

***Manipulating Electoral Rules:
Intra-Party Conflict, Partisan Interests, and Constitutional Thickness***

Stanford University Dissertation (Draft)

Chapter 1

“Presenting and Testing a General Theory of Electoral Rule Change”

Do political parties manipulate electoral rules in predictable, strategic ways in order to stay in power longer? While existing studies have argued that bargaining *between* parties determines the *initial* choice of electoral rules, this factor alone cannot explain the frequency and timing of *subsequent* electoral rule changes. In this chapter, I present a general theory of institutional change that incorporates two additional constraints: 1) if proposals for rule change cannot garner sufficient intra-party support because they actually harm the reelection prospects of some incumbents, the bill may stall in parliament; 2) if electoral rules are stipulated by the constitution, then institutional reform requires a constitutional amendment which makes manipulation more difficult. I test this theory using an original dataset of major electoral rule changes in 20 OECD countries over a 50-year period. I find that when and how institutions are altered depends substantially on conflicts *within* parties, bargaining in parliament *between* parties, and whether electoral rules are set by the national constitution.

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Introduction

To what extent do political parties manipulate electoral rules in predictable, strategic ways? This question is not only interesting from a theoretical perspective, but also has important implications for representative democracy. If political actors can manipulate electoral rules in ways that allow them to win more seats with fewer votes, then politicians may become less sensitive to the demands of their constituents.

Although we have observed a large number of electoral reforms since the late 1980s, social science still lacks a generalizable theory that explicitly specifies the conditions under which parties seek to change electoral rules. Indeed, very little work has been done on this topic at all; while scholars have studied party preferences with regard to the *initial* choice of electoral rules, few have discussed whether these preferences about electoral rules are stable *over time*. Moreover, there have been no solutions to the empirical puzzle that political parties frequently do NOT manipulate electoral rules *even when they would be expected to benefit from such a change*.

In this dissertation, I argue that parties have identifiable incentives to manipulate electoral rules, and that we can predict when and how these changes occur. Although most studies assume that the major constraint on electoral rule change is conflict between parties, two additional factors play a major role. First, in order to successfully enact electoral rule change, the “proposer” party must be able to convince all of its members to support such a bill in the legislature. Certain types of electoral reform proposals, however, may pit party leaders (whose job security rests on maximizing aggregate party seat share) against the rank-and-file MPs (who seek foremost to protect their individual incumbencies). Without support from these rank-and-file members, legislative proposals may fail, even when such reforms could increase the party’s aggregate seat share in parliament.

Second, there may be *constitutional* limits to institutional change. If the constitution

explicitly specifies the electoral system, then changing electoral rules requires a constitutional amendment, which typically imposes higher hurdles than a simple legislative majority. These “rules about rules” substantially restrict the ability of parties to manipulate the electoral system

A maximum-likelihood model using data from 19 advanced-industrialized democracies in the post-war period supports this theory. I find that the probability of electoral change depends substantially on three factors: 1) the extent to which there is consensus *within* parties; 2) differences in seat share which affects bargaining *between* parties; 3) the degree to which electoral rules are strictly specified in the constitution, which affects the ease with which institutions can be changed.

This chapter proceeds as follows. In Section I, I review the existing literature on electoral rule choice. Section II outlines my own model of electoral system change. In Section III, I present some basic hypotheses derived from this theory. Section IV discusses the operationalization of key variables included in the statistical test. In Section V, I present the results of the statistical analysis and provide interpretations of these findings in light of my initial hypotheses. I conclude by suggesting other ways in which electoral rule change can be studied and present an outline of the remaining portions of this dissertation.

I. Background

Do political actors have strong incentives to manipulate electoral rules? Riker writes that any type of institution that has an asymmetrical impact on political outcomes will be unstable, as actors will seek to modify it to suit their interests (Riker 1980). Indeed, many scholars have written on how political preferences influence the design of legislative institutions (Calvert 1995; Shepsle and Weingast 1987), the power balance between the executive and the legislature (Frye 1997; Moe and Caldwell 1994; Shugart 1998), the independence and structure of the bureaucracy

(Geddes 1991; McNollgast 1999), and state-society relations (North and Weingast 1989; Scarrow 1997).

Electoral rules similarly create asymmetries in distributional benefits, and have well-documented differences in how they allocate seats between political parties. Studies have shown that larger parties tend to benefit from first-past-the-post rules, while smaller parties are more likely to gain representation under proportional representation (Duverger 1954; Gallagher 1991; Lijphart 1999; Taagepera and Shugart 1989). More specifically, the larger the district magnitude – the number of parliamentary seats allocated to a given district – the more likely that minor parties will win seats (Cox 1997; Reed 1991; Sartori 1976). Even among proportional representation systems, the way in which votes are pooled in and across districts – for example between the single-transferable vote, PR with the Hare quota, and the Hagenbach-Bischoff methods – can affect the proportionality of the vote-to-seat translation (Benoit 2000; Lijphart 1986; Schuster et al. 2003).¹ Because electoral rules create systematic biases that benefit some actors more than others, it *should* be in the interests of political parties to alter these rules in order to increase their seat share in parliament, thereby strengthening their bargaining power over policy.

Do parties, then, *actually* manipulate electoral rules to maximize the number of seats that they can gain from their vote share – their electoral “bang for the buck”? Country case studies suggest they might, because when rule changes *do* occur, they tend to reflect partisan preferences. The most compelling evidence comes from work on Germany (Bawn 1993), Mexico (Diaz-Cayeros and Magaloni 2001), Korea (Brady and Mo 1992), and Eastern Europe (Lijphart

¹ Others have shown that minor-level electoral rule changes, such as gerrymandering (Cox and Katz 2002; Gelman and King 1990; Johnston 1986), malapportionment (Coakley 1980; Grofman, Koetzle, and Brunell 1997; Jackman 1994), and the creation of new districts (Mair 1986; Steward III and Weingast 1992), also reflect partisan logic and tend to benefit the parties in power.

1992), which confirm that parties consistently try to make the best strategic choice available to increase their vote-seat ratio. Surprisingly, however, cross-national work on the frequency of electoral rule change indicates that electoral systems appear to be relatively stable over time (Lijphart 1994; Nohlen 1984).

Even if we know that parties *do* make strategic decisions with regard to electoral rules, the circumstances under which these rules are changed are by no means straightforward, as the parties in the position to change electoral rules are often the very actors who are benefiting most from the status quo. Cox (1997) lays out a very general framework for predicting institutional change, arguing that rule changes are likely only when 1) the status quo is shifting against the dominant party, or 2) there is great uncertainty about the future prospects of the party. The classic Lipset and Rokkan (1967) thesis falls firmly into the first category: when the franchise was expanded in early 20th century Europe, the logic of electoral rule choice was dictated by the entrenched Conservative parties attempting to weaken challengers from the fast-rising Labour parties. Boix (1999) employs statistical tests to verify this theory and shows that whether Conservative parties switched the electoral system from plurality to PR depended on the expected vote share of the new Left parties.

A growing literature on initial institutional choice under high levels of uncertainty appears to support Cox's second point. Studies have shown that when uncertainty is extremely high – with little common knowledge about issue salience, social cleavages, or the number and size of political parties – actors tend to be risk-averse and opt for the “safe” choice of PR electoral rules, which prevents any party from suffering disproportionately large losses (Olson 1998; Przeworski 1991; Shvetsova 2003). Andrews and Jackman's (2004) refinement of Boix's (1999) empirical analysis also shows that high levels of uncertainty in the early 20th century significantly constrained strategic institutional manipulation.

While these studies depict the importance of both uncertainty and partisan conflict in the *initial* choice of electoral rules, it is not clear how to extend their theoretical relevance to electoral rule *change*. In particular, the existing literature only explores strategic behavior under unique, once-in-a-lifetime cases of post-independence or suffrage expansion when the quality of information was low and, more importantly, the historical situation *required* electoral rule change. Whether parties behave similarly under more “normal” conditions is questionable, and for the most part has been unexplored. For example, while uncertainty clearly affects party strategy, how do incentives change when the level of uncertainty varies over time? Are parties more likely to change rules (to PR or some other type of system) when uncertainty is high, or will they only make strategic choices when vote distribution is stable and they can accurately predict how much they will benefit from electoral manipulation?

Importantly, the dynamics of electoral rule change appear to be influenced by more than partisan preference. Particularly puzzling are cases where no changes were made *even when political parties would have benefited from strategic manipulation*. One prominent example is the stability of electoral rules in Japan, where the Liberal Democratic Party (LDP) held a single-party majority for close to four decades. Many contemporary simulations showed that the LDP could have garnered a large super-majority if it had changed the electoral formula from the single-non-transferable vote (SNTV) to first-past-the-post (FPTP). Nevertheless, the LDP never actually reformed the existing system. This failure to implement an apparently obvious choice cannot be explained by the conventional assumption that only inter-party bargaining matters: in Japan, the opposition had a minority of seats and could not have blocked electoral change legislation by the LDP. Clearly a more nuanced theory that incorporates more than conflict *between* parties is needed in order to understand if and when parties manipulate institutions in their favor.

II. Theoretical Model

The central thesis of this dissertation is that existing theories of institutional change overstate the frequency of electoral rule manipulation because they treat parties as cohesive entities interacting in an unconstrained bargaining environment. Instead, I argue that intra-party conflicts and constitutional limits on electoral reform can affect the likelihood of institutional manipulation. Specifically, there are three stages in the rule-making process where proposals for reform can be derailed: what I call the party stage, the parliamentary stage, and the constitutional stage. Figure 1 depicts the three-step process that any initiative for institutional change must travel through.

[Figure 1 about here]

II. A *Party stage*

All attempts at electoral rule change must begin at the first level, labeled as the “party stage,” where one party decides whether to put forth a reform bill in the legislature. I model intra-party negotiations as occurring between two sets of actors: party leaders whose goal is to maximize aggregate seat share, and rank-and-file politicians who are primarily concerned about their own reelection – and only secondarily with the performance of the party as a whole.² Rank-and-file members will reject any electoral rule change proposals which endanger their own survival; if a sufficient number of them vote against a bill, then that proposal is unlikely to secure

² The conflict can be modeled as being between any subsets of the party, such as mainstream factions versus minor groups. This bifurcation of parties into seat-maximizing party leaders and incumbency-protecting MPs is used in a variety of other works, most notably Cox and McCubbins (1993). That politicians are concerned with their own reelection is itself not a new assertion, and has been argued most prominently by Mayhew (1974). The idea that party leaders are interested in maximizing aggregate seat share – largely because their own position is dependent on successful navigation of the party through elections – has been detailed by Luebbert (1986), and also in a series of case studies in the edited volume by Longley and Hazan (2000). See Stokes (1999) for a more detailed review of formal models dealing with intra-party conflict.

a parliamentary majority.

Conflicts between these two groups arise because a political party may win more seats in *aggregate* under a different electoral system, but that does not mean that *all incumbents* will retain their seats. If a politician's vote share is based on personalistic (and often geographically-specific) support, an incumbent who consistently wins under the old districting system may not be so fortunate under new boundary delimitations. For example, a shift from PR to FPTP may award disproportionate seat bonuses to the largest political party, but also create problems for individual incumbents who lack a local base and may be unable to win in a single-member district.³ Under such circumstances, if party leaders cannot offer victory to a substantial number of incumbents (who will ultimately be doing the voting for the new bill in parliament), then they may face considerable internal opposition to reform.

Whether the rank-and-file can actually veto (or credibly threaten to veto) party proposals depends on the degree of their independence from the party leader. In party systems where the candidates are weak relative to the party – such as when official nominations are decided by the party leadership, or the party vote trumps the candidate vote – the rank-and-file may have no choice but to accept the leadership's demands and hope for the best. On the other hand, if candidate survival is only weakly linked to party support, individual MPs have greater flexibility to operate outside of the party leader's dictums.⁴ The bottom line is that the party will only propose changes that they believe the rank-and-file will accept (or can be coerced to accept).

To take a prominent example, intra-party conflict appears to have been at the root of the LDP's failure to implement electoral change in Japan. On three separate occasions the LDP

³ For an analysis of the disproportionalities created by different electoral systems, see Gallagher (1991) and Lijphart (1994). Carey and Shugart (1995) and Kreuzer (2000) discuss the determinants of the party vs. personal vote across electoral rules.

⁴ See Bawn, Cox, and Rosenbluth (1999) for a comparative analysis of the extent to which individual candidate's reelection probabilities are tied to the party's average vote share. For a good literature review and discussion of the factors leading to and resulting from party cohesion, see Bowler, Farrell and Katz (1999).

leadership proposed electoral reform: once for a single-member district system (1956), and twice for a mixed-member majoritarian system (1973 and 1991). Newspaper simulations at the time showed that the LDP would have made significant gains had these changes been enacted: one model from 1973 showed that the LDP would have increased its Lower House seat share from 55.2% to 78.9% under a mixed-member system, and a similar projection in 1991 anticipated that the LDP could win up to 75% of the total seats in the Diet (Hrebenar 1986). Remarkably, these bills never made it through parliament, and some were withdrawn before they even reached a floor vote.

These reform proposals failed because of opposition from young LDP backbenchers, who believed that they might lose their seats under a different electoral system. Since LDP incumbents campaign based on individual accomplishments in their local districts rather than on the party label (Curtis 1971; Richardson 1988; Ramseyer and Rosenbluth 1993), moving to a new district often means having to develop a personal vote base from scratch – and by extension weaker reelection prospects. This is particularly true of junior MPs with little name recognition outside of their own districts. As a result, when party leaders proposed radical reform, LDP factions with a large share of these younger incumbents fought hard against any changes to the status quo. Indeed, one popular quote at the time was that “Rains of blood will fall if districts are tampered with” (*Gikai Seido Kenkyu-kai* 1991).

These threats to veto reform were credible precisely because LDP politicians can win with or without party endorsement; the leadership therefore had no effective way to punish the rank-and-file for opposing their proposals. Knowing that changes to electoral rules which could weaken some incumbents would not gain the intra-party support necessary to secure a majority vote in parliament, LDP leaders never seriously advocated major electoral reforms (Christensen 2000).

II. B *Parliamentary stage*

If the proposer party *does* manage to agree on an electoral rule change proposal, the negotiations then proceed to the “parliamentary stage”, where the axis of conflict is *between*, rather than *within*, parties. The exact process of how a bill becomes law differs by legislative system, depending on the agenda-setting power of different actors (Shepsle and Weingast 1984) or the importance and sequence of committee involvement (Shepsle and Weingast 1987). In all cases, however, the proposal must ultimately be supported by a specified set of actors within parliament – typically a majority – for it to become law.

The primary determinant of success in the parliamentary stage is the distribution of legislative power, which is largely a function of the relative seat share of each party. In a single-party majority system one party can essentially push through (or block) institutional change as it sees fit. In contrast, rule change is harder under a minority and/or a coalition government, because the “proposer” party must negotiate and compromise with many different actors to get a bill passed. Fragmentation of power increases the difficulty of arriving at an agreement on electoral rule change; without at least a majority of legislative votes, however, the bill will fail at the parliamentary stage.

Scholars have tended to explain the likelihood of institutional manipulation by looking mainly at this element of inter-party bargaining. Benoit (2004), for example, argues that the Socialist Party in France was able to change the electoral system in 1986 because it held the majority of seats necessarily to pass the bill in parliament without having to negotiate with other parties. In contrast, he shows that Hungary’s Socialist–Free Democratic coalition government between 1994 and 1997 was *unable* to change the electoral system because of conflicts in the preferences of coalition partners. While the larger coalition party (the MSZP) would have gained significantly from a majoritarian electoral system, it was opposed by its partner (the

SZDSZ), which would have *lost* seats under such a scenario. Lacking consensus within the coalition – and not having the votes needed for institutional change by itself – the MSZP was unable to realize its preferences for a new electoral system. While legislative fractionalization and inter-party negotiations are not the *only* impediment to electoral rule manipulation, the parliamentary stage is clearly an important arena of conflict that needs to be addressed in a comprehensive theory of institutional change.

II. C Constitutional stage

Even when a parliamentary majority votes for electoral rule change, the bill must survive the final “constitutional stage”. Reform initiatives can succeed only if a group of parties has the necessary legislative fiat to overcome the metainstitutional rules constraining institutional change (Benoit 2004). In stable democracies, the *constitution* provides this metainstitutional framework by setting the “rules about rules” that govern electoral rule endogeneity. Constitutions typically require higher hurdles for amendment than do legislative statutes – often a supermajority in parliament, a national referendum, an intervening election, or some combination of the above.⁵ If the electoral rules are specified by the constitution – what I call “thick” constitutions – then changing them requires more than just a majority in the legislature, making them harder to manipulate. On the other hand, when constitutions are “thin” and do not require special provisions for electoral rule change, then any majority coalition in parliament can initiate institutional reform. A comparison of Norway and Japan’s stipulations regarding electoral rules provide a vivid illustration of the spectrum of ambiguity: the Norwegian constitution uses 663 words to specify the precise structure of the country’s electoral institutions, while the Japanese document leaves the establishment of electoral rules to parliament in 26 words (see Appendix).

⁵ See Lutz (1994) for a comparative analysis of constitutional amendment processes.

The repeated failure of Ireland's Fianna Fáil party to implement its desired reforms shows the extent to which a strict constitution can constrain parties. With an average of 46% of first preference votes and 49% of seats between 1938-1989, Fianna Fáil has consistently had incentives to make the electoral system *more* disproportionate, in order to win more seats with the same number of votes and hopefully secure a single-party majority. The party has, indeed, attempted to change the electoral system from PR-STV (proportional representation, single transferable vote) to plurality rules twice (1957 and 1968), each time in the wake of repeated failures to gain an overall majority in the Dáil (parliament).

Fianna Fáil failed to implement these changes on both occasions, however, because of the specification of the electoral formula in the 1937 Constitution. Article 16.2.5 of the Constitution writes, "The members shall be elected on the system of proportional representation by means of the single transferable vote". This has made changing the electoral system difficult, because constitutional amendment in Ireland must first pass majority vote in both Houses, after which it must overcome the more difficult test of receiving majority approval in a national referendum. Because the opposition parties, particularly Labour, would lose seats from an increase in electoral disproportionality, they stiffly opposed electoral reform and mobilized voters accordingly. Although Fianna Fáil held the necessary parliamentary majority to put the issue to a national vote in 1957 and 1968, public opinion swung against the proposal in both occasions. Consequently, Fianna Fáil's constitutional referenda initiatives failed and the PR-STV system was left intact (Chubb 1982).

III. Some Hypotheses

Having stated the basic theory, it is possible to derive concrete propositions regarding the circumstances under which parties should push for electoral rule change. In this section I

will posit some hypotheses detailing the conditions under which change is more or less likely, and I do so in three parts, corresponding to the theoretical distinctions between the factors affecting the intra-party, inter-party, and constitutional stages.

Before discussing these hypotheses, however, we must first establish a baseline for measuring party incentives for change. While it is easy to state that parties seek to maximize their interests with regard to the electoral system, it is not immediately clear which operationalization would best indicate whether parties are benefiting from the status quo or not. One variable that is frequently used in the comparative elections literature is the electoral rule's overall disproportionality, calculated as:

$$G = \sqrt{0.5 \sum (V_i - S_i)^2}$$

where V_i and S_i are the vote and seat shares for each party i (Gallagher 1991). While this measure captures the overall disproportionality of the electoral system, it aggregates the system's effects on all parties and makes it impossible to tell which parties are actually benefiting or being harmed under the status quo.

I argue that the extent to which disproportionality helps or hinders *individual* parties is best expressed in terms of a party's *bonus ratio*, or its seat share divided by its vote share (Benoit 2000). The bonus ratio assesses the actual vote-to-seat translation of each party while controlling for the effects of any partisan asymmetries in the regional distribution of votes.⁶ Put simply, the bonus ratio allows us to compare what percentage of the seats each party wins when

⁶ Just using the *seat* shares of parties may capture the relative bargaining power of political actors in parliament, but because it does not take into account how many votes each party must garner for every seat it wins, this measure ignores whether parties actually benefit under the existing system. Indeed, smaller parties with strong followings in specific geographic areas may win many seats in that region, even if their nation-wide popularity is low, *i.e.* the bonus ratio is high. Such parties may end up garnering more seats than a party that is more popular generally but is always second- or third-place in individual electoral districts, *i.e.* bonus ratio is low.

holding the vote share constant.

$$BR = S_i / V_i$$

In these terms, every party prefers electoral rules that award it a *bonus ratio* greater than 1, i.e. disproportionately more seats than votes. At the same time, by measuring *fluctuations* in the bonus ratio of each party, we can see diachronic changes in how the status quo electoral system helps or hurts political actors. Most other variables in this section are derived from manipulations to the *bonus ratio* measure.

III. A Intra-party stage hypotheses

The party leader's proximate goal is to maximize the seat share of his party in parliament. Parties can derive strategic benefits from changing the existing electoral system when there is a substantial difference between their bonus ratios and the bonus ratios of other parties – what I term the *bonus ratio differential*. Because elections are a zero-sum game – one party's gain is necessarily another's loss – party incentives to change electoral rules hinge on how much the existing system benefits itself *relative* to other parties.

The extent to which a party can gain from altering the status quo depends largely on the size and sign of this *bonus ratio differential*. As per the famed “cube law”, electoral rules tend to disproportionately favor parties with higher vote shares, *i.e.* larger parties often have larger bonus ratios; the bonus ratio differential between large and small parties is therefore typically positive.⁷ While the large party may be satisfied with this status quo and prefer to maintain the existing rules, smaller parties – which are winning disproportionately fewer seats – should seek to

⁷ The cube law, as formulated originally by Kendall and Stuart (1950), states that when votes between parties are divided in the ratio A:B, their seats will be distributed in the ratio A³:B³. For a critique of the Cube Law, see Jackman (1994).

close the gap in bonus ratios by making the electoral system more proportionate. In other words, the larger the positive bonus ratio differential, the stronger the pressures from the non-beneficiaries of the system to decrease this bias by altering electoral rules. This insight leads to the following “compensation” hypothesis:

Compensation Hypothesis: When the bonus ratio differential between parties is *positive* and large, the likelihood of electoral system change is higher.

Notably, the *bonus ratio differential* is not necessarily positive for the largest parties. When the bonus ratio of the largest party is smaller than that of other parties – meaning the bonus differential is *negative* – the second most popular party may actually win more seats than the largest party. This arguably unfair “rule of the minority” frequently calls the legitimacy of the electoral system itself in question, as seen in New Zealand in 1978 and 1981 when the Labour Party had the plurality of the votes but won fewer seats than the National Party. A similar case can be made for the 2000 U.S. Presidential election, in which the candidate with fewer national votes won the presidency. Under these circumstances, the largest party should seek to close the bonus differential gap by changing electoral rules.

Unfairness Hypothesis: When the bonus ratio differential is *negative*, the likelihood of electoral system change is higher.

While party leaders may be able to identify whether (and what kind of) electoral rule change is to their benefit, intra-party constraints can prevent them from *realizing* these incentives. In particular, rank-and-file members may oppose proposals for reform if they cannot be

guaranteed incumbency protection under the new system. This tension between party leaders and backbenchers manifests itself as a tendency towards conservatism: up to a certain point, parties tend to stick with the devil they know, even if the status quo is no longer beneficial (Shepsle 1989).

Although this conflict within a party is not easy to measure, we can theorize conditions under which rank-and-file opposition to change may weaken. Specifically, if the *status quo itself becomes electorally risky*, any costs associated with the uncertainty of change should become less significant. One measure of this uncertainty is *diachronic change in the bonus ratio differential*, which captures fluctuations in how much the extant system benefits *individual parties*. While there are always minor oscillations in bonus ratios as the popularity of parties wax and wane, large swings represent significant volatility in the benefits the electoral system confers to each party – and thus greater risk with staying at the status quo.

Conflict Mitigation Hypothesis 1: When swings in the bonus ratio differential between t-1 and t *increase*, the likelihood of electoral system change also increases.

Similarly, while parties (and their incumbents) may be wary of electoral reform because of the uncertainty in vote distribution it may bring, this inertia is conditional on parties feeling confident about the continuation of the existing *party system*. Put another way, when new parties enter the party system or old parties fail, established expectations about future vote share go out the window and reform will be more palatable to the rank-and-file.

Conflict Mitigation Hypothesis 2: When swings in party system fractionalization *increase* between t-1 and t, the probability of electoral reform increases.

III. B. *Parliamentary stage hypothesis*

Even when individual parties can agree internally on electoral reform, they still need to muster a parliamentary majority for those changes to be implemented. While there are various ways in which we can measure legislative fractionalization, the most basic difference in the structure of parliamentary bargaining is *whether one party has a majority by itself*. A majority party does not have to negotiate with other parties in order to get a bill passed in parliament, and presumably will have an easier time manipulating the electoral system.

Ceteris paribus, when a majority party is not benefiting greatly from the status quo – when bonus differential ratio is low – it should seek to change the electoral system in order to increase its advantage. If the majority party *is* deriving disproportionate benefits from existing electoral rules, however, it should prefer to *preserve* the status quo by keeping the system that brought it into power. Even though smaller parties may seek to implement reforms which reduce the largest party's bonus ratio (as per the Compensation Hypothesis), the majoritarian party has the votes necessary to block such bills in parliament, consequently dampening the probability of electoral rule change.

Dominance Hypothesis: When one party has a single-party majority but the bonus differential is low, the probability of electoral system change is high. As the bonus differential *increases*, however, the probability of electoral system change should decrease.

III. C. *Constitutional stage hypothesis*

Beyond intra- and inter-party negotiation, the probability that electoral rule manipulation will occur also depends on the specificity of metainstitutional constraints on system change. The key distinction is the “thickness” (*i.e.* specificity) of the constitution, which imposes different hurdles to institutional manipulation; when the electoral rules are written into the

constitution, they are less susceptible to change. The actual “thickness” of constitutions depends on variations in the *difficulty of amending the constitution*, which determines the necessary fiat power that parties must muster before they can enact reforms. I take values from Lutz (1994) to show amendment difficulty, where a higher value indicates higher hurdles to amendment. Table 1 presents some basic statistics comparing constitutions on their level of electoral rule specificity.

[Table 1 about here]

Constitutional Thickness Hypothesis: When electoral rules are written into the constitution, the probability of electoral system change decreases. This probability decreases further as the constitution becomes more difficult to amend.

IV. Operationalizing the Hypotheses

Although there are many different rules under the rubric of “electoral system,” three types substantially affect the translation of votes to seats: the electoral formula, district magnitude, and legal threshold of representation. I posit that these three features are most likely to be manipulated by political parties wishing to maximize their bonus ratios. Indeed, Taagepera and Shugart’s (1989) exhaustive empirical and theoretical analysis confirms the composite effect that these three rules have on the probability that parties can gain political representation.

The *electoral formula* defines how election winners are to be chosen. One common type is the plurality rule, under which the candidate with the most votes in the district wins. A similar formula is the majoritarian rule, under which a candidate wins only when he can garner a

majority in the district, often over multiple stages where the weakest candidates are winnowed out sequentially. A vastly different system is proportional representation, whereby party seat quotas are determined by aggregating votes across districts. PR rules can pool votes in and across districts in different ways, such as by the single-transferable vote, the largest-remainder method, or the highest-averages method. While there is no consensus on which type of PR rules is most proportionate, their effect on the vote-to-seat translation for large vs. small parties is well established.⁸ Recently, many countries have also chosen to adopt *mixed* systems which combine plurality and proportional representation districts in various ways (Shugart and Wattenberg, 2001).

The *district magnitude* (M) is the number of parliamentary seats allocated to a given district. The larger the M , the more seats in each district, and consequently the more proportionate the vote-to-seat translation within those districts. Accordingly, parties with small per-district vote shares should prefer a large M , while larger parties should prefer the opposite (*i.e.* $M=1$, or single-member districts). This is because as district magnitude increases, the number of competitive candidates also increases at a rate of $M+1$, thereby raising the likelihood of minor parties gaining representation (Cox 1997; Reed 1991).

Finally, the *legal threshold of representation* imposes a minimum level of pooled vote share that a party must win in order to qualify for adjustment or bonus seats, generally in a higher regional or national tier. This limits the participation of minor parties that do not enjoy a strong national following by formally preventing them from gaining seats in parliament.

⁸ Lijphart (1986) ranks major electoral rules in descending order of proportionality from Hare and Droop largest remainder (LR) methods, Sainte-Lague highest-average (HA) method, the Imperiali LR, d'Hondt HA, and Imperiali HA. Benoit (2000), using statistical simulations, suggests an alternate ranking, with St. Lague HA as the most proportionate, and then Hare LR, Droop LR, Imperiali LR, d'Hondt HA, and Imperiali HA.

Dependent Variable

A widely used method of measuring electoral rule alterations is to track changes in a composite variable of disproportionality that takes into account various features of electoral rules. One of the more popular variables in this vein is the “effective threshold of representation”, developed by Taagepera and Shugart (1989) and Lijphart (1994). This measure calculates the proportion of votes that secures parliamentary representation to any party with a probability of 50%. The primary advantage of this variable is that it translates rules (including those regulating suffrage, district magnitude, the pooling of votes across tiers, and legal thresholds to representation) into one tractable, continuous variable that predicts well “the degree to which the electoral law distorts the proportional representation of voters’ preferences” (Boix 1999).

The applicability of the effective threshold of representation (ETR) is limited for the purposes of this project, however, because the variable focuses too much on the upper and lower bounds of vote share required to win a seat, while largely ignoring changes in electoral rules that affect the middle range of vote-to-seat translation.⁹ By construction, ETR is the average of 1) when a party can win a seat under the most favorable circumstances, and 2) when a party barely fails to win a seat under the most unfavorable circumstances. ETR fails, however, to take into account electoral rule changes that alter probabilities of representation at values other than at these extreme circumstances.

Instead, I choose to use a discrete variable that tabulates *all changes*, either major or minor, in electoral rules. Taking each electoral period of a country – the time-span between elections – as one case, I use a dichotomous variable that takes a value of “1” when any of the

⁹ ETR is calculated by averaging 1) the threshold of exclusion, which is the maximum percentage of votes that a party can obtain without being able to win a seat, and 2) the threshold of inclusion, which is the minimum percentage of votes that a party can win and still gain a seat. The threshold of exclusion ($Texcl$) = $V / M + 1$, where V = vote share and M = number of seats in the district. The threshold of inclusion ($Tincl$) is the higher of either 1) the legal threshold of representation, or 2) $Tincl = 100 / 2M$, where M = average district magnitude (Lijphart 1994).

following occurs during that electoral period: 1) any change in electoral formula (either a shift from plurality to PR or changes *within* PR rules), 2) anything greater than a 10% change in district magnitude¹⁰, or 3) any change in the legal threshold of representation. While some of these changes may have a minor impact on the overall proportionality of the electoral system, small vote-seat changes are often enough to win or lose an election for political parties (Rose and Mackie 1983), and thus can have a crucial impact on the balance of power within parliaments. Counting each change as an equally important event, rather than discriminating among them based on changes in a composite measure, better captures the *intent* of politicians in maximizing seat-share and thus is better suited to this study.

Data for electoral rule changes are taken from Caramani (2000), Carstairs (1980), Delury (1999), and Kurian (1998).

Cases

Each case in the dataset is one electoral period, defined as the time-span between elections. Every electoral period in 19 advanced democracies, starting from the first post-war election to the late 1990s, is included. The sampled cases are Austria (1945-1995), Belgium (1946-1995), Denmark (1947-1998), Finland (1948-1995), France Fifth Republic (1958-1997), Germany (1949-1998), Greece (1946-64, 1974-96), Iceland (1946-1995), Ireland (1948-1997), Italy (1948-1992), Japan (1946-1993), Luxembourg (1954-1994), Netherlands (1946-1998), Norway (1945-1997), Portugal (1975-1995), Spain (1977-1996), Sweden (1948-1998), United Kingdom (1945-1997), and Switzerland (1947-1995).

The total number of cases is 273 electoral periods, in which there are 38 instances of

¹⁰ The 10% threshold for tabulating district magnitude changes is admittedly arbitrary, but is informed by the fact that smaller alterations in district magnitude occur mainly when new territories are incorporated or divested from country boundaries, rather than from purposive political maneuvering.

electoral rule change (*i.e.* the DV = 1).

Independent Variables

The explanatory variables used in this study correspond to the hypotheses developed in Section III, and can be divided into those that matter at the party, parliamentary, and constitutional stages. Table 2 summarizes the independent variables, their relationship to this chapter's hypotheses, and their predicted effects.¹¹

[Table 2 about here]

The **party-stage** variables are as follows:

Bonus differential: the difference in the bonus ratios of the two largest parties by vote share. I compare the bonus ratios of the largest and second largest parties because these two actors are likely to be the critical players in any attempts to change electoral rules, and thus their incentives should play the greatest role in the manipulation process. Because incentives to change the electoral system should be exponentially larger as differences between parties increase, *squared values* of *bonus differential* are also included. As per the "Compensation Hypothesis", *bonus differential* should be positively associated with electoral rule change.

Bonus loser: a dichotomous variable that takes the value of "1" when the party with the largest vote share has a smaller bonus ratio than the second largest party, *i.e.* *bonus differential* is negative. As per the "Unfairness Hypothesis", the coefficient on *bonus loser* should be positive, indicating a higher probability of electoral rule change. Because the largest party's incentive to press for change should increase when the size of its bonus ratio loss is larger, an interactive term *bonus loser*bonus differential* is also included.

Bonus differential change: the absolute level change in *bonus differential* from t-1 to t (where t is the current electoral period). As this variable increases, the status quo becomes more volatile for the largest party, and therefore the party rank-and-file should be more amenable to electoral rule reform. This tests for "Conflict Mitigation Hypothesis 1", and I predict that when *bonus differential change* increases, the probability of rule change also increases. The *square* of *bonus*

¹¹ Election data are taken primarily from Gorvin (1989)Elections Since 1945: A Worldwide Reference Compendium, which itself draws on data from *Keesings Record of World Events*.

differential change is also included, since parties may be less sensitive to marginal levels of instability than to larger ones.

Herfindahl change: the change in the Herfindahl index from the last electoral period to the current. The Herfindahl index measures the concentration of seats in parliament, and is calculated as the sum of the squared seat shares of all parties.¹² A large change in the Herfindahl index indicates significant fluctuations in the distribution of seats in parliament, resulting from wide-ranging reshuffling of seats among parties, the demise of extant parties, or the entry of new parties. As per “Conflict Mitigation Hypothesis 2”, I predict that a high *Herfindahl change* value should increase the probability of electoral rule change, because party rank-and-file members should become less risk-averse. The *squared value* of this variable is also included to see whether incentives for change are exponentially greater under larger fluctuations in parliamentary fractionalization.

To test for the “Dominance Hypothesis”, one **parliamentary stage** variable for single-party majority is included:

*SPM*Bonus differential*: an interaction term between *SPM*, which takes the value of “1” when one party has a single-party majority, and *Bonus differential*. As this variable increases, the probability of electoral system change decreases.

When one party has 50%+1 seats in parliament, it should have an easier time enacting changes than when a coalition of parties has to agree upon electoral reform. As per the “Dominance Hypothesis”, a “1” in *SPM* should thus increase the probability of institutional change. This likelihood of electoral reform should decrease, however, when the largest party already benefits disproportionately from the status quo, because a dominant party should have weak incentives to change an already-beneficial system. With a majority of seats, that dominant party will also be able to resist opposition attempts to make the system more proportionate. In other words, the majority party is less likely to change electoral rules as the size of its dominance (*bonus ratio differential*) increases.

I operationalize the **constitutional stage** variables based on an analysis of the national

¹² A larger Herfindahl index value signifies a greater concentration of parliamentary seats among fewer parties.

constitutions from the samples countries. Two constitutional features in particular are picked out: whether the district magnitude is specified in the constitution, either as a fixed value or a range, and whether the electoral formula (PR, plurality, etc.) is specified. I then control for the amendment difficulty of the constitution based on the Lutz index, and derive the following variables:

Magnitude: a continuous variable that takes the value of the Lutz index for that country when the district magnitude is specified

Formula: a continuous variable that takes the value of the Lutz index for that country when the electoral formula is specified.

A value of greater than zero in both variables signifies that the constitution specifies those rules, and thus those features of the electoral system are harder to change. As per the “Constitutional Thickness Hypothesis”, I predict that the higher the values for *Magnitude* and *Formula*, the lower the probability of electoral rule change.

Descriptive statistics of the dependent and independent variables are included in Table 3.

[Table 3 about here]

For theoretical reasons, variables relating to the organization of government – the composition of parties in the Cabinet, the party of the prime minister, the frequency of government change between elections – are omitted from this study. Historically, many electoral rule reforms have followed government turnover between elections; as such, government change may *seem* like a good predictor of electoral rule change.

These factors were left out of this analysis, however, because new governments or

coalitions are frequently formed *in order to* initiate electoral rule change. *Ceteris paribus*, any electoral reform is likely to have a fundamental impact on the balance of power in parliament. While a group of parties may form a stable coalition government based on united *policy* preferences, this does not necessarily guarantee that the same parties agree on ideal *electoral* rules. As such, coalition reshuffling may be required before a group of parties with sufficient legislative fiat can agree to change the electoral system.

Because the causal arrow between government change and electoral reform is actually reversed in such cases (government change is caused by the desire for electoral rule change, not the other way around), including a government change variable is not an appropriate measure for predicting electoral rule endogeneity. Electoral system variables, such as vote-to-seat bonus ratios and parliamentary fractionalization, are “cleaner” measures, since they touch less on the actual negotiating over electoral rules, and instead provide information about the parliamentary setting that might make such negotiating more likely.

V. Statistical Results

The hypotheses of this paper are tested using a logistic regression with robust standard errors. Table 4 presents the results from three logit models, with the coefficients in their log-odds form and the t-statistic in parentheses. Country fixed effects were included in all three equations, although they are not displayed in the table (results available upon request). The first model is comprised exclusively of variables capturing the *intra*-party factors, and the second model adds the *inter*-party variable (*SPM*). The third model is the complete equation, and incorporates the metainstitutional variables constraining electoral reform. The analysis in this section is based on results from the third model, which allows us to test the full range of hypotheses relating to electoral rule change. The first and second models are included to show

that the signs of the coefficients are robust to the inclusion of extra variables.

[Table 4 about here]

Almost all of the coefficients have signs in the expected direction. As predicted by the “Compensation Hypothesis,” the probability of electoral rule change increases as *bonus differential* increases, although the negative value for *squared bonus differential* mitigates this probability at extreme levels of this variable. Compared to a baseline model where all independent variables are set at their median values (probability of change = 1.4%), increasing *bonus differential* by one standard deviation raises the probability of electoral rule change by 13.7%. Increasing *bonus differential* by two standard deviations to 0.46 raises the probability of change by 50.7%. In other words, when the largest party wins 46% more seats than the second party even with an equivalent number of votes, there is a significantly higher probability of electoral rule change. Table 5 displays the predicted effects of varying this and other key independent variables on the probability of electoral reform.

[Table 5 about here]

The “Unfairness Hypothesis” posits that when the party with the largest vote share *does not* have the largest bonus ratio, the probability of electoral rule change increases. The variables *bonus loser* and *bonus loser*bonus differential* operationalize this concept, and the two are jointly significant at the 99% level. The coefficients from Model 3 show that setting *bonus loser* at 1 and decreasing *bonus loser*bonus differential* by one standard deviation *increases* the probability of electoral rule change by 2.3%. In other words, when the second party benefits

more from the existing electoral system than the largest party, the electoral system has a higher probability of being changed.

The two “Conflict Mitigation Hypotheses” predict that the probability of electoral rule change increases when there are significant fluctuations in 1) the benefits conferred to a party under the status quo electoral system (*bonus differential change*), and 2) the concentration of seats in parliament (*Herfindahl change*). As expected, the coefficients for the individual variables and their respective squares move in opposite directions, suggesting that the effects of fluctuation are only significant at larger values. Figures 2 and 3 show the simulated change in predicted probability of electoral rule change when we let *bonus differential change* and *Herfindahl change* vary along their respective ranges.

[Figures 2, 3 about here]

For both variables, the probability of change is low when their values are close to zero, i.e. vote and seat shares between parties are stable. As fluctuations in the bonus ratios and parliamentary fragmentation increase, however, the likelihood of electoral rule change begins to rise rapidly.

As per the predictions of the “Dominance Hypothesis”, the probability of change *decreases* when one party has a majority of the seats *and* that party benefits significantly from the status quo. *Ceteris paribus*, the probability of electoral reform increases under single-party majority, as seen by the positive sign of the *SPM* variable. This makes intuitive sense, since a majority party has the legislative fiat necessary to make the electoral system *more* favorable. The interaction term *SPM*Bonus differential* is negative, however, indicating that when the benefits accrued by the largest party increase, the probability of change begins to fall. In other

words, when existing rules are strongly tilted in its favor, the dominant party has weaker incentive to enact reforms.

Finally, the “Constitutional Thickness Hypothesis” argues that when there are strong metainstitutional stipulations about the electoral system, the probability of electoral rule change should decrease. *Formula*, which controls for the difficulty of amending the electoral formula, is statistically and substantively significant and has the predicted negative coefficient. The coefficient itself is not very large – a change in *Formula* from 0 to 3 (the difference between Japan and Ireland) decreases the probability of electoral rule change by only 5%. This small effect may be signifying that in most cases, the biggest impediment to reform is reaching intra- and inter-party agreement on the agenda, not the constitutional process.

Surprisingly, the *Magnitude* variable is positive – indicating that the probability of change actually increases even though the constitution should be making it harder – although it is not statistically significant at conventional levels. The counterintuitive sign on *Magnitude* may be attributable to the fact that including *Magnitude* along with *Formula* is redundant. Theoretically, *Magnitude* should predict changes in district magnitude that occur independent of changes in electoral formula. More often than not, however, changes in the electoral formula and district magnitude happen simultaneously, such as when a change from PR to plurality is naturally accompanied by an increase in the number of districts. Of the 38 changes in the electoral system recorded in the dataset, only 7 were changes solely in the district magnitude.

The results of the logistic regression present the following picture. Parties have incentives to alter electoral rules when they are disadvantaged by the status quo. When the largest party does disproportionately poorly compared to the second party, the former will try to change the system so that the rules are in its favor. The flipside of the coin is also true: the

probability of electoral change is higher when electoral rules disproportionately benefit the largest party, as the second largest party will try to “correct” the system in *its* favor.

There are, however, various constraints that can limit the ability of parties to actually *realize* these incentives. For example, smaller parties are less able to change the system when the largest party has a single-party majority, because the majority party has the legislative fiat necessary to block any attempts by the opposition to eliminate its advantage. At the same time, intra-party conflicts about the effects of reform can lower the likelihood of electoral rule change, although opposition by backbenchers is mitigated when the status quo itself becomes less pleasant. When uncertainty under the extant system rises, due to increasing fluctuation in the bonus ratio or to the distribution of seats among parties in parliament, the party’s aversion to change decreases and the likelihood of electoral reform rises. Finally, the existence of metainstitutional constraints on electoral change dampens the probability of electoral reform. When the constitution “thickly” specifies the electoral system, and when the constitution is difficult to amend, parties have a harder time manipulating the electoral system.

VI. Conclusion

The large-N analysis in this chapter represents one way that I test my hypotheses on electoral rule change. Elsewhere in my dissertation, I explore the dynamics of electoral rule change in greater detail using in-depth case studies of Japan and Ireland.

While Japan and Ireland are not obvious cases for comparison, the countries are similar on two crucial fronts: 1) the party system – both have multi-party parliaments with one dominant party, and 2) the electoral system – both use multi-member districts with a magnitude between three and five. Single-party dominance in both countries (although much more pronounced in Japan) has meant that difficulties in *inter*-party bargaining were rarely the crucial impediment to

electoral rule change. This allows us to examine the independent effects of intra-party bargaining and constitutional limits in greater detail. The similarity in *electoral systems* is significant because it holds the menu of potential electoral rule changes constant. Parties in both countries had the option to make the electoral system more proportionate (by switching to PR with large districts, which benefits the smaller parties) or less proportionate (by switching to plurality rules with single-member districts, which benefits the dominant party).

The innovative feature of these case studies is that they look not just at macro-level features of the electoral system, such as the electoral formula or district magnitudes, but also at what I call *micro-level* specifications. Macro-level rules are those that affect the proportionality of the *translation of votes to seats*. In contrast, micro-level rules are elements of the electoral system that affect the ability of political parties to *win more votes*, such as campaign finance regulations or restrictions on what types of campaigning tactics are permissible. While some of these changes may seem inconsequential, small changes in vote share can make the difference between winning a majority and having to form coalition governments. Indeed, the stylized fact that electoral rules are “sticky” only applies to major electoral rules; *micro-level* features actually change fairly frequently. Most studies tend to ignore these micro-rules, however, because they vary significantly by country, and data on how they change over time are not easy to collect. Figure 4 presents a simple diagram depicting the ways in which *macro-* and *micro-level* rules affect electoral politics.

[Figure 4 about here]

Japan is an interesting case because, as stated earlier, the LDP surprisingly did not change electoral rules even when contemporary simulations projected that reforms could produce

huge gains for the party. Indeed, the LDP's parliamentary majority should have made it possible for the party to implement any institutional change as long as the whole party supported it. This is particularly true given that the Japanese constitution is "thin," i.e. there were no metainstitutional limits preventing a majority coalition from changing the electoral system.

In the Japan chapter, I argue that intra-party conflict over the asymmetrical benefits from major electoral rule change made it impossible for the LDP leadership to forge the consensus necessary to pass a significant reform bill, such as switching from SNTV to plurality rules. What I also show, however, is that the LDP instituted a plethora of *micro*-level changes in campaign finance, campaign regulations, and seat apportionment, all of which substantially favored LDP incumbents over opposition parties. These micro-level rules were easier to pass than major changes because they tend to affect all party members similarly, and thus were subject to fewer intra-part conflicts.

The Ireland chapter elucidates the impact of constitutional thickness on strategic institutional change. Intra-party conflict was less of a constraint than in Japan; Irish voters tend to identify more strongly with party labels, allowing party leaders to use the threat of expulsion to keep rank-and-file MPs in line. This has meant that Irish parties are more able to *initiate* major electoral rule changes, and indeed, Fianna Fáil (the largest party) twice attempted to change the system to plurality rules with single-member districts. In both cases, however, constitutional restrictions on electoral rule change prevented their goals from being realized. Despite these failures, Fianna Fáil – like the LDP – did not simply stick with the status quo, but turned to manipulating other *micro*-level features of the electoral system which were not stipulated by the constitution.

In both the Japanese and Irish chapters, I show how parties worked around constraints – intra-party conflict for Japan and constitutional thickness for Ireland – and altered the electoral

system in minor ways that were to their benefit. Using public opinion polls and legislative data on micro-level electoral rule changes, I examine the *type* and *timing* of electoral rule changes in these two countries over time.

The goal of this dissertation is to show that parties do, in fact, act strategically in manipulating electoral rules so that they can 1) win more votes, and 2) convert those votes into more seats. While existing studies look mainly at *incentives* for change to predict the probability of electoral rule change, I contribute to the literature by pointing out constraints which limit the ability of parties to *implement* those changes. In fact, because *non*-change is a more common occurrence than actual change, we can understand the *strategic* nature of institutional change only by studying *limits* on their power. At the same time, I show that these constraints are not absolute, because parties can make changes to minor rules which are not subject to the same barriers as are major rules. While variations in electoral rules are often reduced to differences in some of its major components, such as the district magnitude or electoral formula, only by looking at how all of the electoral system's features interact can we truly understand the "whens" and "hows" of institutional manipulation.

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Figure 1

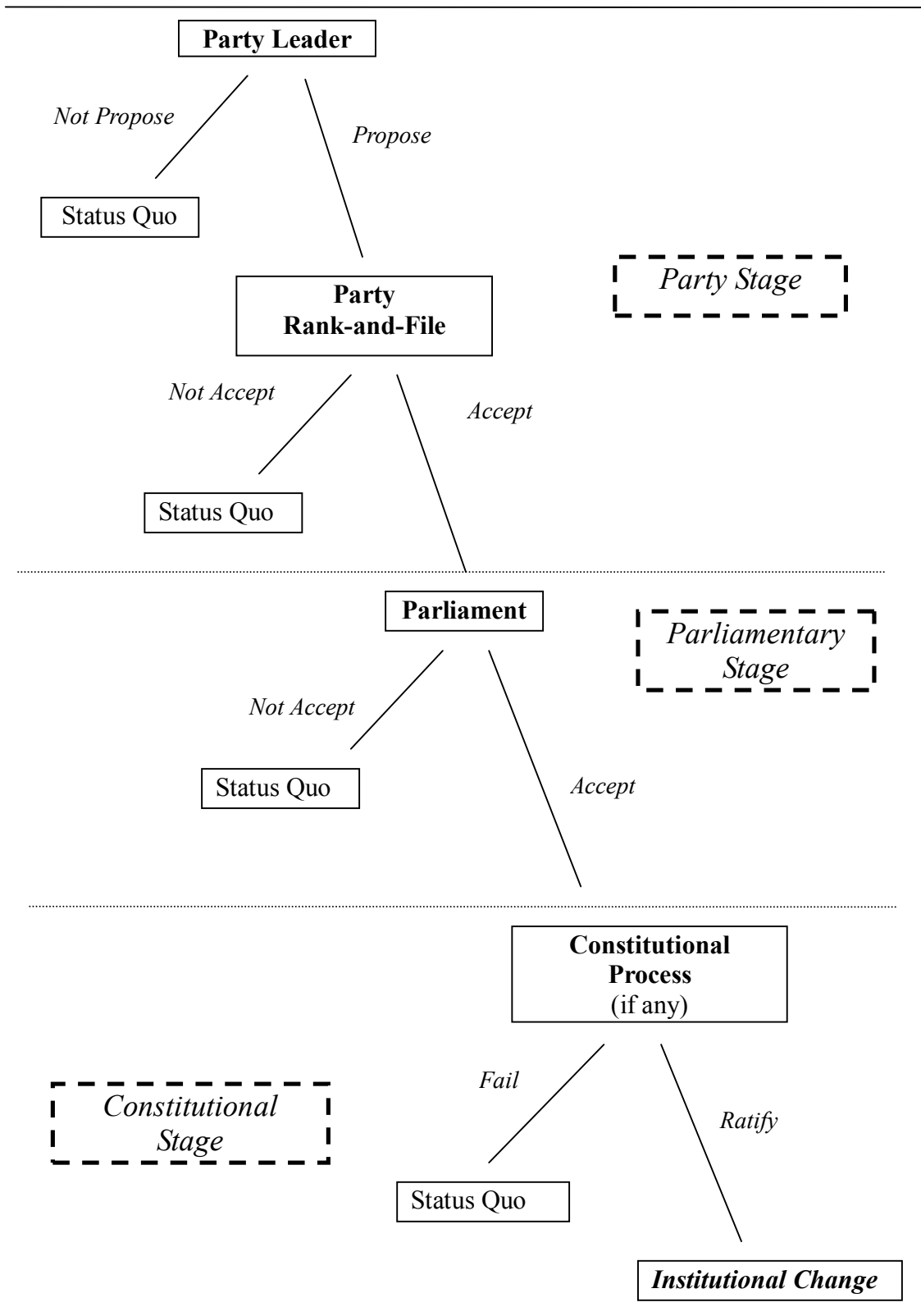


Table 1: Constitutional Thickness of Electoral Rules

Country	Constitution Birth Year ¹	Electoral Formula	District Magnitude	Lutz Index
Austria	1929	Specific	Specific	0.8
Belgium	1831	Specific	Specific	2.85
Britain ²	N/A	Not Specific	Not Specific	0
Denmark	1953	Not Specific	Not Specific	2.75
Finland	1919	Specific	Not Specific	2.3
France	1958	Not Specific	Not Specific	2.5
Germany	1949	Not Specific	Not Specific	1.6
Greece	1975	Not Specific	Not Specific	1.8
Iceland	1944	Specific	Specific	2.75
Ireland	1937	Specific	Not Specific	3
Italy	1947	Not Specific	Specific	3.4
Japan	1946	Not Specific	Not Specific	3.1
Luxembourg	1868	Specific	Specific	1.8
Netherlands	1947	Specific	Not Specific	3.1
Norway	1814	Specific	Specific	3.35
Portugal	1976	Specific	Specific	0.8
Spain	1978	Specific	Specific	3.6
Sweden	1976	Specific	Specific	1.4
Switzerland		Specific	Not Specific	4.75

1. Birth year refers to the promulgation date of that country's most recent constitution. Older constitutional versions were examined where the electoral data starts before the current constitution's birth year. Interestingly, while countries frequently change what type of electoral rule to encode in the constitution, they never vary *whether* to encode those rules, i.e. thick constitutions are always thick.

2. Since Britain does not have a written constitution, I code all electoral rules as being weakly specified.

Table 2: Hypotheses, Variables, Predictions			
Stage	Hypothesis	Independent Variables	Predicted Effect on Probability of Change
Intra-Party	Compensation	Bonus differential Squared Bonus differential	↑
	Unfairness	Bonus loser Bonus loser * Bonus differential	↑
	Conflict Mitigation 1	Bonus differential change Squared Bonus differential change	↑
	Conflict Mitigation 2	Herfindahl change Squared Herfindahl change	↑
	Dominance	SPM SPM * Bonus differential	↓
		Formula	↓
Constitutional	Constitutional Thickness	Magnitude	↓

Table 3: Descriptive Statistics

Dependent Variable			Independent Variables					
Country	# Change	Total Cases	Name	Mean	Median	Std. Dv.	Min.	Max.
Austria	3	16	Bonus Differential	0.059	0.0152	0.223	-0.438	2.039
Belgium	1	17	Squared Bonus Differential	0.053	0.0017	0.301	0	4.157
Denmark	3	21	Bonusloser	0.370	0	0.484	0	1
Finland	0	14	Bonusloser*Bonus Differential	-0.023	0	0.063	-0.438	0
France	4	11	SPM	0.223	0	0.417	0	1
Germany	5	14	SPM*Bonus Differential	0.042	0	0.152	-0.372	1.305
Greece	9	18	Bonus Diff. Change	0.103	0.0350	0.198	0	1.548
Iceland	2	16	Squared Bonus Diff. Change	0.050	0.0012	0.225	0	2.397
Ireland	1	16	Herfindahl Change	-0.003	-0.0005	0.060	-0.277	0.379
Italy	3	11	Squared Herfindahl Change	0.004	0.0004	0.013	0	0.144
Japan	2	19	Formula	1.524	1.4	1.505	0	4.75
Luxembourg	0	9	Magnitude	0.956	0	1.302	0	3.6
Netherlands	1	16						
Norway	3	14						
Portugal	0	9						
Spain	0	7						
Sweden	2	17						
Switzerland	0	13						
UK	0	15						
Total	39	273						

Table 4: Logistic Regression Results

Dependent Variable = Change in Electoral Rules

T-statistic in parentheses (based on robust standard errors)

N=274

	Model 1	Model 2	Model 3
<i>Intercept</i>	-2.93 (-5.04) ***	-3.32 (-5.33) ***	-3.35 (-3.33) ***
<i>BonusDifferential</i>	5.02 (1.68) *	10.03 (2.62) ***	14.70 (2.76) ***
<i>BonusDifferential</i> ²	-2.86 (-1.48)	-4.76 (-2.62) ***	-6.92 (-2.74) ***
<i>Bonusloser</i>	0.47 (0.77)	0.57 (0.96)	0.81 (1.26)
<i>Bonusloser*BonusDifferential</i>	-7.85 (-1.14)	-14.26 (-1.94) *	-20.26 (-2.40) **
<i>BonusDifferential change</i>	-6.23 (-1.53)	-5.87 (-1.75) *	-5.48 (-1.52)
<i>BonusDifferential change</i> ²	8.62 (1.51)	8.73 (2.34) **	8.93 (2.21) **
<i>Herfindahl change</i>	-3.61 (-1.12)	-2.37 (-0.72)	-1.46 (-0.47)
<i>Herfindahl change</i> ²	24.89 (1.51)	28.10 (1.69) *	28.14 (1.74) *
<i>SPM</i>		0.80 (1.00)	0.84 (0.93)
<i>SPM*BonusDifferential</i>		-7.02 (-2.01) **	-10.41 (-2.17) **
<i>Formula</i>			-1.17 (-3.42) ***
<i>Magnitude</i>			0.51 (0.32)
Null Deviance: 223.92, df. 272			
Log pseudo-likelihood:	- 89.42	- 87.54	- 82.61
*** p<.01, ** p<.05, * p<.1			

Table 5: Predicted Probability of Electoral Rule Change (Compared to baseline probability where all variables are set at median values)			
Variable Type / Value	<i>+ 1 Standard Deviation</i>	<i>+ 2 Standard Deviations</i>	<i>Max</i>
<i>Bonus differential</i>	13.84%	51.40%	15.54%
<i>Bonus loser</i>	2.30%	3.71%	24.45%
<i>SPM</i>	-0.56%	-1.04%	-1.04%
<i>Bonus differential change</i>	-0.55%	-0.36%	89.76%
<i>Herfindahl change</i>	-0.01%	0.37%	31.67%
<i>Formula *</i>	-3.81%	-4.66%	-4.90%
* For meaningful analysis, predicted probabilities for changes in <i>Formula</i> are calculated relative to <i>Formula</i> = 0, not the median (1.4).			

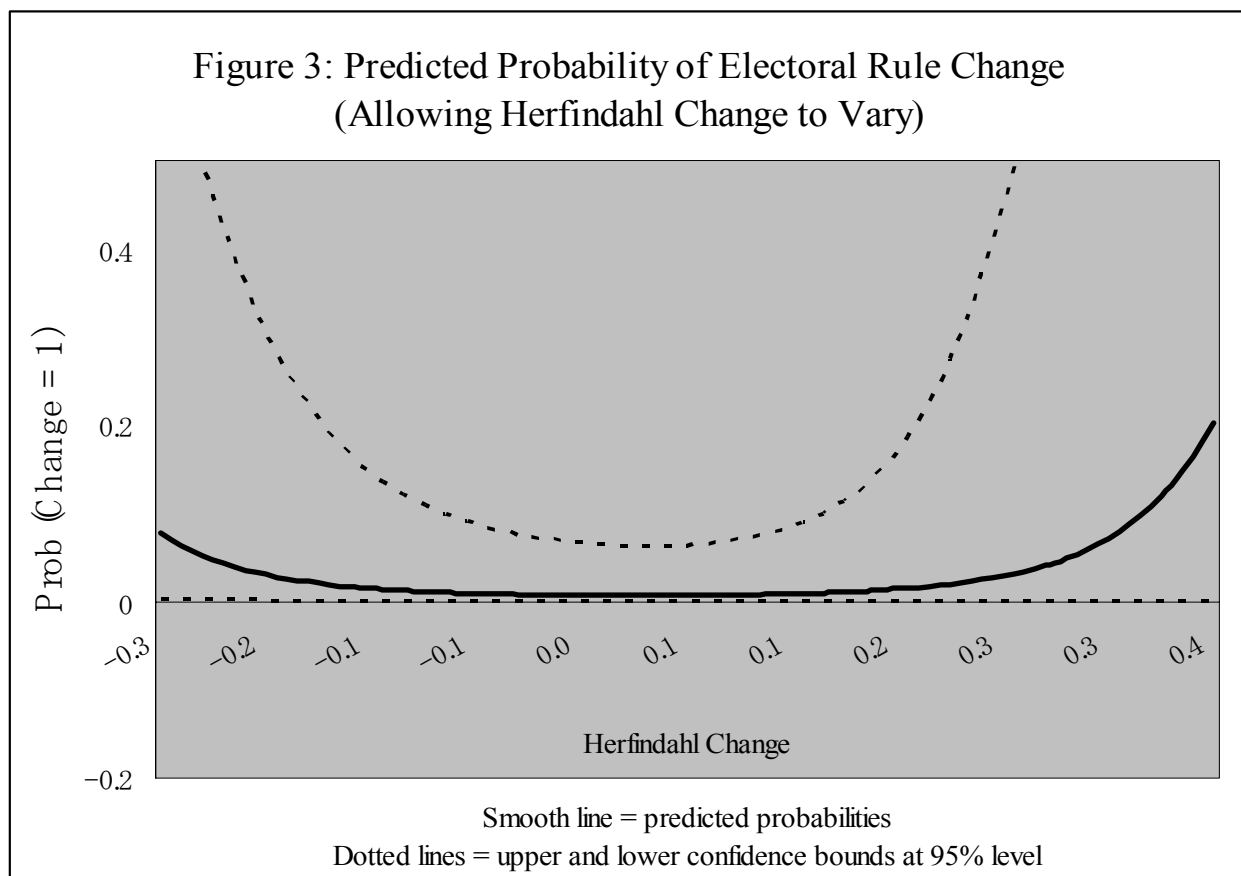
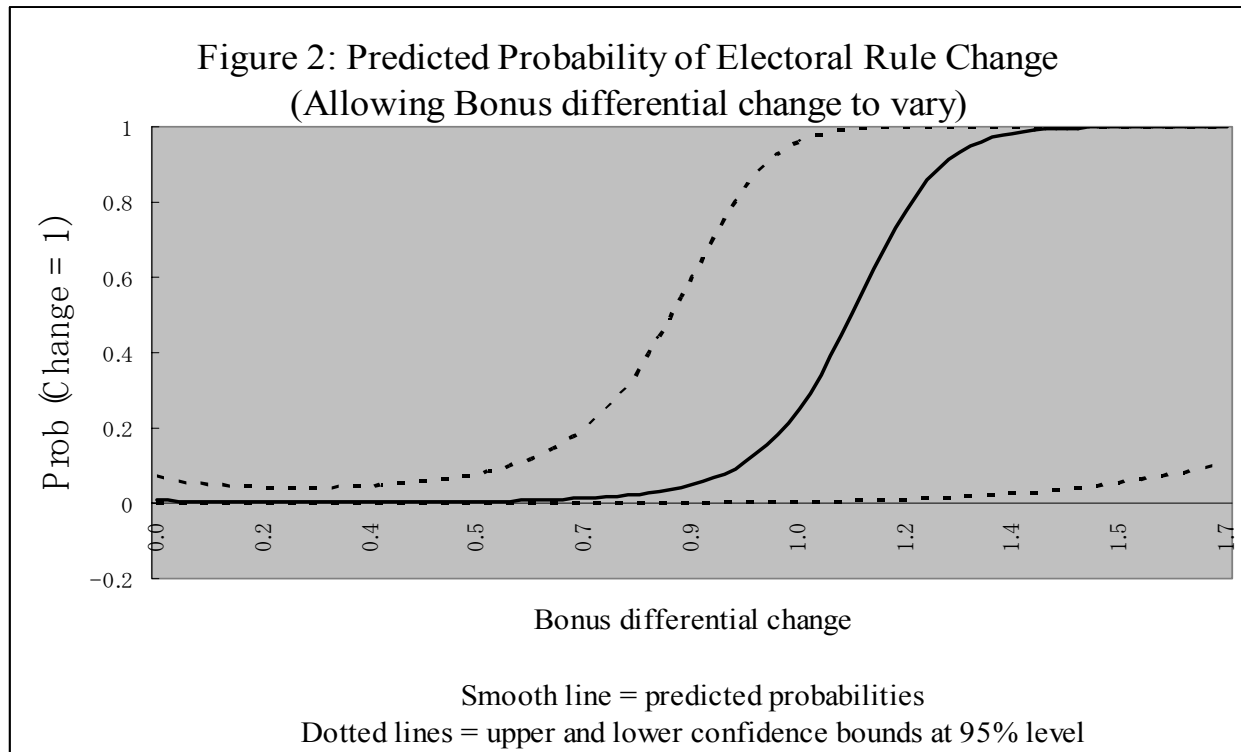
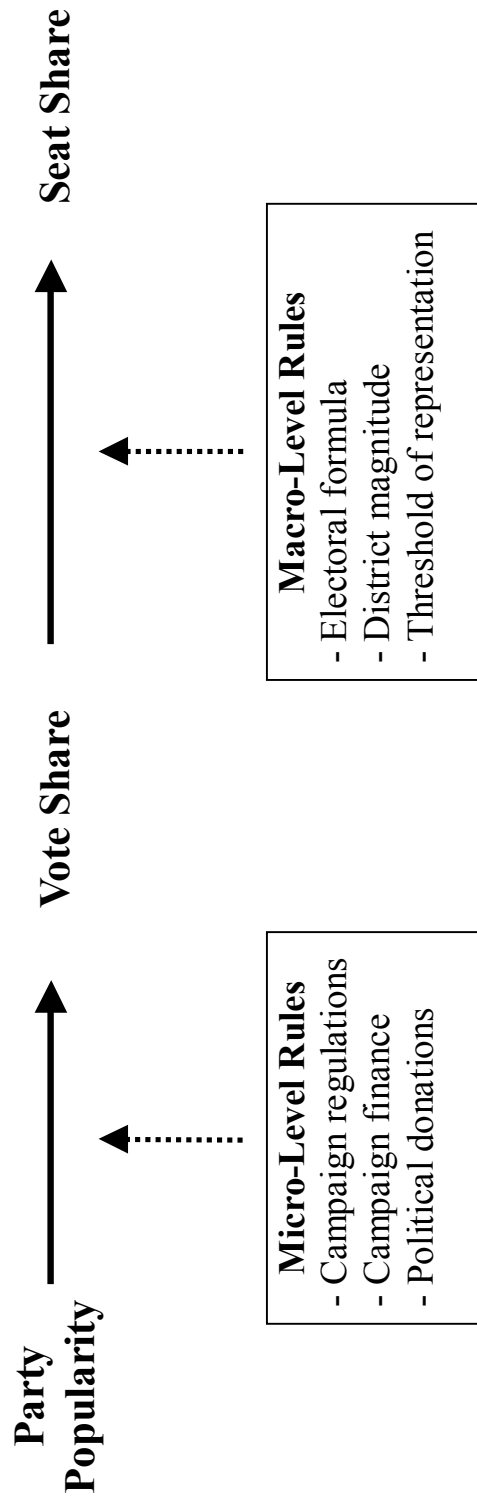


Figure 4: How Electoral Rules Affect Election Outcomes



Appendix

Norway (663 words)	Japan (26 words)
<p>Article 58.1) Each county constitutes a constituency</p> <p>Article 58.2) One hundred and fifty-seven of the Representatives of the Parliament [Storting] are elected as representatives of constituencies and the remaining 8 representatives are elected so as to achieve a greater degree of proportionality.</p> <p>Article 58.3) Representatives of constituencies are distributed among the constituencies of the Realm as follows: 8 are elected from the county of Ostfold, 15 from Oslo, 12 from the county of Akershus, 8 from the county of Hedmark, 7 from the county of Oppland, 7 from the county of Buskerud, 7 from the county of Vestfold, 6 from the county of Telemark, 4 from the county of Aust-Agder, 5 from the county of Vest-Agder, 10 from the county of Rogaland, 15 from the county of Hordaland, 5 from the county of Sogn og Fjordane, 10 from the county of More og Romsdal, 10 from the county of Sor-Trondelag, 6 from the county of Nord-Trondelag, 12 from the county of Nordland, 6 from the county of Troms, and 4 from the county of Finnmark.</p> <p>Article 59) (3) The election of representatives of constituencies is based on proportional representation and the seats are distributed among the political parties in accordance with the following rules.</p> <p>(4) The total number of votes cast for each party within each separate constituency is divided by 1, 4, 3, 5, 7 and so on until the number of votes cast is divided as many times as the number of seats that the party in question may expect to obtain. The party which in accordance with the foregoing obtains the largest quotient is allotted the first seat, while the second seat is allotted to the party with the second largest quotient, and so on until all the seats are distributed. If several parties have the same quotient, lots are drawn to decide to which party the seat shall be allotted. List alliances are not permitted.</p> <p>(5) The seats at large are distributed among the parties taking part in such distribution on the basis of the relation between the total number of votes cast for the individual parties in the entire Realm in order to achieve the highest possible degree of proportionality among the parties. The total number of seats in the Parliament [Storting] to be held by each party is determined by applying the rules concerning the distribution of constituency seats correspondingly to the entire Realm and to the parties taking part in the distribution of the seats at large. The parties are then allotted so many seats at large that these, together with the constituency seats already allotted, correspond to the number of seats in the Parliament [Storting] to which the party in question is entitled in accordance with the foregoing. If according to these rules two or more parties are equally entitled to a seat, preference shall be given to the party receiving the greatest number of votes or, in the event of a tie, the one which is chosen by drawing lots. If a party has already through the distribution of constituency seats obtained a greater number of seats than that to which it is entitled in accordance with the foregoing, a new distribution of the seats at large shall be carried out exclusively among the other parties, in such a way that no account is taken of the number of votes cast for and constituency seats obtained by the said party.</p> <p>(6) No party may be allotted a seat at large unless it has received at least 4 per cent of the total number of votes cast in the entire Realm.</p> <p>(7) The seats at large obtained by a party are distributed among that party's lists of candidates for constituency elections so that the first seat is allotted to the list left with the largest quotient after the constituency's seats are distributed, the second seat to the list with the second largest quotient, and so on until all the party's seats at large have been distributed.</p>	<p>Article 47: Electoral districts, method of voting, and other matters pertaining to the method of election of members of both Houses shall be fixed by law.</p>