3.8529)	(3.9928)	(6.3355)	(6.8194)
Territory Control	-0.0156	-0.0145	-0.0097	0.0049
	(0.0128)	(0.0149)	(0.0219)	(0.0257)
EF	-0.7726	-1.1320*	0.0238	1.1558
	(0.5589)	(0.6229)	(0.9044)	(1.0121)
Election Accepted	0.3746**	0.2500	1.0367***	0.7867**
	(0.1551)	(0.1605)	(0.2888)	(0.3110)
Civil Society	1.7966**	0.9272	4.7869***	3.8597*
	(0.8368)	(1.0236)	(1.6338)	(1.9747)
Regional Polyarchy	4.1137***	2.2330	8.5998***	6.3668**
	(1.2470)	(1.6904)	(2.1318)	(2.6825)
Post-Cold War	-0.6531*	-0.6980	-0.7970	-0.0990
	(0.3537)	(0.4362)	(0.6434)	(0.8191)
Constant	0.6005	2.5048	-7.3442*	-9.8489*
	(2.1860)	(2.8121)	(4.1424)	(5.3458)
Observations	916		916	
Pseudo R^2	0.1458		0.2106	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.4 Re-estimating Table 5.5 including Oil Production per Capita as a Control Variable

Model	(7)	(8)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0215	0.0153	0.0185	0.0033
	(0.0142)	(0.0148)	(0.0314)	(0.0333)
OPV-A	0.0301**	0.0182	0.0971*	0.0789
	(0.0145)	(0.0131)	(0.0531)	(0.0548)
OPV-B	0.0641*	-0.0016	0.2444***	0.2460**
	(0.0331)	(0.0448)	(0.0868)	(0.1005)
RPSC × OPV-B	-0.0033***	-0.0013	-0.0074***	-0.0061*
	(0.0012)	(0.0017)	(0.0027)	(0.0033)
Regime Age	-0.2926*	-0.5092***	0.2564	0.7655*
	(0.1606)	(0.1878)	(0.3320)	(0.4102)
Years Since Election	0.1856	0.3913***	-0.2400	-0.6314**
	(0.1144)	(0.1328)	(0.2555)	(0.2890)
ENP (ln)	0.1269	0.7609	-3.0486*	-3.8095**
	(0.6361)	(0.6774)	(1.8530)	(1.8383)
GDP per capita (ln)	-0.0945	-0.2386	0.0786	0.3172
	(0.2792)	(0.3239)	(0.5799)	(0.6419)
GDP Growth	-5.5080	-8.4627**	-0.2005	8.2623
	(4.0468)	(4.1747)	(6.8638)	(7.1084)
Territory Control	-0.0344**	-0.0335**	-0.0371	-0.0036
	(0.0147)	(0.0167)	(0.0285)	(0.0312)
EF	-0.7378	-1.0992*	0.3450	1.4441
	(0.5809)	(0.6274)	(0.9482)	(1.0025)
Election Accepted	0.3538**	0.2709	1.0233***	0.7524*
	(0.1782)	(0.1860)	(0.3968)	(0.4234)
Civil Society	2.0141**	1.2409	4.4039**	3.1630
	(0.9671)	(1.2017)	(1.8264)	(2.1766)
Regional Polyarchy	2.9819**	0.7680	8.4182***	7.6502**
	(1.4001)	(1.8910)	(2.6762)	(3.1437)
Post-Cold War	-0.2613	-0.3262	-0.4382	-0.1120
	(0.3638)	(0.4660)	(0.7372)	(0.9334)
Oil per capita (ln)	-0.3853**	-0.3155	-0.6421	-0.3266
	(0.1882)	(0.2354)	(0.4741)	(0.5233)
Constant	0.5424	3.1104	-7.0190	-10.1294
	(2.8339)	(3.4607)	(5.2999)	(6.2143)
Observations	787		787	
Pseudo R^2	0.1711		0.2362	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.5 Re-estimating Table 5.5 including District Magnitude Change as a Control Variable

Model	(9)	(10)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0159	0.0125	0.0249	0.0124
	(0.0158)	(0.0170)	(0.0311)	(0.0337)
OPV-A	0.0215	0.0207	0.0097	-0.0110
	(0.0243)	(0.0305)	(0.0594)	(0.0671)
OPV-B	0.0506	-0.1025	0.1686**	0.2711**
	(0.0685)	(0.0934)	(0.0809)	(0.1235)
RPSC × OPV-B	-0.0022	0.0029	-0.0079**	-0.0108**
	(0.0016)	(0.0027)	(0.0034)	(0.0045)
Regime Age	-0.1393	-0.1715	-0.0363	0.1352
	(0.2371)	(0.3749)	(0.3390)	(0.5237)
Years Since Election	0.0488	0.2497*	-0.2319	-0.4816
	(0.1173)	(0.1451)	(0.2816)	(0.3129)
ENP (ln)	-0.0657	0.9943	-2.4684	-3.4628*
	(0.9243)	(1.1355)	(1.7358)	(2.0318)
GDP per capita (ln)	-0.3519	-0.3521	-0.4970	-0.1449
	(0.2323)	(0.2886)	(0.5127)	(0.5674)
GDP Growth	-3.3946	-3.3507	-10.2873	-6.9366
	(4.7562)	(5.4976)	(9.8266)	(10.5461)
Territory Control	-0.0351	-0.0191	-0.0538	-0.0347
	(0.0281)	(0.0395)	(0.0473)	(0.0639)
EF	-0.5208	-0.7894	0.1595	0.9489
	(0.7556)	(0.8940)	(1.5645)	(1.7756)
Election Accepted	0.1794	0.1175	0.8140***	0.6964*
	(0.2313)	(0.2974)	(0.3005)	(0.4155)
Civil Society	1.9275	0.1249	7.7986***	7.6737**
	(1.2267)	(1.4467)	(2.6762)	(3.0577)
Regional Polyarchy	5.2808***	3.1792	12.3402***	9.1610*
	(1.8927)	(2.8632)	(4.5185)	(5.3939)
Post-Cold War	-0.7641	-0.2537	-1.9014*	-1.6477
	(0.6639)	(1.0175)	(1.0878)	(1.6103)
District Magnitude Change	-0.0053	-0.0365	0.0008	0.0373
	(0.0041)	(0.0426)	(0.0051)	(0.0432)
Constant	1.3446	0.2541	-0.9898	-1.2439
	(3.5708)	(4.7087)	(6.6832)	(8.3054)
Observations	620		620	
Pseudo R^2	0.1379		0.2350	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.6 Re-estimating Table 5.5 including ODA per Capita as a Control Variable

Model	(11)	(12)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0212*	0.0128	0.0337	0.0209
	(0.0129)	(0.0134)	(0.0291)	(0.0316)
OPV-A	0.0099	-0.0074	0.0670	0.0745
	(0.0169)	(0.0168)	(0.0456)	(0.0484)
OPV-B	0.0448	-0.0297	0.2017**	0.2314**
	(0.0433)	(0.0512)	(0.0823)	(0.0929)
RPSC × OPV-B	-0.0027**	0.0004	-0.0081***	-0.0085***
	(0.0012)	(0.0016)	(0.0026)	(0.0033)
Regime Age	-0.3086**	-0.4531**	-0.0250	0.4282
	(0.1555)	(0.1818)	(0.2140)	(0.2728)
Years Since Election	0.0985	0.3284***	-0.3719	-0.7004**
	(0.1089)	(0.1275)	(0.2564)	(0.2831)
ENP (ln)	-0.1767	0.7647	-2.9377*	-3.7024**
	(0.6963)	(0.8325)	(1.5217)	(1.6323)
GDP per capita (ln)	-0.2547	-0.3305	-0.3113	0.0191
	(0.1810)	(0.2460)	(0.3397)	(0.4214)
GDP Growth	-4.9518	-6.1905	-3.5060	2.6845
	(4.4268)	(4.7049)	(6.5528)	(7.0860)
Territory Control	-0.0301*	-0.0271	-0.0267	0.0004
	(0.0159)	(0.0210)	(0.0276)	(0.0357)
EF	-0.7538	-1.0462	-0.0350	1.0112
	(0.6191)	(0.7756)	(1.1122)	(1.3629)
Election Accepted	0.3175**	0.1503	0.9896***	0.8394**
	(0.1617)	(0.1734)	(0.3728)	(0.4038)
Civil Society	2.4658**	1.5107	5.8054***	4.2947*
	(0.9856)	(1.2156)	(2.2274)	(2.5780)
Regional Polyarchy	4.2219***	2.7864	8.3824***	5.5961*
	(1.3148)	(1.8249)	(2.5323)	(3.1989)
Post-Cold War	-0.5254	-0.7086	-0.4402	0.2684
	(0.3902)	(0.5159)	(0.6908)	(0.9131)
ODA per capita (ln)	0.0285	0.0204	0.0372	0.0168
	(0.1522)	(0.1848)	(0.2617)	(0.2980)
Constant	1.6073	3.0609	-3.7822	-6.8431
	(2.5976)	(3.5692)	(4.7850)	(6.3102)
Observations	808		808	
Pseudo R^2	0.1489		0.2174	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.7 Re-estimating Table 5.5 without using Linear Prediction and Supplementing Missing Countries with Alesina et al. (2003) for Ethnic Fractionalization Scores

Model	(13)	(14)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0147	0.0116	-0.0015	-0.0131
	(0.0133)	(0.0135)	(0.0332)	(0.0345)
OPV-A	0.0304**	0.0161	0.1331**	0.1171*
	(0.0150)	(0.0137)	(0.0600)	(0.0605)
OPV-B	0.0711**	0.0056	0.2948***	0.2892**
	(0.0341)	(0.0443)	(0.1121)	(0.1198)
RPSC × OPV-B	-0.0031**	-0.0012	-0.0090**	-0.0079**
	(0.0012)	(0.0017)	(0.0036)	(0.0039)
Regime Age	-0.2646*	-0.4710***	0.3267	0.7977*
	(0.1537)	(0.1793)	(0.3934)	(0.4664)
Years Since Election	0.2594**	0.4051***	0.0416	-0.3636
	(0.1112)	(0.1322)	(0.2518)	(0.2886)
ENP (ln)	-0.0826	0.6095	-4.5277*	-5.1372**
	(0.6421)	(0.6579)	(2.3957)	(2.3092)
GDP per capita (ln)	-0.1413	-0.3508	0.3736	0.7244
	(0.2250)	(0.2749)	(0.5507)	(0.5986)
GDP Growth	-5.6747	-8.6829**	0.0947	8.7776
	(4.0514)	(4.0902)	(7.7018)	(7.8685)
Territory Control	-0.0259*	-0.0254	-0.0241	0.0013
	(0.0144)	(0.0158)	(0.0304)	(0.0330)
EF	-0.9222	-1.1158*	0.5884	1.7041
	(0.5833)	(0.6217)	(1.0640)	(1.1290)
Election Accepted	0.3750**	0.2890*	1.2645**	0.9755*
	(0.1699)	(0.1753)	(0.4971)	(0.5151)
Civil Society	2.0978**	1.1985	5.9914**	4.7930
	(0.9305)	(1.1593)	(2.7990)	(3.1091)
Regional Polyarchy	3.7898***	1.3981	12.0548***	10.6567***
	(1.3344)	(1.7372)	(2.6245)	(2.9506)
Post-Cold War	-0.4815	-0.4644	-1.3972**	-0.9328
	(0.3559)	(0.4372)	(0.6668)	(0.8649)
Constant	0.0471	3.1283	-12.2981**	-15.4264**
	(2.5116)	(3.1736)	(5.7162)	(6.5835)
Observations	726		726	
Pseudo R^2	0.1597		0.2355	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.8 Re-estimating Table 5.5 excluding Censored Observations

Model	(15)	(16)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0248*	0.0157	0.0308	0.0151
	(0.0143)	(0.0149)	(0.0319)	(0.0325)
OPV-A	0.0392***	0.0240*	0.1071**	0.0832*
	(0.0148)	(0.0144)	(0.0452)	(0.0479)
OPV-B	0.0358	-0.0289	0.1972***	0.2262**
	(0.0329)	(0.0440)	(0.0734)	(0.0883)
RPSC × OPV-B	-0.0030**	-0.0009	-0.0071***	-0.0062*
	(0.0012)	(0.0017)	(0.0026)	(0.0032)
Regime Age	-0.1403	-0.3396*	0.3381	0.6777*
	(0.1395)	(0.1773)	(0.2693)	(0.3491)
Years Since Election	0.1596	0.3499**	-0.2839	-0.6338**
	(0.1145)	(0.1368)	(0.2503)	(0.2770)
ENP (ln)	0.1580	0.7888	-2.4870*	-3.2758**
	(0.5583)	(0.6325)	(1.3596)	(1.3421)
GDP per capita (ln)	-0.1151	-0.2398	0.0460	0.2858
	(0.2071)	(0.2836)	(0.3500)	(0.4450)
GDP Growth	-4.7493	-6.9323	-2.7045	4.2277
	(4.0879)	(4.6018)	(6.0607)	(6.8717)
Territory Control	-0.0183	-0.0135	-0.0217	-0.0081
	(0.0123)	(0.0141)	(0.0241)	(0.0279)
EF	-0.9981*	-1.1603**	-0.4520	0.7083
	(0.5410)	(0.5894)	(0.9852)	(1.0047)
Election Accepted	0.3588*	0.2306	1.0461***	0.8156**
	(0.1910)	(0.1909)	(0.3815)	(0.3880)
Civil Society	2.0517***	1.4325	4.2923***	2.8598
	(0.7816)	(1.0092)	(1.5904)	(1.9668)
Regional Polyarchy	3.0256**	1.3708	7.3132***	5.9423**
	(1.1966)	(1.5901)	(2.2403)	(2.7080)
Post-Cold War	-0.0275	-0.1642	0.0593	0.2235
	(0.3238)	(0.3812)	(0.6961)	(0.8057)
Constant	-1.4640	0.0863	-7.9512*	-8.0376
	(2.2436)	(3.0354)	(4.3247)	(5.6959)
Observations	566		566	
Pseudo R^2	0.1324		0.1989	

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.9 Re-estimating Table 5.5 after including All Variables and using MICE to Impute Missing Observations

Model	(17)	(18)		
Comparison Group vs. Reference Group	Breakdown vs. Survival	Replacement vs. Survival	Democracy vs. Survival	Democracy vs. Replacement
RPSC	0.0251**	0.0140	0.0362	0.0222
	(0.0127)	(0.0124)	(0.0291)	(0.0311)
OPV-A	0.0166	0.0082	0.0574	0.0492
	(0.0150)	(0.0146)	(0.0411)	(0.0422)
OPV-B	0.0299	-0.0359	0.1690**	0.2049**
	(0.0357)	(0.0447)	(0.0759)	(0.0851)
RPSC × OPV-B	-0.0029**	0.0000	-0.0077***	-0.0077**
	(0.0012)	(0.0016)	(0.0026)	(0.0034)
Regime Age	-0.2513*	-0.4190**	0.2012	0.6202**
	(0.1496)	(0.1827)	(0.2485)	(0.3134)
Years Since Election	0.1279	0.3181***	-0.3570*	-0.6751***
	(0.0963)	(0.1174)	(0.2120)	(0.2477)
ENP (ln)	0.3407	1.0621*	-2.0244*	-3.0865***
	(0.4995)	(0.5974)	(1.0570)	(1.1201)
GDP per capita (ln)	-0.2218	-0.4189	0.1255	0.5444
	(0.2670)	(0.3410)	(0.5136)	(0.6249)
GDP Growth	-3.4217	-5.3056	-0.3613	4.9443
	(3.8723)	(4.1268)	(6.4658)	(7.0547)
Territory Control	-0.0153	-0.0153	0.0002	0.0154
	(0.0138)	(0.0161)	(0.0270)	(0.0306)
EF	-0.4395	-1.1546	1.2205	2.3752
	(0.7004)	(0.7504)	(1.5698)	(1.6122)
Election Accepted	0.3630**	0.2902*	0.8922***	0.6021**
	(0.1606)	(0.1719)	(0.2858)	(0.3044)
Civil Society	1.6724**	1.1744	3.6957**	2.5213
	(0.8342)	(1.0637)	(1.6296)	(1.9598)
Regional Polyarchy	4.6935***	2.9872*	9.2690***	6.2818**
	(1.3076)	(1.7007)	(2.4104)	(2.8565)
Post-Cold War	-0.6894**	-0.7858*	-0.6994	0.0864
	(0.3335)	(0.4237)	(0.6420)	(0.8024)
Oil per capita (ln)	-0.0412	0.0094	-0.1708	-0.1802
	(0.1192)	(0.1455)	(0.1984)	(0.2151)
District Magnitude Change	-0.0083	-0.0135	-0.0001	0.0133
	(0.0092)	(0.0131)	(0.0109)	(0.0165)
ODA per capita (ln)	0.0239	-0.0455	0.1713	0.2168
	(0.1931)	(0.2424)	(0.3525)	(0.4120)
Constant	-0.6690	1.5302	-10.1632*	-11.6934*
	(2.5454)	(3.3354)	(5.5673)	(6.8282)
Observations	940	940		

Note: results report country-clustered standard errors. The model also includes cubic polynomials of a time trend variable to model temporal dependence as proposed by Carter and Signorino (2010).
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table D.10 Re-estimating Table 5.5 Dropping One Country at a Time[1]

Dropped Country	*RPSC*	*OPV-A*	*OPV-B*	*RPSC* × *OPV-B*
Albania	0.038	0.0732*	0.207***	-0.00741***
Algeria	0.035	0.0725*	0.206***	-0.00755***
Angola	0.0349	0.0725*	0.207***	-0.00756***
Argentina	0.0357	0.0719**	0.211***	-0.00744***
Armenia	0.0349	0.0725*	0.207***	-0.00753***
Azerbaijan	0.035	0.0724*	0.207***	-0.00755***
Bangladesh	0.0351	0.0712*	0.202***	-0.00752***
Belarus	0.0348	0.0724*	0.207***	-0.00756***
Bolivia	0.0344	0.0724**	0.212***	-0.00760***
Brazil	0.0351	0.0716*	0.204***	-0.00750***
Burkina Faso	0.0326	0.0705*	0.209***	-0.00704***
Burma/Myanmar	0.0346	0.0714*	0.206***	-0.00760***
Burundi	0.0349	0.0718*	0.208***	-0.00746***
Cambodia	0.0365	0.0707*	0.205***	-0.00759***
Cameroon	0.0343	0.0736**	0.209***	-0.00743***
Central African Republic	0.0352	0.0723*	0.206***	-0.00755***
Chad	0.0349	0.0726*	0.207***	-0.00754***
Chile	0.0301	0.0721*	0.196***	-0.00734***
Colombia	0.0321	0.0651*	0.185***	-0.00730***
Croatia	0.0336	0.0738**	0.210***	-0.00768***
Cuba	0.0354	0.0721*	0.205***	-0.00748***
Democratic Republic of the Congo	0.0322	0.0879**	0.221***	-0.00738***
Djibouti	0.0348	0.0723*	0.207***	-0.00756***
Dominican Republic	0.044	0.0790**	0.151**	-0.00977***
Egypt	0.0348	0.0727*	0.207***	-0.00754***
El Salvador	0.037	0.0818**	0.217***	-0.00722***
Equatorial Guinea	0.0349	0.0726*	0.207***	-0.00756***
Ethiopia	0.035	0.0725*	0.207***	-0.00757***
Fiji	0.035	0.0726*	0.207***	-0.00756***
Gabon	0.0358	0.0734**	0.207***	-0.00761***
Georgia	0.035	0.0725*	0.207***	-0.00756***
Greece	0.035	0.0725*	0.207***	-0.00756***
Guinea	0.0335	0.0745**	0.207***	-0.00689***
Guinea-Bissau	0.0418	0.0706*	0.200***	-0.00770***
Guyana	0.035	0.0726*	0.207***	-0.00756***
Haiti	0.0351	0.0719*	0.206***	-0.00759***
Honduras	0.031	0.0777**	0.194***	-0.00746***
Indonesia	0.0347	0.0722*	0.206***	-0.00751***
Iran	0.035	0.0725*	0.207***	-0.00756***
Iraq	0.0359	0.0715*	0.207***	-0.00751***
Ivory Coast	0.035	0.0725*	0.207***	-0.00755***
Jamaica	0.0344	0.0657*	0.197***	-0.00691***
Kazakhstan	0.0364	0.0729**	0.206***	-0.00770***
Kenya	0.0348	0.0722**	0.205***	-0.00749***
Kyrgyzstan	0.0352	0.0723*	0.207***	-0.00757***
Lesotho	0.0557**	0.0704	0.234***	-0.00891***
Madagascar	0.0351	0.0720*	0.206***	-0.00755***
Malawi	0.0399	0.0669*	0.206***	-0.00872***

[1] Given that this procedure generates 79 sets of coefficient estimates, i.e., one iteration for each country in our sample, we present the coefficient estimates for *RPSC*, *OPV-A*, *OPV-B*, *RPSC* × *OPV-B* when regime survival is the reference group and democratic transition is the comparison group.

Malaysia	0.0297	0.0862**	0.226***	-0.00736***
Mauritania	0.0346	0.0723*	0.206***	-0.00754***
Mexico	0.0269	0.0885**	0.237***	-0.00777***
Montenegro	0.033	0.0723*	0.193***	-0.00766***
Mozambique	0.0288	0.0920**	0.237***	-0.00828***
Nicaragua	0.0329	0.0801**	0.222***	-0.00763***
Nigeria	0.0356	0.0683*	0.203***	-0.00719***
Panama	0.0347	0.0736**	0.208***	-0.00757***
Papua New Guinea	0.035	0.0726*	0.207***	-0.00756***
Paraguay	0.0369	0.0685*	0.201***	-0.00743***
Peru	0.032	0.0733**	0.191***	-0.00691***
Philippines	0.0395	0.0556	0.213***	-0.00810***
Republic of the Congo	0.035	0.0726*	0.207***	-0.00756***
Republic of Vietnam	0.0351	0.0724*	0.206***	-0.00753***
Russia	0.0369	0.0703*	0.198***	-0.00755***
Rwanda	0.0342	0.0707*	0.200***	-0.00740***
Senegal	0.0383	0.0835**	0.216***	-0.00805***
Serbia	0.0347	0.0725**	0.209***	-0.00745***
Seychelles	0.0226	0.0704*	0.221***	-0.00701***
Sierra Leone	0.0247	0.0769**	0.214***	-0.00672***
Singapore	0.0314	0.0732**	0.206***	-0.00747***
South Korea	0.0405	0.0717*	0.212***	-0.00849***
Tajikistan	0.0349	0.0725*	0.207***	-0.00755***
The Gambia	0.0295	0.0732**	0.209***	-0.00709***
Togo	0.0283	0.0783**	0.209***	-0.00736***
Tunisia	0.035	0.0727*	0.207***	-0.00756***
Turkey	0.0392	0.0475	0.210***	-0.00780***
Uganda	0.035	0.0715*	0.205***	-0.00752***
Yemen	0.0352	0.0722*	0.207***	-0.00756***
Zambia	0.0417	0.0728*	0.224***	-0.00797***
Zimbabwe	0.0388	0.0748**	0.206***	-0.00785***

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.