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Party duration : examining the effects of incumbent party tenure on election outcomes

Jason John Thomas
University of Iowa

PARTY DURATION: EXAMINING THE EFFECTS OF INCUMBENT PARTY TENURE ON ELECTION OUTCOMES

by

Jason John Thomas

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Thesis Supervisor: Professor William Reisinger

Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

PH.D. THESIS

This is to certify that the Ph.D. thesis of

Jason John Thomas

has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Political Science at the August 2015 graduation.

Thesis Committee: _____
William Reisinger, Thesis Supervisor

_____
Frederick Boehmke

_____
Douglas Dion

_____
Tom Rice

_____
Forrest Nelson

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ABSTRACT

What consequences arise as a result of repeated control of the legislature by the same party or coalition? Are incumbent parties less likely to lose an election the longer they remain in power? Furthermore, as parties remain in power longer and longer, do the factors which electoral scholars have proposed influence elections have less of an impact on election outcomes?

The purpose of this project is to examine the electoral impact of repeated control of the legislature by the same party or ruling coalition. In this project, I argue that the length of time an incumbent party or coalition has maintained control of the legislature is a critical consideration for scholars interested in studying elections. In doing so, I hope to develop a better understanding of elections, the factors which influence election, and the mechanisms by which these factors affect election outcomes.

Central to this project is the phenomenon I call *party duration*. I define party duration as the number of years the incumbent party has maintained control of the legislature in unicameral legislatures or the lower house in bicameral legislatures. This is the party that has secured enough seats to control the legislature independently in cases where a single party controls the legislature, or the party that serves as the largest party in the ruling coalition that controls the legislature in cases where a single party does not control the legislature by itself.

Using cross-sectional time-series analysis to study a novel dataset, I show that not only does increasing party duration decreases the likelihood that an incumbent

party will lose an election, controlling for various other factors, but I find evidence that party duration also affects the effect of other variables which influence elections. Specifically, I focus on the impact that the length of party duration has on the effect of economic conditions on the incumbent party's performance in elections. These findings highlight the importance of party duration, a variable which has previously not received attention from electoral scholars.

PUBLIC ABSTRACT

In this project, I examine how the length of time an incumbent party remains in power, affects the outcome of elections. Specifically, I consider how increasing the length of time an incumbent party remains in office affects the likelihood that party loses an election.

I created a novel dataset to study party duration, defined as the number of years an incumbent party has controlled the legislature. Using cross-sectional time-series analysis, I find that increasing party duration not only decreases the likelihood that an incumbent party loses an election, but that it also decreases the effect of other variables which have been shown to impact elections. Using a multiplicative interaction, I find that increasing party duration can insulate incumbent parties from the electoral impact of economic conditions, another variable political scientists have established to influence elections.

This project has important implications both for political scientists interested in studying elections and citizens of democratic countries which use elections to hold elected governments accountable.

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INTRODUCTION

1.1 General Overview

For democratic scholars, legislative turnover is widely held to be a necessary element for a country to be classified as a democracy. In their definition of democracy, Przeworski and Limongi (1997) require alternation of office before a regime can be classified as a democracy while Huntington (1993) took the requirement further, requiring two legislative turnovers. Others have similarly argued that democracy cannot exist without turnover (Lijphart, 1999; Giliomee and Simkins, 1999; Du Toit, 1999). However, in various established democracies, incumbent parties have maintained control of the legislature for extend periods of time (The Indian National Congress Party from 1952 to 1976, The Christian Democratic Party (CDP) in Italy from 1948 and 1992, Japan's Liberal Democratic Party (LDP) from 1958 to 1993, The Swedish Social Democrats (SAP) from 1932 to 1976, Denmark's Social Democrats from 1924 to 2001, etc.).

What consequences arise as a result of repeated control of the legislature by the same party or coalition? Are incumbent parties less likely to lose an election the longer they remain in power? Furthermore, as parties remain in power longer and longer, do the factors which electoral scholars have proposed influence elections have less of an impact on election outcomes?

The purpose of this project is to examine the electoral impact of repeated

control of the legislature by the same party or ruling coalition. In this project, I argue that the length of time an incumbent party or coalition has maintained control of the legislature is a critical consideration for scholars interested in studying elections. In doing so, I hope to develop a better understanding of elections, the factors which influence election, and the mechanisms by which these factors affect election outcomes.

A central idea which underlies this project is the phenomenon I call *party duration*. I define party duration as the number of years the incumbent party has maintained control of the legislature in unicameral legislatures or the lower house in bicameral legislatures[1]. In the simplest case, this is the party that has secured enough seats to control the legislature independently. However, in many countries where a single party cannot control the legislature by themselves, this can also be the party that serves as the largest party in the ruling coalition that controls the legislature.

Using cross-sectional time-series analysis to study a novel dataset, I show that increasing party duration decreases the likelihood that an incumbent party will lose an election, controlling for various other factors. Additionally, by examining the relationship between party duration and economic conditions, I find evidence that party duration not only affects the outcome of elections, but also the effect of other variables which influence elections. These findings highlight the importance of party duration, a variable which has previously not received attention from electoral scholars.

[1]Scholars like Lijphart (1999) hold that the lower chamber is generally more important and responsive in countries with bicameral legislatures.

1.2 Political Parties and Elections

Political parties are a political institution, are a staple in liberal democratic regimes, and matter for the political process in a given country (Schattschneider, 1942; Sartori, 1976; Mainwaring, Scully et al., 1995; Diamond and Gunther, 2001; Levy, 2004). Parties are comprised of various factions and politicians and exist to facilitate compromise between numerous competing interests (Sartori, 1976; Levy, 2004). However, this was not always the case. In their early days political organizations were called factions, not political parties. Given their ubiquity in democratic systems today, it is surprising that many warned against the formation of factions in the early days of modern democracy. For instance, James Madison famously warned against the dangers of factions, groups of citizens united by a common interest, going so far as to call them "the mortal diseases under which popular governments have everywhere perished; as they continue to be the favorite and fruitful topics from which the adversaries to liberty derive their most specious declamations"(Madison, 1787). Similarly, in his Farewell Address at the end of his second term, Washington cautioned the American people against both political factions and political parties (Washington, 1796).

As populations grew, direct democracy became less and less feasible. Voters delegated their voice to politicians who created or joined parties to coordinate their activities (Boix, 2007). Parties grew to serve as a crucial link in the democratic process, connecting the public to the political decision makers, a role that distinguishes them from factions (Sartori, 1976; Dalton, 1985). Studying political parties in Amer-

ica, Aldrich (1995) explained the emergence of political parties through models of rational choice. He argued that political parties offered politicians the advantages of resources and reputation, and helped to mobilize supporters. Furthermore, parties helped elected politicians remain in power.

Sartori (1976) defined political parties by three crucial criteria. First, parties are distinct from faction (the groupings of people which preceded the development of parties), but are functional agents which link voters to the government. Parties are part of the political system, serve distinct purposes, and fulfil specific roles. Second, parties are part of a whole which also includes the public and public interests. Sartori stated that parties exist to serve the whole and they must govern for all, not just themselves. Finally, parties are channels of expression. They represent the people by expressing their demands and developed to convey the wishes of the people to those in authority. Sartori argued that responsible government is only responsive because parties provided the necessary channels for communicating and implementing the demands of the governed.

Since their emergence, political parties have taken on various forms through the development of democratic societies. The earliest parties, caucus or cadre parties, were smaller and were constructed around quality rather than numbers. They were primarily built around groups of notables and constructed to prepare for elections and to maintain contact between candidates and their elite supporters (Duverger, 1954; Neumann and Barghoorn, 1956). However, as electorates expanded and more citizens were given the right to vote, a new form of party emerged. These new types

of parties, called mass parties, were designed to appeal to the masses along specific lines (Schattschneider, 1942; Duverger, 1954; Mair, 1990). Scholars like Lipset and Rokkan (1967) argued that party systems reflected the cleavage structures in society. As the political process became more professionalized and politicians became driven by the goal of holding office (Downs, 1957), catch-all parties, concerned primarily with electoral successes over all else, started to emerge and began to replace the mass parties (Kirchheimer et al., 1966; Wolinetz, 1979; Katz and Mair, 1995).

However, elections do not occur in only democracies. Authoritarian countries also often hold elections, although most would agree that these elections are not free and fair, and are therefore not legitimate. Scholars like Diamond (2002) have argued that authoritarian countries have often incorporated superficial democratic institutions due to a rise in both domestic and international pressure to incorporate democratic practices. However, this project only focuses on elections in democratic countries (identified by receiving a score from 6 to 10 from Polity IV). Non-democratic countries are excluded from my analysis because this project looks to examine how party duration affects the outcome of elections by examining its effects on voter behavior. In authoritarian countries, the length of time the incumbent party has controlled the legislature does not affect the outcome of the election or the behavior of the voters because the outcome of the election is a foregone conclusion. In an authoritarian country, whether the incumbent party has controlled the legislature for two years or twenty years has no impact on the election - the incumbent party is already guaranteed to win.

While electoral turnover is typically the norm in democratic countries, several cases have existed where a single party managed to maintain control of the legislature for extended periods of time. Scholars interested in these unique cases referred to the phenomenon as *dominant party systems*. However, these scholars referred to dominant parties without clearly operationalizing the concept. Typically, the term applied to parties which were significantly stronger than their challengers. The concept received a more concrete definition from Sartori (1976) who defined a (pre-)dominant party system as "a more-than-one party system in which rotation does not occur" because a single party wins "an absolute majority of seats in parliament," with an exception in the case of countries that "unquestionably abide by a less-than-absolute majority principle," for three consecutive elections. Bogaards (2004) built on this definition, adding the criteria that there is no divided government when applicable.

While Sartori's definition is the most widely used by scholars of dominant parties, his criteria that a party win three consecutive elections was arbitrarily drawn. Why three elections, and is a party which wins three elections over six years the same as a party which wins three elections over fifteen years? Without a theoretical foundation to ground the definition, various other scholars developed their own definitions of party dominance to study countries, cases, or concepts that captured their attention. For instance, Coleman (1960) argued that dominant parties should refer to parties that dominate in a specific election. He defined dominant parties as those that were able to secure at least seventy percent of the vote in a single election.

Ware (1996) developed a similar definition, but only required a party to win

between forty-five and fifty percent of the vote. However, Ware also stated that a party must 'usually' win elections. Blondel (1968) defined dominant parties by a similar threshold, requiring the party to win between forty and fifty percent of the vote, but also required the party to receive more than double the number of votes as the next closest party. Like Sartori, Pempel (1990) identified dominant parties as parties that won a plurality of the vote for "a substantial period of time." Unfortunately, Pempel's definition left the length of time open to interpretation.

Scholars interested in studying dominant parties have primarily been interested in studying specific cases of party dominance or regions where regimes fit a specific definition to understand the factors that give rise to dominant parties and what factors impact their fall from power (e.g. Pempel (1990), Schlesinger (1999), and Greene (2007)). Rather than examining a single case or region, I have conducted a cross-national study into the effects of party duration to develop a broader understanding of its effects on the outcome of election. Furthermore, instead of fitting my project under the umbrella of dominant party research, which is mired by competing definitions, I have chosen to examine the tenure of the incumbent party, which I call party duration. I propose that the length of time a party controls the legislature impacts the behavior of voters and the outcome of democratic elections.

Additionally, I also examine the relationship between party duration and the state of the economy. Scholars of economic voting have long established that the state of the economy is one of the best predictors of the outcome of elections (Bean, 1948; Kramer, 1971; Lewis-Beck, 1988; Lewis-Beck and Stegmaier, 2007). Furthermore, its

effects have been shown to hold cross-nationally, and in a variety of circumstances. While there are various other factors which scholars have suggested can influence the outcome of elections (e.g. ethno-linguistic fractionalization (ELF) (Tavits, 2005) and diversionary uses of force (Mueller, 1970; Russett et al., 1990; Morgan and Bickers, 1992)) I have chosen to develop a more parsimonious model and only considered two key independent variables: party duration and the state of the economy.

1.3 The Impact of Party Duration on Elections

This project bridges the work done by scholars interested in studying election outcomes, electoral volatility, and economic voting. The proposed relationships encapsulating party duration, economic voting, and election outcomes explored in this project are depicted visually in Figure 1.1.

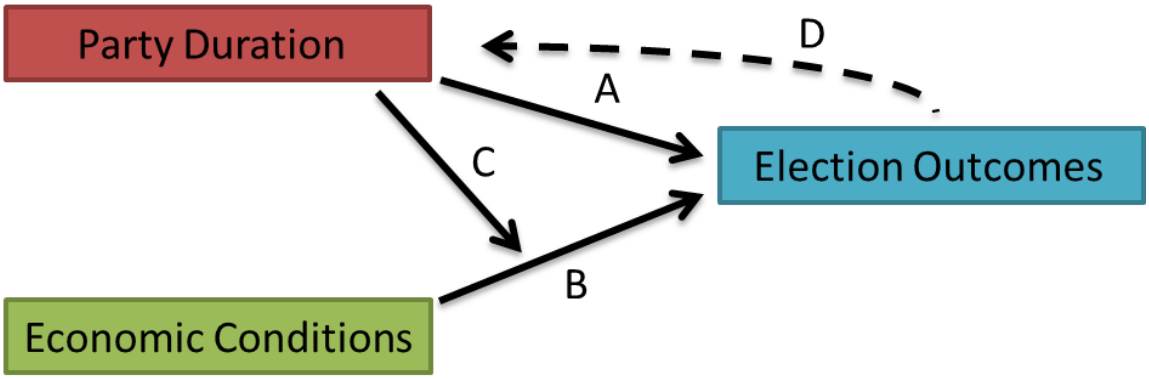

Figure 1.1: Proposed relationships between key concepts.

This project focuses on three major relationships indicated by Arrows A, B, and C. In the later chapters, I will go into greater detail to expand on these concepts and relationships. What follows is a brief introduction to the main relationships between the key variables examined in this project.

Arrow A - The effect of incumbent party duration on election outcomes.

One of the central claims of this project is that the length of time the incumbent party controls the legislature (or the lower chamber in bicameral legislatures) affects the likelihood that the incumbent party will lose an election. Specifically, as the number of years the incumbent party controls the legislature increases, the likelihood of losing an election will decrease, demonstrating a decreasing hazard function. Holding all other variables constant, an incumbent party which has controlled the legislature for twenty years will have a lower hazard rate than a party which has controlled the legislature for ten years, which will have a lower hazard rate than a party which has only controlled the legislature for two years. This proposed relationship between party duration and the outcome of elections is highlighted in Figure 1.2.

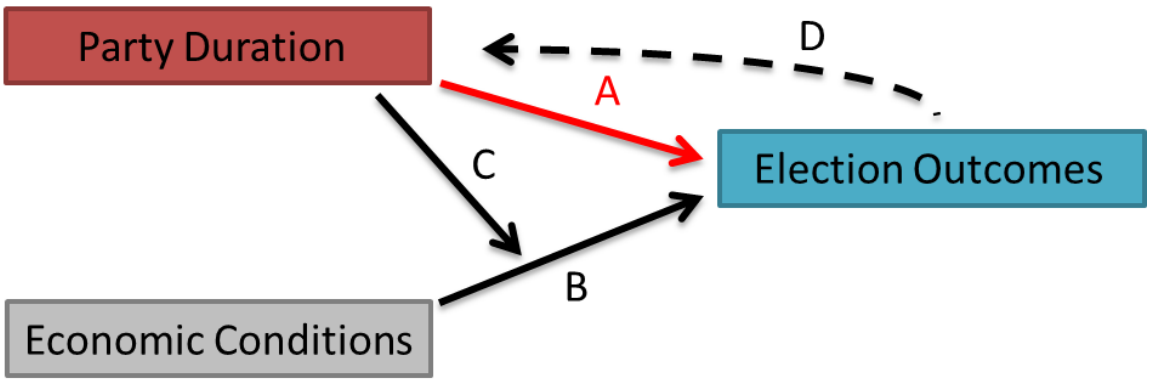

Figure 1.2: Proposed relationship between Party Duration and Election Outcomes.

To examine the relationship between party duration and election outcomes, I focus on studying the likelihood that the incumbent party loses an election as party duration increases. I also examine how the the seat and vote shares obtained by the incumbent party change in response to increased party duration to better understand the mechanisms by which party duration influences election outcomes.

There are a number of causal mechanisms that can lead to this increased electoral security for the incumbent party, many which have been studied by scholars

of the incumbent advantage. These range from the ability to deter quality challengers (Leuthold, 1968; Krasno and Green, 1988; Carson, 2003), to better salience for the incumbent party and its candidates (Stokes and Miller, 1962; Parker, 1981), to control of electoral rules (Erikson, 1972*a*; Tufte, 1973). Given that candidates are primarily concerned with holding office (Downs, 1957), increasing party duration leads a party to appear stronger and more stable, making it more appealing to quality candidates who are interested in winning elections. The longer a party is in office, the more opportunities a party possesses to make an impression on the electorate, increasing their salience. Additionally, compared to parties with smaller party durations, parties that have held office for more years have more opportunities to control and bend electoral rules.

Arrow B - The effect of economic conditions on election outcomes.

Of the three main relationships, the one that has already been well-studied by scholars is the the role of economic conditions on elections, depicted by the red arrow in Figure 1.3. Scholars who have studied economic voter theory have long established that election outcomes are influenced by economic conditions (see Bean (1948); Kramer (1971); Lewis-Beck (1988); Alesina, Cohen and Roubini (1993), etc). Central to economic voter theory is the reward-punishment hypothesis which argues that voters will hold the government accountable for the state of the economy. During periods of economic prosperity, incumbents are rewarded by voters, while conversely, when facing economic turmoil, incumbents are punished (Lewis-Beck and Stegmaier, 2007).

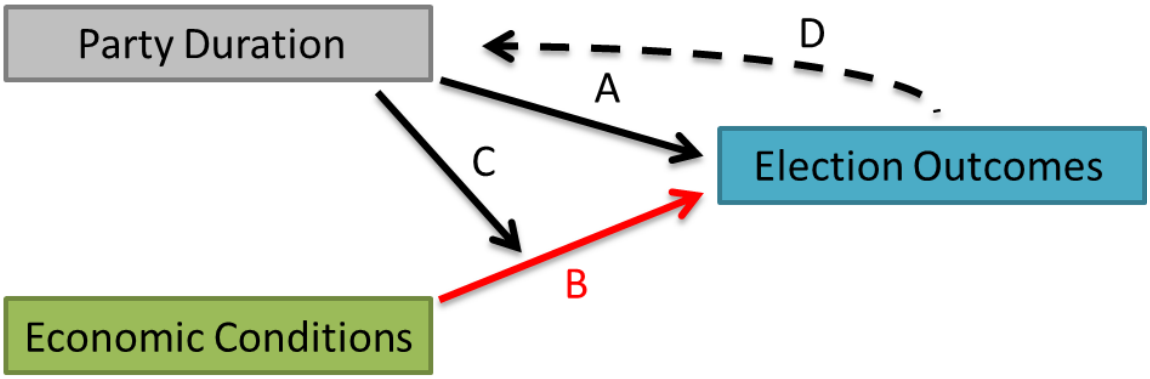

Figure 1.3: Proposed relationship between Economic Conditions and Election Outcomes.

Scholars have built upon this hypothesis while attempting to better understand the mechanisms by which economic conditions enter into the voting calculus. Scholars have found evidence that voters are both retrospective and prospective (Fiorina, 1981; Lewis-Beck, 1986; Norpoth, 2004) and that sociotropic concerns outweight egotropic concerns (Kinder and Kiewiet, 1979; MacKuen, Erikson and Stimson, 1992; Anderson, 2000).

Congruent with this literature, holding all other variables constant, incumbent parties are expected to be more likely to lose an election following a decline in economic conditions in the year preceding an election, as measured by changes in the GDP per capita. Conversely, GDP per capita growth is predicted to decrease the likelihood that the incumbent party loses an election. In the aggregate, voters are expected to evaluate the current state of the economy and select the party that will be better able to manage the economy into the future.

Arrow C - The effect of incumbent party duration on the effect of economic conditions on election outcomes.

Arrow C, emphasized in Figure 1.4, ties the three key variables together and is one of the central arguments of this project – that party duration not only affects the outcome of elections, but also affects the effect of other variables that influence

elections. Increasing party duration is predicted to decrease the effect of economic conditions on elections. This suggests that the effect of the economy on elections (described by the aforementioned Arrow B) is conditional on party duration, holding all other factors constant. A multiplicative interaction is used to capture how the effect of the state of the economy on election outcomes changes in response to increasing party duration.

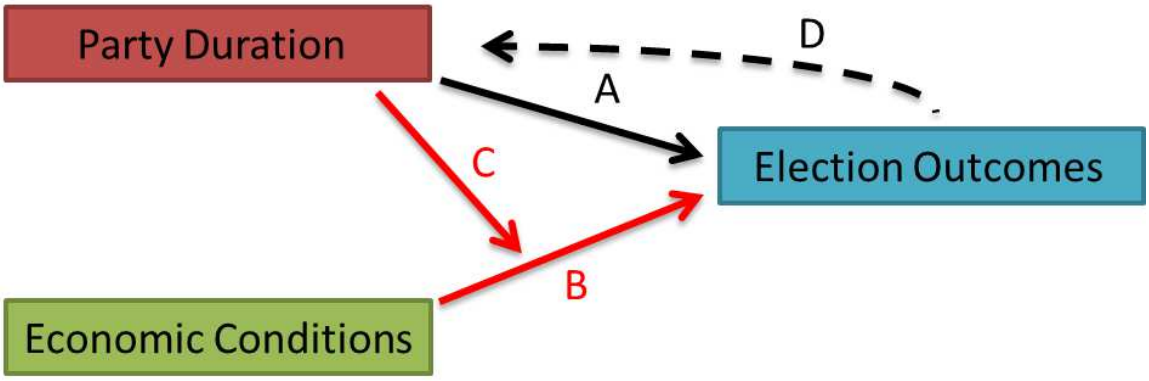

Figure 1.4: Proposed relationship between Party Duration and the Effect of Economic Conditions.

Scholars of game theory and rational behavior argue, when faced with a decision, agents will behave to reduce their costs and/or maximize their utility. For instance, consider an agent faced with a choice between option A which returns a utility of 10 and option B which rewards a utility of 15. A rational actor will always choose option B since it rewards the higher utility. However, consider if 75 percent of the time, option A rewarded a utility of 10 and 25 percent of the time returned a utility of 5, while option B returned a utility of 15 only 37.5 percent of the time while returning a utility of 5 62.5 percent of the time. Both option A and option B return an expected utility of 8.75 and are therefore indistinguishable to the agent. However, if the agent is risk-averse, for instance, if the agent places an additional weight on receiving a higher utility more often or conversely, if the agent penalizes the choice where the greater reward occurs less frequently, then the agent's behavior can deviate

from the typical Nash predictions (Camerer, 1997; Goeree, Holt and Palfrey, 2003). In fact, some have argued that that the framing strategies employed can influence an agent's behavior in the face of risk; agents are more likely to take risks when faced with loses rather than when faced with gains (Neale and Bazerman, 1991; Tversky and Kahneman, 1992).

I contend that the electorate, in the aggregate, is an agent looking to maximize its utility with each election and is risk-averse. There exists a threshold below which economic conditions must decline for a critical percentage of the electorate to decide to replace the incumbent party. As party duration increases, this threshold falls due to risk-averse voters becoming less willing to take a gamble with an unknown and untested challenger, even in the face of declining economic conditions. While there will be minor shifts in policy, voters will believe that the incumbent party will not drastically deviate from its prior policies from one election to the next. However, the myopic electorate (see Fair (1978); Kietiet (1983); Rosenstone and Behr (1984); Markus (1988)) can only evaluate the promises and claims of the opposition with no record. Therefore, even as economic conditions decline, risk-averse voters will continue to prefer to support an incumbent party with a long tenure, believing that the incumbent party's established policies will be able to return the economy to its previous state. Increasing party duration will therefore decrease the economic threshold that economic conditions must decline for the electorate, in the aggregate, to decide to replace the incumbent party.

Furthermore, as party duration increases, incumbent parties are able to use their previous economic successes to alleviate the concerns of the electorate during periods of economic trouble. Voters in several countries have exhibited this tendency to support incumbent parties with large party durations even in the face of economic turmoil (Sweden's Social Democrats (Esping-Andersen, 1990), Japan's Liberal Democratic Party Inoguchi (1990), and the Christian Democrats in Italy (Pempel,

1990)).

Arrow D - The effect of election outcomes on incumbent party duration.

When the incumbent party wins an election, the value of incumbent party duration increases. This can be an increase of only one year if there is an election in the subsequent year, or it can increase by multiple years if there are multiple years before the next election. Elections outcomes are measured annually for this project (if there is an election in year t, does the incumbent party win enough seats to maintain control of the legislature?), so each electoral victory translates to an increase of at least one year. Conversely, if the incumbent party loses an election or no longer is in the ruling coalition, this variable resets to zero since a new party takes control of the legislature. This relationship is accented in Figure 1.5.

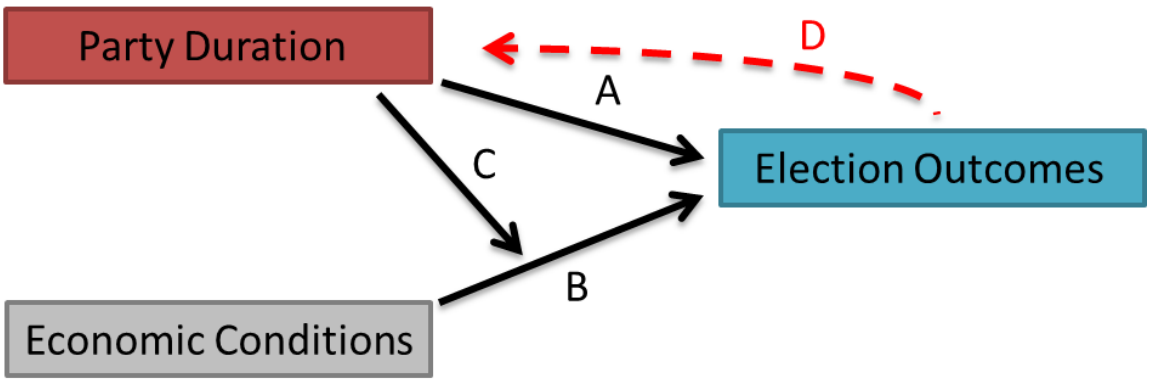

Figure 1.5: Relationship between Election Outcomes and Party Duration.

1.4 Contributions

This project contributes to the discipline and the study of elections in a number of ways. First, while I am not the first to suggest that the length of party tenure can have an impact on the outcome of elections, thanks largely to the dataset I have created, I show the effect that increasing party duration has on the likelihood that an incumbent party loses an election. Scholars like Maeda and Nishikawa (2006)

have looked at the effect of the length of tenure on the electoral successes of chief executives, but no scholars have previously applied that framework to understand the effects of the length of tenure on legislative elections.

Second, I propose that party duration has a unique effect on elections, which has not been considered previously. Not only does increasing party duration decrease the likelihood that an incumbent party loses an election, but I find that it affects the effect of other variables on election outcomes. In this project, I demonstrate that the effect of economic conditions, a key variable used by scholars to explain election outcomes, is moderated by party duration and can be better understood by taking into account the relationship between party duration and economic conditions.

Furthermore, I have developed a novel dataset to study election outcomes. To my knowledge, no other comprehensive dataset which provides data on the outcome of elections in as many countries and across as wide a time period exists. This dataset records the election outcome of every democratic election across a two-hundred year period.

These findings have major implications for scholars interested in studying elections and elections outcomes. Not only do I illustrate that party duration has been an overlooked variable, but I also show the conditional relationship it can have with other variables; in this case, the state of the economy. This finding suggests that the effect of party duration could have potential implications for numerous other variables and factors which political scientists and electoral scholars have studied. While examining the relationship between party duration and other variables which scholars have shown to impact elections is beyond the scope of this project, future work must consider this conditional relationship.

Additionally, outside of political science research, there are also major implications to these findings. As I described previously, turnover is a crucial element to ensure a elected governments remains responsive to the citizens whom elected them.

However, I show that as a party remains in power longer, increasing party duration, they become less likely to lose an election and are even able to insulate themselves against economic turmoil. In effect, as party duration increases, incumbent parties are held less accountable by the electorate.

1.5 Dissertation Outline

This dissertation will show that as party duration, the length of time that a party controls the legislature, increases, incumbent parties become less likely to lose an election, controlling for various other factors. Therefore, I will show that party duration is a crucial variable for scholars to consider when studying elections and election outcomes. The rest of this dissertation project will proceed as follows:

In Chapter 2, I introduce the dataset constructed for this project. Additionally, I examine the relationship between my key independent variable, party duration, and my primary dependent variable, whether the incumbent party lost an election or not, largely through bivariate regression models. The purpose of this chapter is to describe the dataset and take an exploratory look at several key variables.

Chapters 3 and 4 focus on the effect of party duration on the outcome of elections, holding other variables constant. In Chapter 3, I review the relevant literature on elections, electoral volatility, and the incumbent advantage. I then move on to the empirical analysis in Chapter 4 which shows the impact of increasing party duration on the likelihood of incumbent party loss. I then examine two mechanisms by which party duration can influence the outcome of elections tied to winning party seat share and vote share.

In Chapters 5 and 6, I take a closer look at the relationship between party duration and economic conditions. Chapter 5 reviews the rich literature on economic voter theory before Chapter 6, in which I move onto my empirical analysis. The purpose of these chapters is to show that party duration not only affects the outcome

of elections, but also affects the effect of economic conditions on elections.

Chapter 7 builds on the analysis presented in the previous chapters and takes a closer look at five specific cases. In each case, a specific party maintained prolonged control of the legislature in its respective country. I consider the factors which affected each party's initial victory as well as the conditions which helped them remain in power so long, and their eventual defeats. This chapter serves as a more detailed comparative analysis of the effects of party duration.

Finally, I conclude my dissertation in Chapter 8. I review the key findings presented in the preceding chapters. I also discuss several future projects and variables which will build on the analysis presented in this dissertation.

CHAPTER 2
INTRODUCTORY ANALYSIS OF THE EFFECTS OF PARTY DURATION

2.1 Introduction

The central proposition of this project is that party duration affects both the outcome of elections, but that it also influences the effect of other variables which impact elections. To study the effects of party duration on elections, I have created a dataset which covers elections around the world. In this chapter, I explore various aspects of this dataset, focusing primarily on the relationship between my key independent variable, party duration, and my primary dependent variable. While subsequent chapters will present the relevant literature and develop my theory, this chapter is devoted to describing the variables and dataset and presenting some preliminary analysis.

The remainder of this chapter is structured as follows. In the next section, I describe the sources for the dataset as well as various decisions that were made while coding the data. I also explore some of the key variables and present summary statistics. In the third section, I examine the relationship between party duration and my key dependent variable. I also examine how the effect of party duration changes as a result of various control variables. I close this section by briefly examining the relationship between party duration and the other key explanatory variable, the state of the economy.

2.2 Describing the Dataset

This project utilizes a novel dataset of election outcomes around the world to examine the effects of party duration through a cross-national framework. Between 1999 and 2010, Nohlen et al. worked with a number of scholars to compile a series

of data handbooks of election outcomes. Consulting various election resources, these scholars produced the most complete and comprehensive collection of election outcomes in Africa (Nohlen, Krennerich and Thibaut, 1999), Asia (Nohlen, Grotz and Hartmann, 2001*a*,*b*), North (Nohlen, 2005*a*) and South America (Nohlen, 2005*b*), and Europe (Nohlen, 2010). These scholars amassed information on elections starting from the first election where a country provided universal male suffrage. Using these databooks, for each election in every country, I coded which party won the election, as well as the votes, vote shares, seats, and seat shares received for every democratic country[1] around the world. The key variables collected from the data handbooks were the winning party (as defined earlier: the party which controls the legislature by itself or serves as the largest party in the ruling coalition), seats and seat share for the winning party, and votes and vote share for the winning party.

I then created a dichotomous indicator variable that identified whether the incumbent party lost an election (coded one) or not (coded zero) which was then used to create my key independent variable, a count of the number of years the incumbent party controlled the legislature. This dataset only accounted for one election a year, although there were occasions where a country held multiple elections in a single year. While I only coded the last election the occurred in a year, if an incumbent party lost an election only to be returned to power before the end of the year, the number of years the incumbent controlled the government was reset to zero. In countries with multiple legislative chambers, I coded the data for only the lower chamber based on the belief that the lower chamber of the legislature is more responsive to the public. To my knowledge, this is the most complete and comprehensive digital dataset on election outcomes available. Summary statistics for several key variables can be found in Table 2.1.

[1]As identified by Polity IV

Table 2.1: Summary Statistics of Key Variables

Variable	**Minimum**	**Maximum**	**Average**	**Standard Deviation**
Incumbent Loss	0	1	0.4102	0.4921
Party Duration	0	76	8.1303	10.4276
Votes	6985	$1.20 * 10^8$	4515096	$1.01 * 10^7$
Vote Share	3.3	100	41.2145	12.8912
Vote Share Change	0	51.6	6.5024	7.1488
Seats	3	1115	106.5765	90.1542
Seat Share	6.1	100	47.8310	16.2541
Seat Share Change	0	81.2	8.3337	8.8898
Year	1800	2012		

The key independent variable is the number of years the incumbent party has been in power. Starting at zero for the year a party is elected, every year that the incumbent party remains in power adds one year to this count. Whenever an incumbent loses, the count resets to zero and starts again. A plot of the distribution of party durations is shown in Figure 2.1 below.

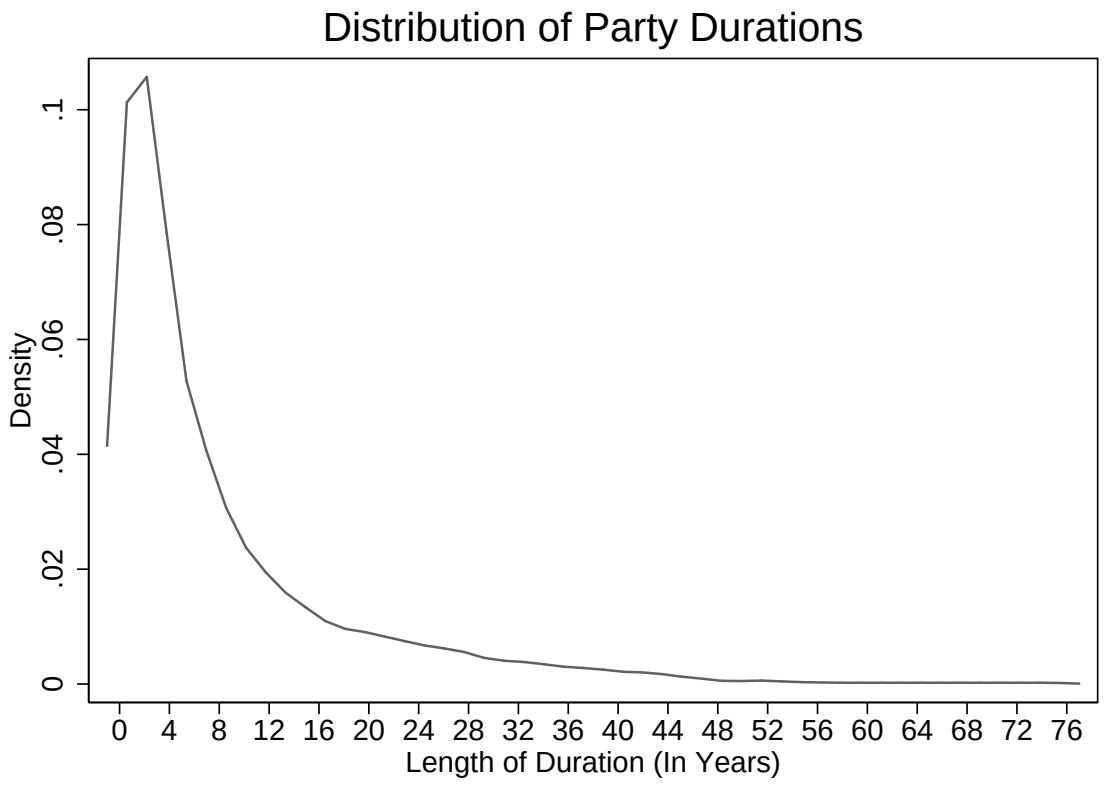

Figure 2.1: Distribution of Party Durations

This figure shows that the majority of parties only control the legislature for a few years at a time. In fact, across the entire data sample, only a single party holds office beyond fifty-five years (the Social Democratic Party in Denmark).

The primary dependent variable is a measure of incumbent party loss (a dichotomous indicator variable coded one if the incumbent party lost an election and zero if the incumbent party did not lose). I also created four additional dependent variables to test the effects of party duration on the outcome of elections. They are: the seat share and vote share won by the winning party (continuous variables which measure the percentage of seats and votes obtained by the party which controls the legislature) and the change in seat and vote share (continuous variables which measure the amount that the seat and vote share changed from one election to the next). While subsequent chapters will also examine the effect of party duration on all five

dependent variables, in this chapter, I only consider the primary dependent variable, whether an incumbent party loses an election or not.

Figure 2.2 plots the frequency of observations for incumbent party loss and observations where the incumbent party did not lose across party duration at different values of party duration. For instance, if there were ten parties which faced an election after three years and did not lose and five parties which faced an election after four years and did not lose, the frequency rising from the bottom of the figure for three years would be twice as large as the frequency for four years. Again, this figure shows that the majority of cases occur at the lower values of party duration. As party duration increases, only a handful of cases continue, with only one party going beyond a party duration of fifty-five years.

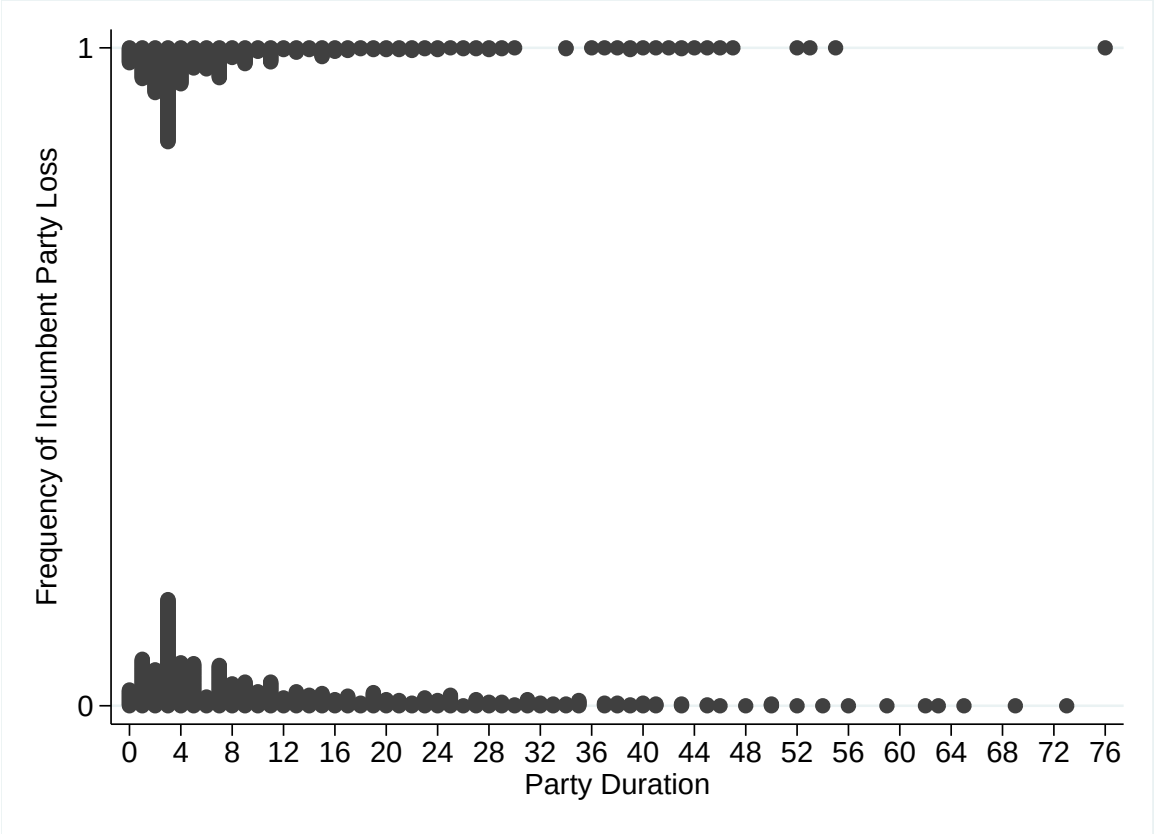

Figure 2.2: Plot of the Frequency of Incumbent Party Loss Across Party Duration

2.3 Exploring the Data

As mentioned in the previous chapter , the central hypothesis of this project is that, as party duration increases, the likelihood that the incumbent party loses an election will decrease. To test the effect of party duration on the likelihood that the incumbent party does not win reelection, consider a simple bivariate logit regression model. Given that the dependent variable, whether the incumbent party loses an election or not, takes on values of either zero or one, I performed maximum likelihood estimation by using a logit regression model[2]. Maximum likelihood estimation estimates the parameters which will give the maximum likelihood of observing the data.

The bivariate regression suggests the relationship between the length of party duration and whether the incumbent party lost an election behaves in the predicted direction[3]. The results of the bivariate logit model[4] with the dependent variable, whether the incumbent party loses reelection or not, and the key independent variable, the number of years of party duration, suggest that the length of party duration does behave as hypothesized. The effect of the length of party duration is both statistically significant and negative, as predicted[5]. Controlling for no other factors, the longer an incumbent party controls the legislature the less likely they are to lose an election. However, while the logit regression is useful to understand direction and significance, better understanding the results of the logit regression requires examining the marginal effects. The predicted probability of losing an election at the different

[2]For a detailed discussion, see the Mathematical Appendix

[3]Initial regression results presented in the Appendix under Table A1

[4]The results of the logit regression are shown over a probit regression because the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) generated smaller values for the logit model than the probit model.

[5]The estimated coefficient is -0.0282 while the estimated standard error is 0.006

lengths of party duration are plotted in Figure 2.3.

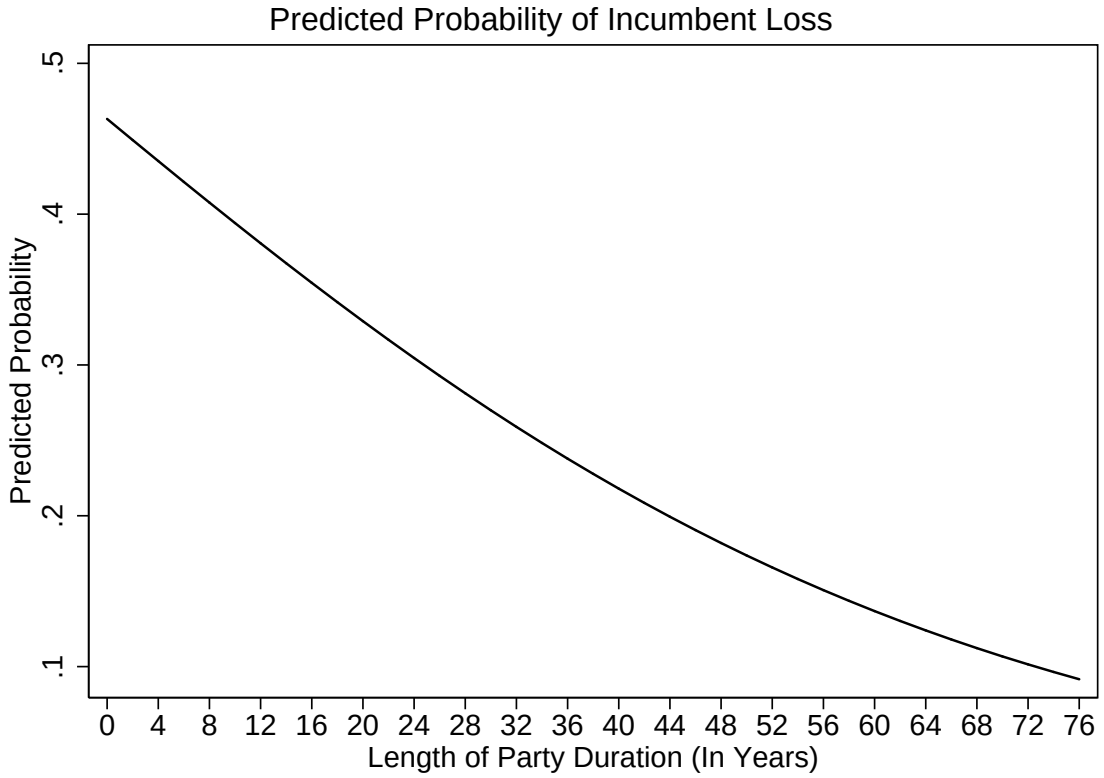

Figure 2.3: Predicted Probability of Incumbent Party Loss

This figure clearly demonstrates that the likelihood that an incumbent party loses reelection continuously declines as the length of party duration increases. When party duration is at its lowest value, indicative of a party that was elected in the previous year, the likelihood of losing an election is 0.463, just under fifty percent. By the time party duration has risen to its mean value, just over eight years, the likelihood of losing an election falls to 0.396. At an increase of plus-one standard deviation, the likelihood of losing an election falls another five percent to 0.342. At the median value for the length of party duration, thirty-eight years in power, the likelihood the incumbent party fails to be reelected has fallen all the way to 0.228. Finally, at the maximum, when the incumbent has controlled the legislature

for seventy-six years, the likelihood of losing an election is only 0.092[6].

While these results illuminate the relationship between party duration and the likelihood that the incumbent party loses an election, treating all electoral contests as equal ignores the large degree of diversity of electoral and political systems. Democratic countries have a number of important decisions to make when deciding the structure of their political system and the rules that will govern their electoral process. For instance, countries must decide whether they will establish a parliament with a prime minster as the chief government institution, or will they create an office for the president or chief executive who is considered the head of state. Several countries have even created hybrid systems which incorporate elements of both presidential and parliamentary forms of government. To better understand the effects of party duration requires analyzing whether party duration behaves similarly under parliamentary, presidential, and hybrid systems, as well as across various other distinctions. While there are some variables where the effect of party duration varies across the different categories, there are others variables where its effect on election outcomes is more homogenous. Table 2.2 presents summary statistics for the variables considered below.

However, before proceeding, one important caveat to note is that my project does not account for all the potential control variables and factors which could potentially affect the outcome of elections. For instance, scholars have suggested that factors like mobilization (Huntington, 1968; Bartolini and Mair, 1990; Przeworski, 1975), the number of parties (Sartori, 1976; Birch, 2003), ethnic and social cleavages

[6]Since there was only one country which had a party duration beyond fifty-five years (Denmark), dropping all cases beyond fifty-five years leads to similar results. The effect of party duration on the likelihood of incumbent party loss is still negative and significant - increasing the length of party duration decreases the likelihood that the incumbent party loses an election. For parties elected in the previous year, this likeihood is 0.464, falls to 0.398 at the mean of eight years, reaches 0.34 at eighteen years (plus-one standard deviation), and finally reaches 0.151 at the maximum of fifty-five years.

Table 2.2: Summary Statistics of Key Variables

Variable	**Minimum**	**Maximum**	**Average**	**Std. Dev.**
Bicameral Legislature	0	1	0.6508	0.4768
Parliamentary	0	1	0.5358	0.4988
Presidential	0	1	0.3163	0.4651
Mixed System	0	1	0.1479	0.3551
Plurality/Majoritarian	0	1	0.4517	0.4977
Proportional Representation	0	1	0.4609	0.4985
Both Rules	0	1	0.0874	0.2825
Single Member Constituency	0	1	0.3201	0.4666
Multi-Member Constituency	0	1	0.4647	0.4988
National List	0	1	0.0226	0.1486
SMC + MMC	0	1	0.0997	0.2996
SMC + NL	0	1	0.0416	0.1996
MMC + NL	0	1	0.0171	0.2570
SMC + MMC + NL	0	1	0.0098	0.0987
Majority	0	1	0.4441	0.4971

(Bartolini and Mair, 1990; Heath, 2005), and even international conflict (Mueller, 1970; Norpoth, 1984; DeRouen, 1995) can affect domestic conditions and elections. However, for many of these variables, there are no sources which cover the two-hundred year time span which I consider.

2.3.1 Party Duration Over Time

One important consideration is whether party duration behaves the same over time – for instance, does party duration have the same effect for incumbent parties

during the 1950s that it does today? Scholars have long acknowledged that the role of parties has changed over time. In their earliest days, parties served as meeting points for elites to prepare for elections, campaigns, and to maintain the connection between candidates and their supporters (Duverger, 1954). These were parties from an era of limited suffrage. However, with the expansion of suffrage and the extension of democratic rights, mass parties emerged. These parties were divided on class-lines, but still sought to appeal to the masses (Duverger, 1954; Kirchheimer et al., 1966). Over time, in countries where these class-lines were weaker, catch-all parties emerged which were an extension of the mass party focused primarily on electoral success. These parties focused on drawing in the masses and were chiefly concerned with holding office (Kirchheimer et al., 1966; Wolinetz, 1979; Mair, 1990; Katz and Mair, 1995). Surprisingly, while scholars agreed that the role and types of parties have changed over time, they have continued to debate whether their support has similarly changed or not. Some scholars have argued that party support has become more volatile over time (Crewe and Denver, 1985; Mainwaring and Zoco, 2007) while others have found evidence of the opposite – that electoral volatility has instead decreased over time (Klingemann and Fuchs, 1995; Bartolini and Mair, 1990).

While there are numerous ways to partition the two-hundred years of data available, to better understand how party duration has changed over time, I chose to focus on the three waves of democracy (Huntington, 1991, 1993). Huntington conceptualized three distinct periods which each saw a rise and fall in the number of democracies in the world. The first began during the 1820s and continued for around one-hundred years, ending in 1922. During this periods, the world saw the emergence of twenty-nine democracies. However, from 1922 to 1942, the world experienced a reverse wave which saw the number of democracies in the world shrink down to only twelve. Following the end of World War II, a second wave of democracy began, leading to thirty-six democratic countries in the world. Similar to the first wave, this

was followed by a second reverse wave which again saw a decline in the number of democracies in the world. Huntington suggested that a third wave of democratization began in the mid-1970s, leading to another expansion in the number of democracies world-wide.

Given that this project focuses on the effect of party duration on election outcomes in democratic countries, it is natural to examine whether the effect of party duration differed during these three distinct periods of democratic change in the world. Bivariate logit regressions which only considered elections that occurred during a single wave of democracy produced similar results[7]. For all three regressions, the effect of party duration on the likelihood that the incumbent party lost an election was both negative and significant. The calculated marginal effects from these models are presented in Figure 2.4.

[7]Regression results presented in Appendix Table A2

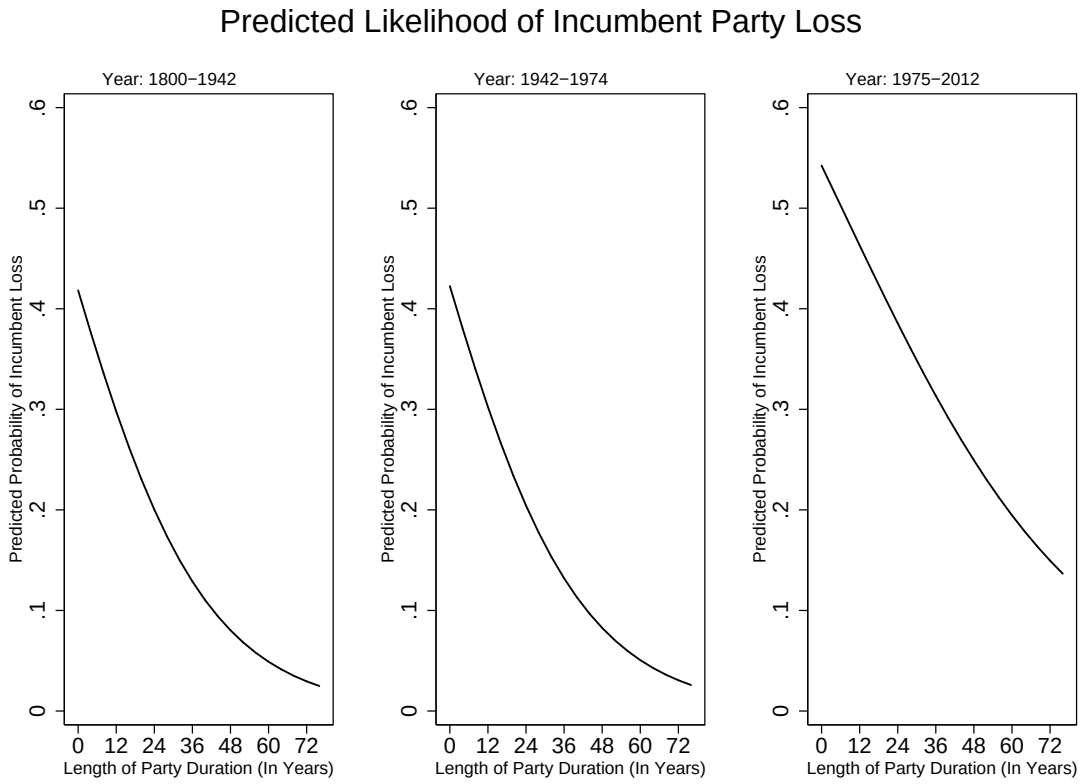

Figure 2.4: Predicted Probability of Incumbent Party Loss (Over Time)

In all three plots, the effect of party duration on the likelihood that the incumbent party loses an election is negative. Regardless of the period under consideration, increasing the number of years the incumbent party controls the legislature decreases the likelihood of losing an election. However, the effect is not the same during all three periods. During both the first and second waves, 1800 to 1942 and 1942 to 1974 respectively, incumbent parties which face an election immediately after securing the legislature are more likely to not lose than they are to lose. These bivariate results show that parties that secured control of the legislature in the previous year which immediately face an election in the next year have a likelihood of losing an election just over 0.4. Both decline in a similar pattern, culminating in a predicted likelihood of incumbent loss around 0.025.

Conversely, during the third wave, 1975 to 2012, the likelihood of losing an election is 0.542 for incumbent parties that face an election immediately after being elected for the first time. Compared to the other two time periods and controlling for no other factors, incumbent parties are more likely to lose an election if they gained control of the legislature in the previous year. However, for all three periods, the likelihood of losing an election rapidly declines as party duration increases and incumbent parties are soon more likely to win an election. Still, during the third wave, even when incumbent duration reaches its maximum value, the average likelihood of losing an election does not fall to the same degree that it does during the first or second wave.

2.3.2 Bicameral Legislatures

There are also a number of structural factors that can potentially impact the effect of party duration on the likelihood of incumbent party loss. One such structural factor to consider is whether a country has a unicameral or bicameral legislature. While my project only focuses on the electoral outcomes of a single legislative chamber in each country, the elections of the lower house in cases of bicameral legislatures, many countries utilize two legislative chambers. Upper chambers often have longer terms of office and are sometimes not even elected by the general electorate. Because of these factors, it is generally held that the lower legislative chamber is more responsive to the electorate.

Of course, the presence of a second legislative chamber which also has a say in passing legislation also slows down the legislative process and makes the government less able to rapidly adapt to changing situations. Scholars like Cotta (1974) have argued unicameral legislatures are able to pass legislation faster than bicameral legislatures, in cases where the two chambers are equal and in cases where one chamber is stronger than the other. However, Riker (1992) claimed that this speed

is not an advantage, and that bicameral legislatures led to more stable policies and warded against the tyrant of the majority. Scholars have even found evidence that the structure of the legislature affects outside the legislative process. Studying nineteen industrial democracies, Jackman (1987) stated that unicameral legislatures created a clear link between elections and the legislative process, leading to greater voter turnout.

However, the presence of a second legislative chamber does not appear to have a drastic impact on the effect of party duration on election outcomes. Bivariate regression results indicate that increasing the length of party duration has a significant and negative effect on incumbent party loss for elections in countries with unicameral and bicameral legislatures[8]. The plotted marginal effects in Figure 2.5 tell a similar story.

Figure 2.5 depicts that the effect of party duration is very similar in countries with unicameral and bicameral legislatures. While the likelihood that the incumbent party loses reelection immediately after securing control over the legislature is higher in countries with unicameral legislatures, just over a likelihood of 0.5, the predicted likelihood rapidly falls to similar values as countries which possess bicameral legislatures. The presence of either a bicameral legislature or a unicameral legislature does not appear to have a drastic impact on the effect of party duration on the likelihood that an incumbent party loses an election.

[8]Initial regression results presented in Appendix Table A3

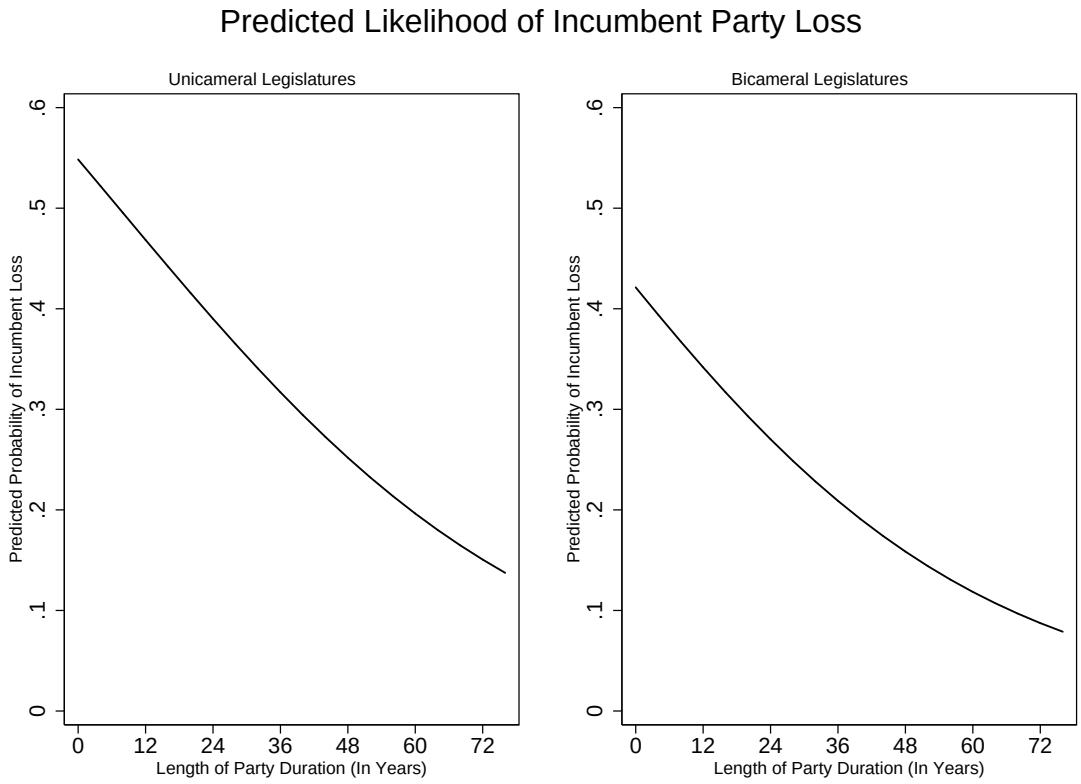

Figure 2.5: Predicted Probability of Incumbent Party Loss (Unicameral versus Bicameral)

2.3.3 Presidential, Parliamentary, and Mixed Systems

Another institutional variable is whether the country can be classified as presidential, parliamentary, or a hybrid regime. While Mainwaring and Zoco (2007) proposed that presidential systems, as a results of their personalization of the vote for the chief executive, would foster higher levels of electoral volatility than parliamentary systems, they failed to find evidence which supported this hypothesis. In presidential systems, the president or chief executive is considered the head of state. They have considerable power and are often directly elected by the people. Furthermore, they usually serve a fixed term and cannot be easily removed from office by a vote of no confidence like a prime minister. Conversely, in a parliamentary system, the chief government institution is the parliament. There is a prime minister who is the head

of parliament, but whose power depends on maintaining the confidence of parliament. The third category includes the hybrid systems which incorporate elements of both presidential and parliamentary forms of government.

Unlike the previous characteristics, there is far more heterogeneity in the effect of party duration on election outcomes when considering if the country utilized a presidential, parliamentary, or hybrid system[9]. While the calculated likelihood that the incumbent party loses as party duration increases is negative, it is only significant at typically accepted values for parliamentary systems. Figure 2.6 presents the plots for the predicted likelihood of incumbent party loss for presidential, parliamentary, and mixed systems. While the slopes of all three lines are negative, the confidence intervals (not included to reduce visual clutter) tell a different story. Whereas the plot of the likelihood of incumbent party loss is clearly declining for parliamentary systems. Looking at both presidential and mixed systems, even at the maximum values of party duration, the likelihood of incumbent party loss is not as distinguishable from earlier periods. These bivariate results suggest that the effect of party duration on the likelihood of incumbent party loss is heterogeneous in regard to the type of government system – under parliamentary systems, increasing party duration has a greater negative effect on the likelihood of incumbent party loss than under either alternative form of democracy.

[9]Initial regression results presented in Appendix Table A4

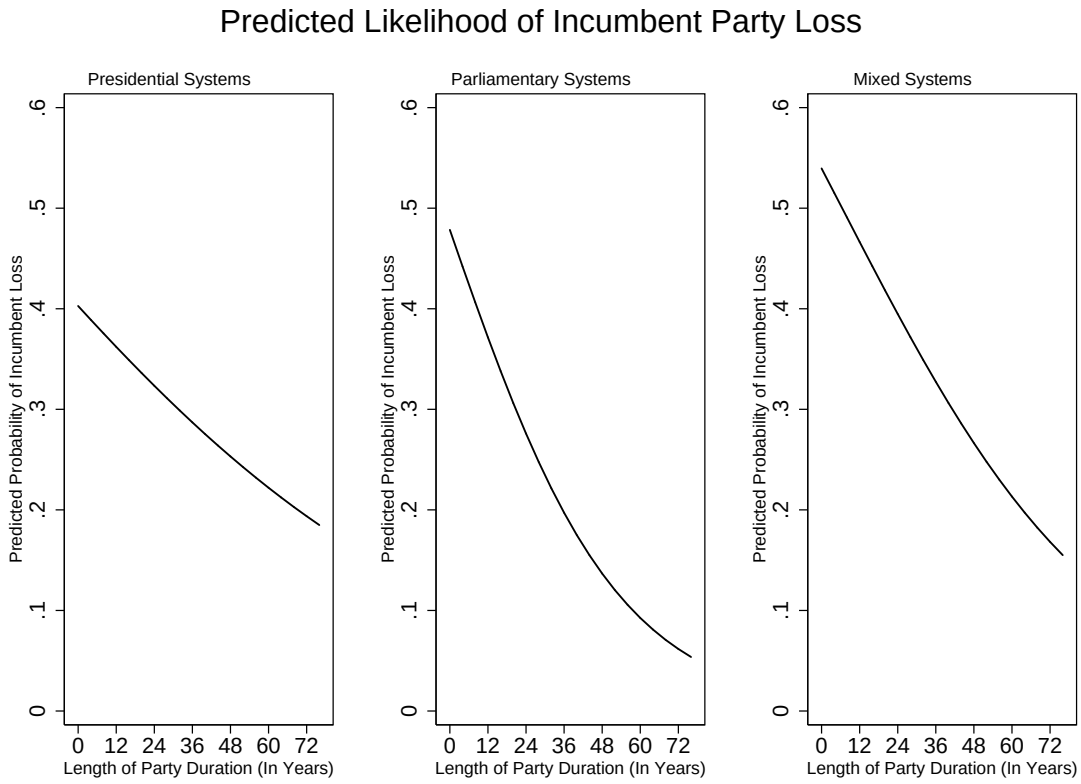

Figure 2.6: Predicted Probability of Incumbent Party Loss (Presidential, Parliamentary, and Mixed Systems)

However, while the preceding analysis considered three distinct institutional types, another way to consider these structural variables is by examining the two main categories, presidential and parliamentary systems, as non-mutually exclusive categories. Through this perspective, instead of dividing countries into only presidential, only parliamentary, and only mixed cases, a country can have a presidential system or not and it can have a parliamentary system or not.

Figure 2.7 shows the calculated effects of party duration on the likelihood of incumbent party loss across the four categories. The effect of party duration is negative for all four bivariate models, presidential, non-presidential, parliamentary, and non-parliamentary, and significant for all but non-parliamentary systems. Given that there are such few cases of mixed systems, it is no surprise that the effect of party

duration under non-presidential systems is similar to the effect under parliamentary systems and the calculated effect under presidential systems is similar to the effect under non-parliamentary systems. While the effect of party duration is similar under the two systems, the bivariate results show that increasing party duration has a greater negative effect under parliamentary systems and non-presidential systems. While the likelihood that the incumbent party loses reelection starts higher under parliamentary and non-presidential systems, it has a greater slope, reaching a lower likelihood once party duration reaches its maximum value (seventy-six years).

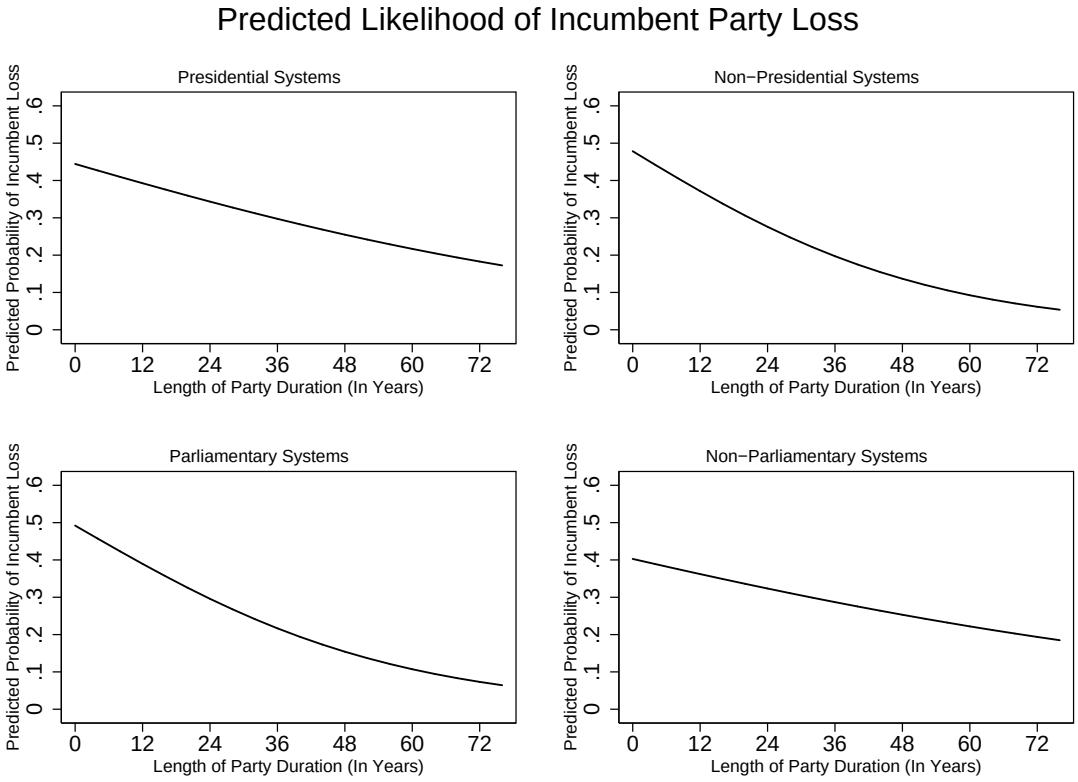

Figure 2.7: Predicted Probability of Incumbent Party Loss (Presidential versus Non-Presidential and Parliamentary versus Non-Parliamentary)

2.3.4 Electoral Rules

The type of electoral rules used in an election is another important structural factor. Examining turnover of elected candidates in twenty-five democracies over twenty years, Matland and Studlar (2004) find that turnover is statistically higher in proportional representation systems than majoritarian systems. Manow (2007) finds similar results when examining post-war elections in Germany, a country with a mixed electoral system. Countries have several different types of electoral rules to choose from to determine the outcome of elections. Elections can be determined by plurality or absolute majority, proportional representation, or even a combination of those rules. If elections are decided by plurality, the candidate who receives the largest number of votes is the winner. In countries that use the absolute majority rule for their elections, a candidate or party is required to receive over fifty percent of the vote. Scholars often group these two sets of rules together since they are similar. Conversely, in elections that are determined by proportional representation, parties that received a percentage of the vote, usually above a required threshold, received that much representation in the legislature. Unlike plurality/majoritarian rules, under proportional representation, the amount of votes necessary to secure seats in the legislature is much lower. Proportional representation is typically touted as a way to provide better representation to both majorities and minorities instead of over-representing winners and under-representing losers (Lijphart, 1999). It is important to note there are several countries that incorporate both plurality/majoritarian electoral rules and proportional representation, so these are not mutually exclusive categories.

The effect of party duration on the outcome of elections behaves very similarly under both plurality/majoritarian systems and proportional representation systems. Under both systems, the effect of party duration is negative and significant; The predicted probability of incumbent loss begins just under 0.5 for incumbent parties

that were elected in the previous year and falls to around 0.07 when party duration reaches its max value. However, for the third category, countries that utilize mixed systems, the effect is very different. What is most surprising is that the calculated effect is positive, but not statistically significant at traditionally accepted values. However, whereas there are over five-hundred elections that were governed by either plurality/absolute majority or proportional representation, there were less than one-hundred governed by both[10].

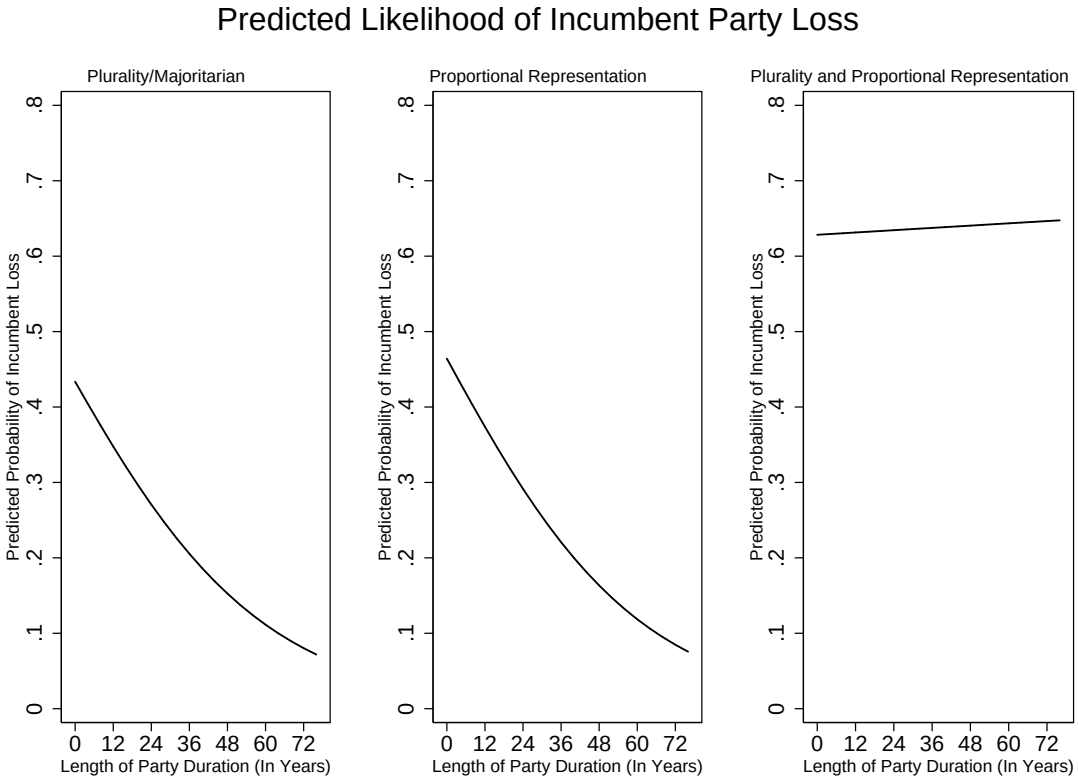

Figure 2.8: Predicted Probability of Incumbent Party Loss (Electoral Rules)

Similar to the examination of presidential and parliamentary systems, another way to examine these variables is by treating them as non-mutually exclusive cate-

[10]Initial regression results presented in Appendix Table A5

gories – a country can have elections decided by plurality/absolute majority or not and it can have elections determined by proportional representation or not.

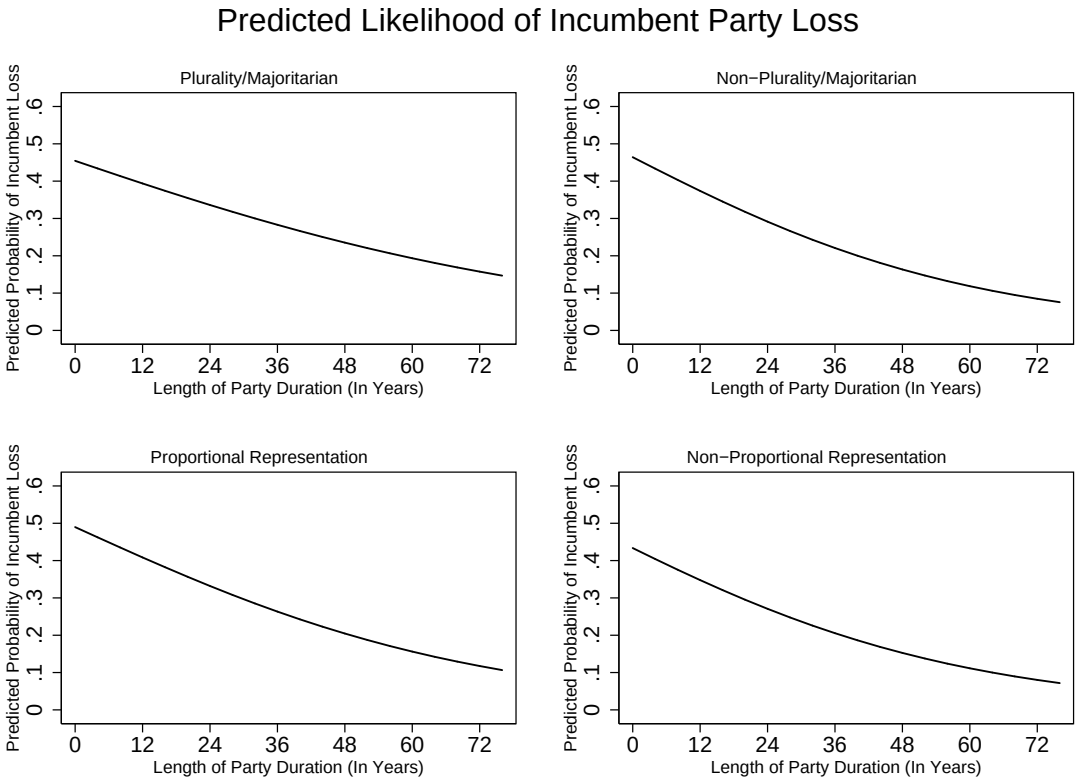

Figure 2.9: Predicted Probability of Incumbent Party Loss (Electoral Rules)

In all four models shown in Figure 2.9, the effect of party duration on the likelihood that the incumbent party loses is both negative and significant. According to this analysis, increasing the length of time that the incumbent party controls the legislature or lower chamber decreases the likelihood that the incumbent party loses reelection whether an election is decided by plurality/majoritarian rules or not and whether it is decided by proportional representation or not. Immediately after being elected, the likelihood that the incumbent party loses is between 0.4 and 0.5 and then drops as party duration increases to a low between 0.07 and 0.15. While there is some variation in the effect of party duration on the likelihood of incumbent party loss, the

effect is very similar across these categories.

2.3.5 Constituency Types

The final structural factor I will consider is whether the country utilized single member constituencies, multi-member constituencies, or a nation-wide constituency or national list. In single member constituencies, a single representative or member of parliament is elected to the legislature in a given district or constituency. Alternatively, in multi-member constituencies, there are multiple members of the legislature elected from each constituency or district. Often times the number of legislators given to a specific area is determined by the population. Sometimes, countries will utilize multi-member constituencies but have some districts where only a single member is elected due to the population. These cases are still treated as multi-member constituencies. A third category identifies cases where a nation-wide constituency or national list is used to elect any part of the legislature. In some countries, a set number of seats are determined by the division of the national vote while some countries reward the party that received the most votes with additional seats. Additionally, some countries treat the entire country as a single constituency and rewarded votes based on how parties did overall.

Carey, Niemi and Powell (2000) found evidence that the type of district affected incumbent candidates. Examining the likelihood of incumbent reelection in ninety-six legislative chambers in the 1992 to 1994 electoral cycle, they found that incumbents were less likely to win in multi-member districts than single member districts. In fact, they argued that the type of district plays a larger role in the likelihood of incumbent victory than legislative resources. However, studying state legislatures, Hyneman (1938) found that legislators from multi-member districts had longer average tenures than their counterparts from single member districts. Conversely, Silva (1964) argued that neither single member or multi-member districts provide a strong

advantage to legislators.

Similar to the distinction between presidential and parliamentary systems and the electoral rules, these are not mutually exclusive categories. There are many countries that use various combinations of single member constituencies, multi-member constituencies, and national lists. There are countries that utilize both single member constituencies and multi-member constituencies, single member constituencies and nation-wide constituencies, multi-member constituencies and nation-wide constituencies, and even countries that incorporate all three systems.

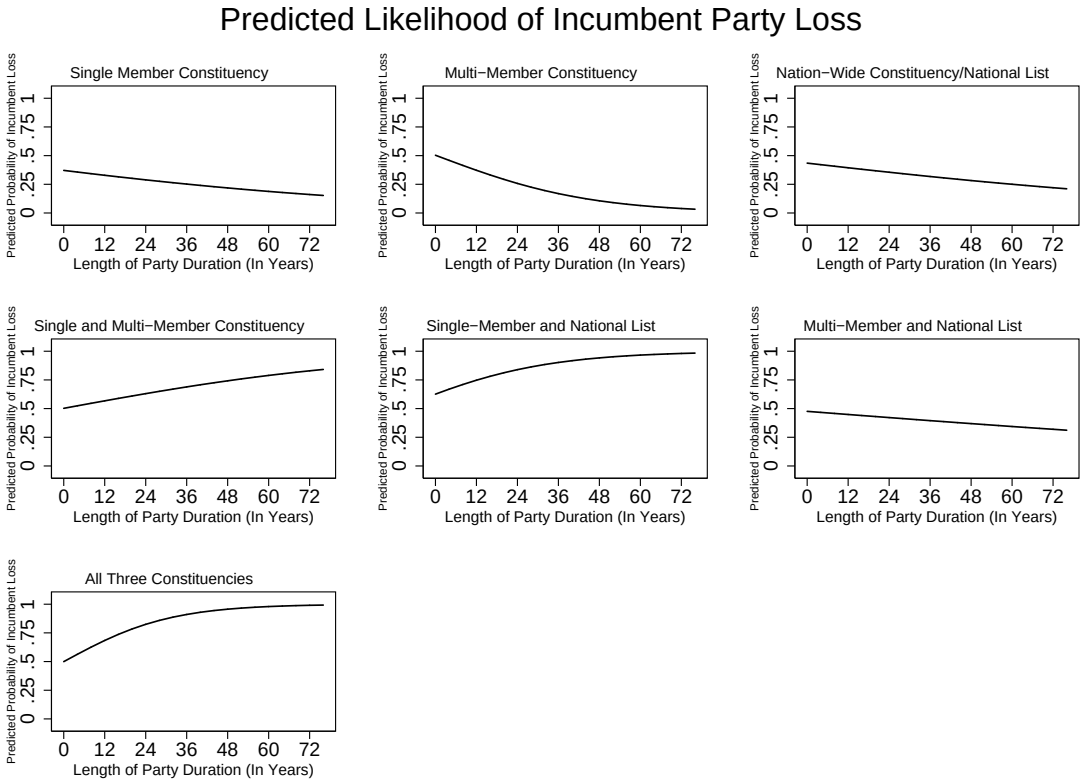

Figure 2.10: Predicted Probability of Incumbent Party Loss (Constituency Types)

Of the different combinations of constituency types considered, the calculated effect of party duration on the likelihood that the incumbent party wins an election is negative for single member constituencies, multi-member constituencies, nation-

wide constituencies/national lists, and the combined multi-member constituencies and nation-wide constituencies/national lists. The effect is predicted to be positive for the combination of single member constituencies and multi-member constituencies, single member constituencies and nation-wide constituencies/national lists, and in elections that utilized all three constituency types. However, the effect is only statistically significant at traditionally accepted levels in multi-member constituencies[11].

Given the small number of observations in the combined categories (for instance, forty-four for all three constituency types), it is also useful to examine the effects of party duration on the likelihood that the incumbent party loses an election by focusing on the non-mutually exclusive variables. The calculated marginal effects for the six different categories are shown in Figure 2.11:

Examining each of the non-mutually exclusive categories, increasing party duration has a negative effect on the predicted likelihood that the incumbent party loses an election. However, the calculated effect is only statistically significant in elections with non-single member constituencies, elections with multi-member constituencies, and elections with non-nation-wide constituencies/national lists. The effect fails to achieve statistical significance at traditionally accepted levels for single member constituencies, non-multi-member constituencies, and nation-wide constituencies/national lists[12].

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[11]Initial regression results presented in Appendix Table A6

[12]Initial regression results presented in Appendix Table A7

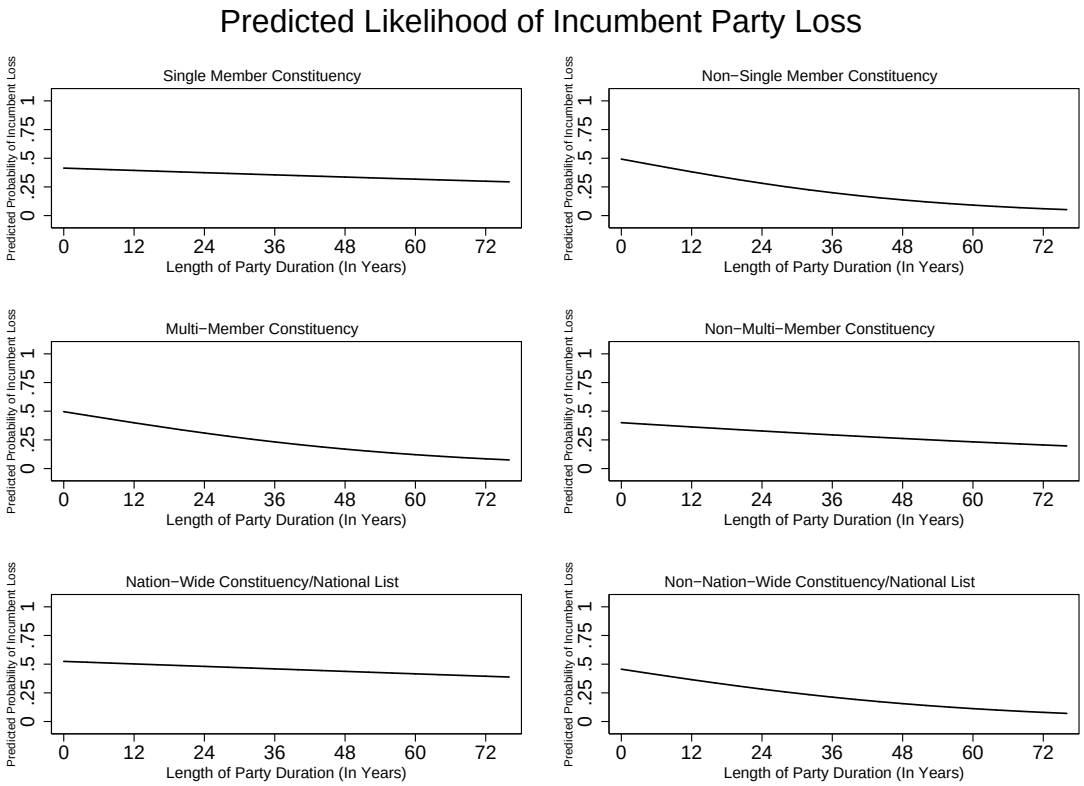

Figure 2.11: Predicted Probability of Incumbent Party Loss (Constituency Types)

Looking across all thirteen different plots that study constituency types, what is most clear is that the effect of party duration on the likelihood that the incumbent party loses an election is heterogeneous under different types of constituencies and combinations of constituencies. Furthermore, the effects of party duration appear most discernible in elections which were determined by multi-member constituencies. In both analyses, the effect of party duration on the likelihood of election outcomes was negative and maintained its significance at traditionally accepted values.

2.3.6 Majority Government

While the legislatures in countries like the United States and United Kingdom are known for having single party governments by virtue of a single party controlling over fifty percent of the seats in the legislature, this is not the case in many countries.

Often times, parties do not control a majority of the seats in the legislature and must form minority governments, or must form ruling coalitions with other parties.

Scholars who have studied economic voting have noted that the electorate treats coalition governments differently. Lijphart (1999) stated that parties which could form a majority government on their own were more stable because they did not suffer from the internal conflict of coalition governments and did not have to worry about another majority coming together to propose a new government. Studying over one hundred countries, Powell and Whitten (1993) and Whitten and Palmer (1999) argued that legislative circumstances influenced the relationship between the economy and elections. Their findings suggested that coalition complexity could reduce the impact of economic conditions on elections. However, Wilkin, Haller and Norpoth (1997) found that in multiparty systems where coalitions constitute the government, the major party in the coalition receives a disproportionate amount of responsibility for the performance of the economy. Studying thirty-eight countries, they found evidence that the electorate does hold the major party responsible for the economic performance leading up to an election, rewarding or punishing as appropriate.

To examine the effect that majority governments had on the effects of party duration on the likelihood of incumbent party loss versus non-majority governments, I estimated two regression models. The first included only cases where the incumbent party controlled over fifty percent of the seats in the legislature and was therefore able to control the legislature by themselves. The second regression model examined cases where the major party did not control over fifty percent of the seats and was therefore forced to either form a coalition or rule as a minority government.

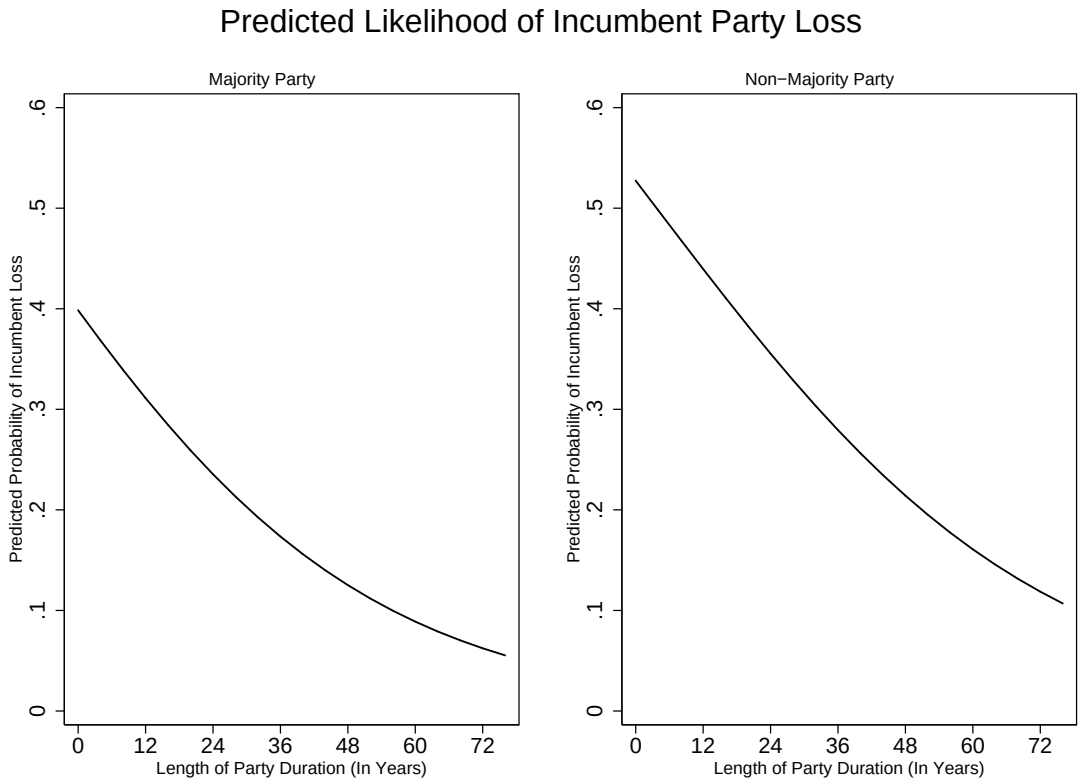

Figure 2.12: Predicted Probability of Incumbent Party Loss (Majority Goverment Versus Non-Majority)

For both regression models, the effect of party duration on the likelihood that the incumbent party loses an election is negative and significant. Increasing party duration decreases the likelihood that the incumbent party loses an election whether the incumbent party can form a majority government or not[13]. However, Figure 2.12 shows that the effect is similar, but not equal for both cases. When the incumbent party receives over fifty percent of the seats in the legislature and is able to form a majority government on its own, the likelihood that the incumbent party loses an election immediately after being elected is just under 0.4. This rapidly declines, reaching a low of around 0.05 when party duration is at its maximum value (seventy-six years). Conversely, for incumbent parties that do not control over fifty percent

[13]Initial regression results presented in Appendix Table A8

of the legislature, the likelihood of immediately losing an election is over 0.5. This effect then drops to around 0.1 at the maximum value of party duration. These bivariate results suggest that there is not a large degree of variation in the effect of party duration on the likelihood that the incumbent party loses an election between incumbent parties that control over fifty percent of the legislature and those that do not.

2.3.7 Party Duration and the Economy

While the previous sections focused on examining how the effects of party duration on election outcomes responded to various control variables, one of the central propositions of this project is that party duration not only affects election outcomes, but that it also affects the effect of other factors that influence elections. Specifically, how does the effect of economic voting change in response to party duration?

The economic data used in this project is taken from the Maddison Project, a dataset that builds upon the work done by Maddison (Angus, 2003; Maddison, 2007) to construct a comprehensive dataset of economic growth (Bolt and van Zanden, 2013). In the economics field, the Madison economic database is regarded as one of the richest and most comprehensive databases on economic growth and is widely used. Madison created a dataset that covered over two-thousand years of economic activity, and in recent years, scholars have worked to build upon and improve on this vast collection of data. While the data has its flaws, the largest being that there is still a large number of missing cases, it is still one of the most complete datasets of economic history. Comparable data sources, like the World Bank, do not cover nearly the same time period as the Maddison Project data.

Focusing on GDP per capita has two additional advantages. First, scholars have shown that the preponderance of evidence supports the view that voters are sociotropic rather than egotropic. Therefore, measures which focus on national eco-

nomic conditions are a more appropriate measure of economic voting. Second, parties have different economic focuses depending on where they fall on the left-right continuum. More liberal parties are chiefly concerned with unemployment while parties that are identified as conservative tend to focus more on managing inflation. A measure like GDP per capita growth is a better objective measure of the state of the economy rather than a measure that is more of a favorable for some parts of the left-right spectrum rather than others.

Using the Maddison Project's GDP data, I created an economic independent variables to measure the change in GDP per capita each year. This measure gave the change in GDP per capita as a fraction of the previous year's GDP per capita by taking the current GDP per capita and dividing it by the recorded GDP per capita from the previous year. Values greater than one indicated that the GDP per capita had increased while values less than one indicated that it had decreased. Several summary statistics for these the annual GDP per capita and the GDP per capita change can be found in Table 2.3, while histograms for the two variables can be found in the appendix.

Table 2.3: Summary Statistics of Key Economic Variables

Variable	**Minimum**	**Maximum**	**Average**	**Standard Deviation**
GDP per Capita	$203.41	$42,916.23	$4,084.61	$5,101.90
GDP Change (Fraction)	0.3851	1.8695	1.0187	0.0636

However, unlike the previous analyses, modeling the proposed relationship between party duration, the state of the economy, and their effects on elections requires more than a simple bivariate or multivariate logit regression. The proposed relationship between party duration and economic conditions, that the length of party

duration affects the effect of economic conditions on election outcomes, is a conditional relationship. Therefore, a multiplicative interaction must be included as well to properly account for the proposed relationship. Interactions are utilized when the effect of one variable on a dependent variable depends on the magnitude of another explanatory variable [14]. In this project, I propose that the effect of different economic conditions on the outcome of elections is not constant, but depends on the length of time which an incumbent party controls the legislature.

To examine the relationship between party duration and the state of the economy on the likelihood of incumbent party loss, I created an interaction term, interacting party duration with the measure for fractional GDP change. I then conducted a simple multivariate logit regression. In this model, the predictor variables were the centered party duration, the centered fractional GDP change, and the interacted variable. In the model, all three variables are negative and statistically significant[15]. However, as Brambor, Clark and Golder (2006) state, correctly understanding the effect of the interaction cannot be done by simply looking at coefficients, but requires plotting the effects.

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[14]For a detailed discussion, see the Mathematical Appendix

[15]Initial regression results presented in Column 1 of Appendix Table A9

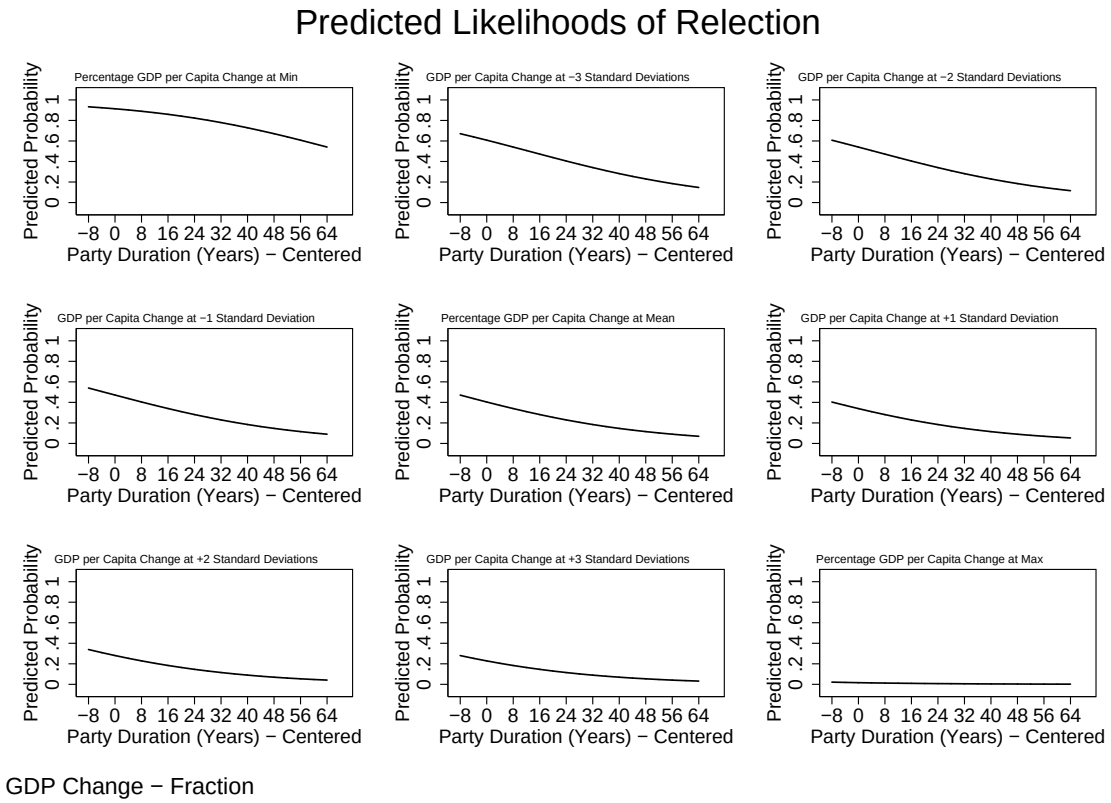

Figure 2.13: Predicted Probability of Incumbent Party Loss (Effect of Party Duration and GDP Change (Fraction))

Figure 2.13 contains nine plots which depict the predicted likelihood of incumbent party loss as party duration rises at different levels of GDP per capita fractional change. Starting with the top left, where the GDP per capita change as a fraction of the previous year's GDP per capita is set to its minimum value, the likelihood that the incumbent party loses immediately after being elected is very high, almost 1. That gradually declines as party duration increases, but only falls to 0.541 when party duration reaches its maximum value. If the economy is at its worst point, the incumbent party is more likely to lose an election, regardless of the length of party duration. Conversely, the bottom right plot, the GDP per capita fractional change is set to its maximum value. With GDP growth at its maximum value, the likelihood that even a party that was elected in the previous year loses an election in only 0.022.

However, it is the seven intermediate plots which are most informative. When the GDP per capita fractional change is set to its mean, or plus or minus one, two, or three standard deviations, the effect of party duration becomes more noticeable. For instance, examining the effects of party duration on the likelihood of incumbent party loss when the fractional GDP change is set to its mean value, the initial predicted likelihood begins at 0.471 and eventually falls to 0.07. These graphs illustrate the effect of increasing party duration on the effect of economic conditions on elections. Furthermore, the preliminary results are indicative that party duration not only affects the outcome of elections, but also affects the effect of at least one other factor which influences elections and their outcomes.

2.4 Conclusion

In this chapter I examined the effects of party duration on election outcomes, focusing on the primary dependent variable, whether the incumbent party lost an election or not. While this chapter presented mostly simple bivariate regression models, the results are illuminative of the effects of party duration. Just looking at the effect of party duration on the likelihood of incumbent party loss, the bivariate analysis suggests that increasing the length of time an incumbent party controls the legislature decreases the likelihood of incumbent party loss.

Furthermore, I have shown the effect of party duration on the likelihood of incumbent party loss has remained constant over time, behaves similarly in elections for both unicameral and bicameral legislatures, and produced similar results in cases where a party won with a majority of the vote and cases where the winning party received less than fifty percent of the vote. Additionally, I demonstrated that the effect of party duration is similar for elections decided by either plurality or proportional representation, but that it produced a different result in the small number of cases which used both sets of electoral rules. However, I found evidence that party duration

affects presidential, parliamentary, and mixed systems differently, with the strongest effect occurring in parliamentary systems. I also showed that the effect of party duration showed a great deal of variation depending on the type of constituency employed by a country. Finally, I presented initial multivariate evidence which supports my proposed relationship between party duration and economic conditions on the likelihood that an incumbent party loses an election – that party duration conditions the effect of the economy and is best represented by a multiplicative interaction.

While the bivariate results presented in this presented an important preliminary look at the data and the relationship between party duration and whether an incumbent party lost an election or not, this analysis did not account for the correlation between observations as a result of the cross-sectional time-series nature of the data. In subsequent empirical chapters I will go into greater detail to regarding these key aspects of the data as well as solutions to overcome them.

CHAPTER 3
THE FOUNDATION OF PARTY DURATION

3.1 Introduction

Does the length of time that a party controls the legislature affect their electoral fortunes? Over the years, scholars have examined the effects of specific issues and legislative records (Stokes and Miller, 1962; Canes-Wrone, Brady and Cogan, 2002; Snyder and Ting, 2005), the state of the economy and economic conditions (Bean, 1948; Kramer, 1971; Lewis-Beck and Stegmaier, 2007), election timing (Smith, 2003; Kayser, 2005), specific candidates and their characteristics (Rosenberg et al., 1986; Abramowitz, 1988), incumbency (Cummings, 1966; Erikson, 1971; King, 1991; Ansolabehere et al., 2007), and various other factors on elections at the state, national, and cross-national level. Rather than focusing on the variables that scholars have previously extensively analyzed, I look to contribute to the study of election outcomes by studying an often overlooked variable, the length of time that the incumbent party has controlled the legislature. I propose that this variable is crucial to understanding election outcomes and other factors which influence elections.

In this chapter, I focus primarily on the effects of the length of party duration. Returning to the diagram introduced in Chapter 1, this chapter investigates and models the relationship between party duration and the outcome of elections (depicted by Arrow A).

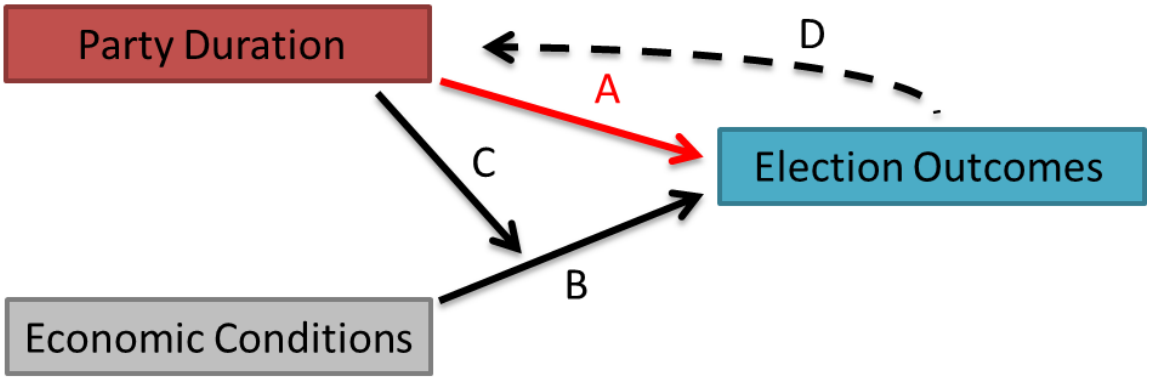

Figure 3.1: Proposed relationships between key variables.

The rest of this chapter is structured as follows: I begin by briefly discussing the literature on political parties, focusing primarily on scholars who have studied the roles that parties perform. I then review the relevant literature on electoral volatility and important elements of political stability. The study of electoral volatility largely emerged from scholars interested in studying political stability, which has considered various topics such as, democratic stability, cabinet stability, and even party stability. I then move to a comparable concept studied predominantly in the American Politics subfield, the incumbent advantage. I build on these studies, emphasizing how this project takes from and works to expand and connect these previous approaches. By doing so, I hope to establish the importance of party duration on election outcomes. I conclude this chapter by presenting my hypotheses to prepare for the empirical analysis presented in the next chapter.

3.2 Theoretical Framework

3.2.1 Political Parties

Political parties have served a number of crucial purposes in the political process. Duverger (1954) stated that political parties form out of the need of elected legislators to coordinate their actions. Politicians and political figures use parties as a means to organize. Aldrich (1995) claimed that political parties exist to aggregate

"many and varied interests sufficiently to appeal to enough voters to form a majority in elections and to forget partisan-based, majority coalitions in government." Roemer (2009) argued that political parties consist of factions which share the same ideology, but possess various political motivations. For instance, some factions can be motivated by ideology, while others care only about holding office.

Sartori (1976) held that parties exist to transmit the demands of the electorate, backed by pressure. Scholars have also proposed that parties provide resources and reputational benefits to political actors (Riviere, 1999; Katz, 2011) and help solve collective action problems (Schlesinger, 1994; Aldrich, 1995). Studying the US Congress, Cox and McCubbins (2007) contended that political parties control the legislative agenda, serving as "gatekeepers of new policy proposals." Similarly, Diermeier and Vlaicu (2011) defined parties as "procedural coalitions" which control the legislative agenda. Scholars have also argued that political parties serve as a crucial tool in democracies for integrating diverse interests and social forces into the mechanisms of government, for regulating social conflict, and for holding elected officials accountable Diamond et al. (1989); Roberts and Wibbels (1999); Tavits (2008).

Additionally, political parties allow politicians to commit to policies that do not coincide with any of their individual preferences, but represent compromises between their ideal policies (Mayhew, 1986). Using a model built around strategic interactions, Levy (2004) argued that parties were a crucial tool for politicians to increase their commitment level. She defined parties as the collection of different groups of factions and politicians with their own ideal policies. The party's policies were therefore a compromise between these ideal policies. Levy stated that parties allow politicians to commit to policies that do not coincide with any of their individual preferences. Similarly, Jackson and Moselle (2002) developed a formal model where the legislative process was treated as a non-cooperative game and concluded that members of parliament used the formation of political parties to enforce their

internal agreements.

Scholars have also studied how political parties can work as agents to mobilize the electorate. Parties can engage voters to turn out and vote (King, 1969; Huckfeldt and Sprague, 1992) often along specific class or partisan cleavages (Hill and Leighley, 1996). In fact, Verba, Nie and Kim (1978) theorized that political parties which represented specific socioeconomic cleavages worked to influence the typical relationship between socioeconomic status and political participation. Petersson (1978) categorized voters who were mobilized due to their partisan attachments as *party activists* (individuals with a high degree of interest in politics) or *ritual partisans* (individuals with a low interest in politics). For both categories, voters expressed high levels of party identification and typically made their decisions before elections. Parties served as a crucial factor for deciding the vote behavior of these voters.

Over the years, numerous scholars have studied how the electorate uses political parties as a shortcut to help vote. Arguably, this is the most commonly cited function of political parties in regard to voters. This position grew from Downs (1957) who stated that voters who wanted to become informed before elections needed to invest time and energy to collect and evaluate political information. However, the returns from such an investment are small and overshadowed by other potential investments. For instance, a voter could spend the time learning about foreign policy, but while this allows her to become a more informed voter, her investment does not translate to better policy outcomes. Conversely, a voter who instead devoted the time to learning how to prepare a meal receives a far larger return for his investment. Downs called this phenomenon *rational ignorance*.

Campbell et al. (1966) were also influential in developing the perspective that political parties can serve as a shortcut for voters. A few years after Downs, they stated that party labels can convey a great deal of information to voters. Looking at the American parties, they stated that political parties provided cues and partisan

images. Popkin (1991); Popkin and Dimock (1999) asserted that voters rely on information shortcuts to obtain and evaluate information and aid their political decisions. Popkin went so far as to state that voters may use "political parties as shortcuts in storing information and use the party label as a shortcut with which to assess candidates or legislation about which they have little or no information." Popkin also went on to suggest that parties use ideological labels to distinguish themselves from other parties and to remind voters of their past accomplishments.

Numerous other scholars have similarly espoused of the benefits of using political parties as a shortcut for voting. Aldrich (1995) maintained that partisan affiliation and party labels provided an inexpensive way to infer a great deal of information. Aldrich also claimed that party labels provide reputational gains which reduce decision making costs. Similarly, (Dalton, 2013) stated "party voting is an effective and efficient shortcut for voting choice".

It is in regard to their purpose to the electorate, as a tool to aid voters, that the concept of party duration comes into play. Party duration, the length of time that a party has maintained control of the legislature, serves as an important cue for the electorate. Unlike their ability to identify a politician or policy's position on the political continuum, party duration identifies a party as familiar. As party duration increases, it serves to identify the incumbent party as the known and the challenger(s) as the unknown which can influence the outcome of elections. Central to this theory is the notion that voters are risk-adverse and therefore prefer the known to the unknown.

Much of my framework derives from scholars of economic voter theory like Alesina and Rosenthal (1995) who theorized that maintaining the same party in government leads to smaller economic fluctuations and more stable economies because economic policies and plans are known and consistent. In constructing their model of the U.S. case, they held that the preferences of the two parties are known: the

Democratic Party (Party D) prefers managing unemployment and economic growth while the Republican Party (Party R) is concerned with managing inflation. When the probability that Party R will win an election is large, a victory by Party D causes larger economic shocks because the shift of the focus of economic policy away from inflation towards unemployment policy and economic growth are less expected.

In the same vein, Alesina et al. (1996) found, studying a cross-national sample of one-hundred-thirteen countries over thirty-two years, countries with higher levels of government instability experience lower economic growth. Similar results have been found regarding debt and external borrowing (Ozler and Tabellini, 1991) and inflation (Cukierman, Edwards and Tabellini, 1989). Each of these studies built their arguments by focusing on "risk-adverse economic agents." They suggested that government instability may lead these economic actors to hesitate to invest in an economy or to exit and invest abroad.

Economic and psychological scholars have coined the term *decision ambiguity* to refer the the hesitance of consumers to turn away from an established brand, even when faced with a superior challenger (Muthukrishnan, 1995). Krupnikov, Morton and Shipan (2008) argued that risk aversion combines with decision ambiguity, leading to a bias which favors the status quo and low legislative turnover. Using the 2008 and 2010 CCES, Eckles et al. (2014) found evidence that risk adverse voters typically favor incumbents and increasing risk adversion increased the likelihood of supporting an incumbent, even when given the option of supporting a candidate closer to the voter's ideal point.

3.2.2 Electoral Volatility and Political Stability

Scholars interested in studying the factors which influence the outcome of elections have chiefly studied the concept of electoral volatility. Electoral volatility is defined as the shift in the vote shares and change within the party system based on

aggregate election results (Ascher and Tarrow, 1975; Pedersen, 1979; Tavits, 2008). With high electoral volatility, political representation becomes destructured, creating a situation where political identities and loyalties are reestablished from election to election (Roberts and Wibbels, 1999). Scholars of electoral volatility attribute the phenomenon to three factors: first, changes in party support on the level of individual voters who vote in election t and election $t + 1$; second, change in the composition of the electorate resulting from entrance, exit, and abstention; third, change in the available parties due to entrance, exit, non-contestation, and changes to coalitions (Crewe, 1985; Birch, 2003).

Numerous scholars interested in studying electoral volatility have considered which factors play a role in influencing the outcome of elections. One of the earliest scholars who looked to explain electoral volatility was Huntington (1968) who suggested that economic and political reform which increased social mobilization could have a destabilizing effect on developing societies. Central to Huntingtons claim was the idea that granting suffrage to new voters who previously were unable to vote could lead to an influx of new or previously unrepresented preferences entering into the electoral arena, leading to an increase in electoral volatility, a process Huntington termed *political decay*.

Similarly, Bartolini and Mair (1990) proposed that the main effect of mobilization on electoral volatility was through the introduction of new voters with different preferences than the previous electorate. Studying elections in India, Vanderbok (1990) found evidence that changes in support for the National Congress Party could be explained by looking at the level of mobilization of opposition party supporters. Other scholars who have studied elections in India have found similar results when examining other increases in mobilization (Yadav, 2000).

Examining ten Western democracies over the course of nearly one-hundred years, Przeworski (1975) developed four assumptions to explain why increasing mobi-

lization can lead to an increase in electoral volatility. First, changes in the membership of the party system leads to instability in the typical patterns of behavior. Second, newly mobilized citizens possess different preferences than the previous citizens and the newly mobilized individuals are not socialized to the norms which govern behavior and therefore have less stable behavior. Third, newly mobilized individuals have not experienced the repeated experiences within the party system which reinforce of past behavior and therefore show less stable behavior. Finally, since patterns of behavior are transmitted from one generation to the next, simple demographic replacement does not lead to the decay of institutionalized patterns. However, Przeworski's results suggest that increasing mobilization does not have an impact on electoral volatility (mobilization only explained over fifty percent of the recorded electoral volatility in only two countries in Przeworski's sample). Instead, Przeworski argued that group abstention from the electoral process (whether voluntarily or as a result of repression) better explained electoral volatility.

However, mobilization is not the only explanation which scholars have considered to explain electoral volatility. Tavits (2005) contended that electoral volatility could best be explained by the passage of time. Looking at fifteen Eastern European democracies, Tavits proposed that there is a process of stabilization which can only occur over time. She found evidence that regime changes result in an immediate spike in electoral volatility which began to show signs of declining after a democracy has survived for around ten years. Mainwaring and Zoco (2007) also found evidence that time influences electoral volatility. However, looking at forty-seven countries over nearly sixty years, they claimed that the era in which a democracy came into existence was more important than the passage of time, stating "the critical determinant of the stabilization of electoral competition is when democracy was born, not how old it is."

Scholars have also suggested that different types of social cleavages in society

can explain electoral volatility. These scholars have theorized that voters in ethnically diverse countries typically support the party which best represents their ethnic group and the more ethnically diverse a country, the greater the number of parties which are able to have a say in the government (Bartolini and Mair, 1990). Using survey data from the National Election Study, Heath (2005) suggested that social cleavages best explained the level of electoral volatility observed in India. Heath found greater levels of volatility in states where the political contest was structured around cleavage lines and where these cleavages were highly polarized. Looking at African legislatures, Ferree (2010) held that ethnic cleavages best explained electoral volatility. Ferree focused on understanding the size and configuration of politically salient groups. Across thirty-three countries, she found that electoral volatility was highest when there were no social groups that were large enough to form a majority on their own. Ferree stated that the African context was different than others and that explanations used in other parts of the world were less applicable to explaining volatility in Africa. However, Tavits (2005) found evidence that social cleavages only affect political stability during periods of economic turmoil.

Scholars have even considered that the format of the party system and electoral laws can affect the level of electoral volatility in a country. Pedersen (1979) examined the relationship between electoral volatility and the format of the party system in thirteen European countries. Pedersen posited two mechanisms by which the format of the party system can affect voting behavior and influence electoral volatility. First, the more parties which compete in an election, the smaller the average perceived distance between parties and the higher the probability that a voter will transfer her vote. Second, if the party space changes from one election to another, then the probability that a voter will transfer his vote from one party to another will also change. Pedersen concluded that electoral volatility is a function of the format of the party system and short-term changes in that format.

Building on Pedersen's work, Bartolini and Mair (1990) examined the relationship between individual volatility, decisions of individual voters, and aggregate volatility. They argued that individual volatility was a function of the number of parties and increasing the number of parties produced greater volatility. Furthermore, they found a positive relationship between individual volatility and aggregate volatility increasing individual volatility led to greater aggregate volatility.

Looking at Latin America, countries typically characterized by high levels of electoral volatility, Roberts and Wibbels (1999) considered whether institutional variables could have an effect on volatility. Using a pooled cross-sectional time-series design, they found evidence that the fragile nature of the democratic regimes and the party systems influenced the observed levels of volatility. Inspired by the different levels of volatility between Western European countries and Latin American countries, Mainwaring (1998) studied Brazil's party system to better understand the volatility of its party system. Mainwaring suggested that Brazil's high levels of volatility were higher than advanced industrial democracies because of structural and institutional factors. He cited rules which encouraged politicians to maintain a personalistic networks and frequent party switching as factors which harm the relationship between citizens and the Brazilian parties, leading to high electoral volatility. Birch (2003) looked to apply the institutional framework for electoral volatility which developed from scholars studying Western Europe to post-communist European governments. However, Birch argued that parties in post-communist states are less able to adapt and absorb new voters and therefore exhibit greater volatility. She found that the electoral system, the threshold of representation, party replacement and the number of parties best explained electoral volatility in the twenty countries she examined.

Several scholars have studied the relationship between economic conditions and electoral volatility. For instance, it has been shown that economic turmoil between 1982 and 1990 helped explain electoral volatility in Latin America (Remmer, 1991).

Similarly, looking at sixteen Latin American countries, Roberts and Wibbels (1999) found that short-term economic factors and institutional structures could be used to explain the electoral volatility over two decades. Studying elections in India from 1967 to 2004, Nooruddin and Chhibber (2008) also looked to explain electoral volatility by focusing on economic factors. They proposed that when governments possessed the financial resources to enact policy initiatives and create public programs, the electorate responded by rewarding the incumbent party. However, when resources were scarce, voters were more likely to offer their support behind opposition parties.

Scholars have even found evidence that austerity plans which were adopted by European countries looking to comply with EMU requirements have had an impact on electoral volatility, increasing support for parties on the left (Bohrer and Tan, 2000). Nicholson and Segura (1999) looked at the relationship between electoral volatility, economic conditions, and divided government in the American context. They theorized that divided government "muddles the water" and their analysis suggested that divided government could reduce the effect of economic conditions on electoral volatility, decreasing the likelihood that the president's party was voted out of power at the midterm election. Similarly, studying twenty-one western parliamentary democracies, Bengtsson (2004) found that economic effects depended on context. Specifically, the effects of the economy were greater when voters could identify a responsible party for economic conditions or could identify an alternative party to place into government. Studying electoral volatility which arises from the entry of new parties and the exit of old parties, Powell and Tucker (2009) suggested that economic change, measured as the ratio change in GDP, observed in twenty-one post-communist countries best explained the levels of electoral volatility.

Some scholars have even held that high degrees of electoral volatility are indicators of party system instability – that the shift of voter support away from one party to another would lead to the emergence of new parties, the inability of parties to

build stable bases of support, and the collapse of established parties (Bielasiak, 1997; Olson, 1998; Innes, 2002; Birch, 2003). These scholars have theorized that electoral volatility can even become a hindrance to the consolidation of democracy. However, others have placed responsibility on elites rather than voters, and have argued that it is not electoral volatility that leads to party system instability, but that party system instability leads to electoral volatility (Pedersen, 1979; Tavits, 2008).

Examining post-communist party systems of Eastern Europe, Kitschelt et al. (1999) posited that institutions which favored candidates over the party and populist parties were better able to attract supporters in unstable party systems. Furthermore, they argued that in countries with less volatility, parties are more likely to "develop a longer time horizon of office maximization that makes them prefer institutions even though they look quite irrational by criteria of short-term office seeking." Mainwaring, Scully et al. (1995) suggested that stable party systems enhance mechanisms of legitimacy and accountability and were less likely to see the rise of populist leaders than countries with higher electoral volatility. Similarly, Mainwaring (1998) proposed that high levels of electoral volatility weakened the connection between the electorate and parties, which has led to frequent party switching amongst politicians as well as frequent party turnover and economic turmoil in Brazil. Scholars have also stated that unstable and fragmented party systems can be major impediments to the success of economic reform in newly transitioned democracies which can hinder long-term democratic consolidation and stability (Haggard and Kaufman, 1995).

However, scholars have also theorized that some volatility is crucial to legitimize a democracy. For instance, Przeworski and Limongi (1997) required alternation of office before a regime can be classified as a democracy. Huntington (1993) even proposed that a democracy was only consolidated if it passed, what he called, a *two-turnover test* - the group or party that comes to power in the initial election following a transition to power must turn over power after losing an election, and then the

second group or party must also turn over power at a later election. In fact, scholars like Lijphart (1999) and Giliomee and Simkins (1999) asserted that too little electoral volatility can lead to permanent winners and give too much power to incumbent parties. Du Toit (1999) even warned that continued rule by a single party could result in an authoritarian regime with a hegemonic party system.

Much of the work done to understand electoral volatility grew from scholars interested in understanding political stability. This partially stems from the fact that political stability has referred to a variety of different concepts to different scholars over the years. For instance, political stability has been used to study democratic regimes (Bienen and Gersovitz, 1985; Feng, 1997; Cheibub and Limongi, 2002), the tenure of political leaders (Bienen and Van de Walle, 1991; Arriola, 2009), and even the cabinets in parliamentary systems (Browne, Frendreis and Gleiber, 1984; King et al., 1990). More recently, the political stability framework has been used by scholars concerned with political parties and how long they are able to remain in power (Maeda and Nishikawa, 2006; Castro and Martins, 2013).

Not surprisingly, the definition of political stability employed by a scholar can lead to drastically different interpretations of the same country. Consider the case of Italy. Between 1946 and 1993, there were fifty-six different cabinets formed in Italy. By studying cabinets, Italy's political system appears highly unstable (Cioffi-Revilla, 1984). However, the Christian Democratic Party (DC) led various coalition governments for forty-four years between 1948 and 1992. Italy's government exhibits extreme stability when examined through the context of which party has controlled the government (Mershon, 1996, 2001). The stability of Japan's government in the postwar era is similarly conditional on the definition of political stability employed. Japan's Liberal Democratic Party (LDP) controlled the government for almost forty years from 1955 to 1993. However, during this period, there were fifteen different Prime Ministers and twenty-seven cabinets (Maeda and Nishikawa, 2006). Of the

different definitions, only political stability focusing on which party controlled the government accurately captures the environment most often attributed to the Japan's politics during this period.

While the majority of studies interested in political stability focused on the survival of governments or cabinets, Maeda and Nishikawa (2006) deviated from the previous work by considering political stability within the context of political parties. Studying the effect of the length of time a party controls the executive in presidential versus parliamentary systems, they concluded that increasing the length of time a single party controls the executive behaves differently under the two systems. They argued that presidential systems put pressure on parties to win over all other goals, resulting in less flexibility than parliamentary systems. As a result, incumbent parties are less likely to control the executive over time in presidential systems whereas under parliamentary systems, the likelihood of maintaining control of the executive increases the longer it is held. Studying the effects of economic conditions on party turnover in gubernatorial elections, Mueller (1982) suggested that incumbent parties and incumbent governors possess an electoral advantage. He argued that economic conditions did not impact governors because of this electoral advantage.

Examining the hazard rates, the likelihood of failure at time t given the subject has survived up until time t, of ruling parties in thirty-two democracies between 1951 and 1998, Nishikawa (2012) examined whether electoral rules and the structure of government affected the likelihood that incumbent parties remained in power. She found that incumbent parties in countries with elections decided by proportional representation experienced lower hazard rates than incumbents subject to first past the post elections. Additionally, she found evidence that two party systems produced higher hazards for the incumbent than multiparty systems.

3.2.3 The Incumbent Advantage

One of the most analogous concepts to the phenomenon of party duration that I consider in this study is the topic of candidate incumbency and the incumbent advantage studied predominantly in the American politics subfield. In many early works which studied elections in the American politics context, it was a generally accepted fact that incumbent politicians were simply more likely to win elections than their challengers. Key (1964*a*) stated that incumbents, as a result of their position, enjoyed a considerable advantage over their challengers. Only incumbents who demonstrated ineptitude or were struck by an unexpected disaster risked losing this edge. Similarly, Price (1965) argued that incumbents who were able to make a strong impression with their constituencies and avoided scandals were able to establish a strong foundation of support. Furthermore, challengers struggled to reach a competitive baseline of support, leading to the emergence of noncompetitive districts. Jones (1966) found that seventy to eighty percent of congressional districts are represented by the same Representative or by the same party for at least five consecutive elections, and that between eighty to ninety percent of Congress is made up of membership of the previous Congress. Over time, the concept known as the *incumbent advantage* began to refer to the increased likelihood of winning an election that candidates were afforded simply due to being the incumbent.

Cummings (1966) was one of the earliest to empirically examine the incumbent advantage. Comparing incumbent politicians seeking reelection to non-incumbents across comparable districts over a period of forty years, he found that incumbents were far more likely to be elected, controlling for various factors. Even more surprising, Cummings found that the presidential coattails effect (Ferejohn and Calvert, 1984; Campbell, 1986) was unable to unseat incumbents. Cummings argued that incumbents are able to cultivate ties to their local constituencies which served as a

powerful source of support. Erikson (1971) also empirically examined the incumbent advantage by studying the change in vote share between the election where a congressman was elected and his first election as an incumbent. He found that candidates running in their first election as an incumbent had a larger vote share than the previous election.

While scholars have found that incumbents running for reelection as far back as the Second Congress have displayed an electoral advantage (Price, 1975), scholars have also noticed that the incumbent advantage more than doubled during the 1960s (Erikson, 1971; Mayhew, 1974; Alford and Hibbing, 1981) and has continued to rise with each passing decade (Abramowitz, Alexander and Gunning, 2006). Others identified that voters were voting for incumbents two to three times as often by 1970s than they had been two decades earlier (Krehbiel and Wright, 1983). Using a new estimator of the incumbent advantage, Gelman and King (1990) showed that the effect has existed in House races since at least 1900. While they agreed with many other scholars that the incumbent advantage has increased since the middle of the century, they found that incumbents receive closer to twelve percent just for holding office during elections and also emphasized that an advantage of around two percent existed even before that.

Many of the earliest studies of the incumbent advantage dichotomized incumbency in one of two ways. Many treated incumbency as a dichotomous variable - either a candidate was an incumbent, or the candidate was not (Cummings, 1966; Kostroski, 1973; Levitt and Wolfram, 1997). These scholars analyzed the electoral fortunes of incumbents, at most, comparing incumbents to candidates running their first races. For these scholars, the incumbent advantage was simply a constant value associated with holding office. In his famous study on declining competition in House districts, Mayhew (1974) hypothesized a number of factors that could have an impact on the increased margins of victory. However, of his five possible explanations, none

made any mention of the length of incumbency. Bullock (1975) examined the effect of redistricting on incumbent performance and retirement but also took no consideration beyond whether the candidate was an incumbent or not. Such approaches treat all incumbents the same, regardless of whether they had served for two years, ten years, or over twenty years.

Similarly, many studies which have suggested that incumbent candidates are better known than non-incumbent challengers treat all incumbents the same. Stokes and Miller (1962), in their influential study on candidate recognition, only considered whether a candidate was an incumbent running for reelection and made no mention of how the length of incumbency could affect candidate salience. This weakness has also arisen in studies that have considered how incumbents are able to deter quality challengers (Schantz, 1980; Cox and Katz, 1996). Cox and Katz developed a path analytic model which used an indicator variable to simply identify whether an incumbent ran in a race. More recently, Boas and Hidalgo (2011) examined how incumbency affects radio control in Brazil. Boas and Hidalgo suggested that incumbents can use the media to their advantage and study the effect of incumbency on media control. However, they too only distinguish between office holders from the last election and non-incumbents, not taking into account how long the incumbents have held office.

The other common school of thought looked at candidates running for reelection for their first time as incumbents. These scholars were predominately interested in understanding the difference between a candidate's first race and the candidate's first race as an incumbent. This phenomenon became known as the *sophomore surge*. Many scholars of incumbency believed that the sophomore surge was an accurate representation of the "value of incumbency" (Cover, 1977) and strove to better understand what conditions could change and alter it.

Erikson (1972*a*) was one of the earliest to adopt this approach in his seminal study which examined the effect incumbency on U.S. House races between 1952 and

1954 to 1958 and 1960. To better understand how incumbency helped candidates, Erikson compared "the electoral performance of candidates in their first successful election with their electoral performance in their first reelection attempt as an incumbent." Erikson found that House candidates earned around one to two percent upon becoming the incumbent.

Scholars also found evidence that the sophomore surge could be observed in state legislatures. Looking at over 5100 freshman legislators in 32 states during the 1970s and 1980s, Holbrook and Tidmarch (1991) found evidence that first-term incumbents received a positive increase in vote margins. Additionally, they found that the sophomore surge increased in magnitude between the mid-1970s to mid-1980s. The effects of the sophomore surge have also been observed in primary elections. Furthermore, there is evidence that the size of the sophomore surge increased in primary elections around a decade before undergoing similar growth in national elections (Ansolabehere et al., 2007).

To better understand the increased vote margins obtained by freshman congressmen, Lockerbie (1994) considered three possible explanations for the sophomore surge: conversion, mobilization, and abstention. Rather than supporters of the opponent(s) remaining at home or the mobilization of new supporters, Lockerbie suggested that the sophomore surge is best explained by voters who had previously supported the losing candidate switching to support the incumbent. Using the American National Election Panel Studies of 1956 to 1960 and 1972 to 1976, he found stronger support for this theory over the other potential explanations.

A similar measure of the incumbent advantage is known as the *retirement slump*. The retirement slump refers to the average loss a party suffers when the candidate who won the previous race chooses not to run in the current race. Alford and Brady (1993) and Zaller (1998) found that the loss of votes resulting from retirement is nearly equal in magnitude to the gains accrued by the sophomore surge. Desposato

and Petrocik (2003) suggested that the incumbent advantage serves as a voting cue or anchor, limiting voters from being affected by short-term factors and issues of the moment. They found evidence that short-term factors have a greater influence on elections following the retirement of an incumbent. The retirement of an incumbent can also have an impact on campaign spending. Between 1992 and 2000, retiring incumbents spent nearly twenty percent more than their party's successor and received higher vote returns for their spending (Campbell, 2003). Alford and Brady (1988)proposed a combination of the sophomore surge and retirement slump which they coined the *slurge*.

After reviewing fifteen years of research on the incumbent advantage, Gelman and King (1990) concluded that previous measures of the electoral effects of incumbency in congressional elections, such as the sophomore surge, retirement slump, and slurge, are biased or inconsistent. In attempting to devise a new measure for the incumbent advantage, they showed that the sophomore surge underestimates the true effect of incumbency while the retirement slump underestimates it. In fact, Gelman and King found that the sophomore surge estimates the effects of incumbency around two points less than their measure for the incumbent advantage. However, Gelman and King unfortunately devised a measure that only considered whether an incumbent runs for reelection and did not take into account the length of incumbency. Gelman and King (1994) returned to this approach, devising an estimation technique applicable to electoral systems with single-member districts and two major parties while Katz and King (1999) developed an analogous model for multiparty elections.

The notion that the effect of incumbency might be influenced by the duration of incumbency was first suggested as a result of Erikson's study. In response to Erikson's findings, Tidmarch (1972) suggested "the electoral value of incumbency may continue to grow with further years of seniority" and criticized Erikson for operationalizing incumbency as a nominal variable. Tidmarch argued that Erikson's find-

ings are informative regarding the effects of incumbency for freshmen Congressmen, but not beyond that. However, Erikson (1972*b*) responded that the vast majority of the electoral benefits associated with incumbency are acquired almost immediately during the candidate's freshman term. Unfortunately, Erikson arrived at this conclusion by examining members of Congress who had won at least two elections by 1952 and examined their margins in the three subsequent elections. Erikson found that the increase in the incumbent advantage was relatively uniform for both sophomores and veteran incumbents, but failed to acknowledge that treating all incumbents with two electoral victories as veterans is only a minor improvement over treating all incumbents equally.

Unconvinced, a number of scholars revisited the issue. Born (1977) criticized Erikson's approach of aggregating all senior incumbents rather than taking into account different levels of seniority. Born examined elections from 1952 to 1970 period, taking into account the length of the candidates' terms of service. Born's findings for the freshman term are similar to Erikson's findings. However, beyond those findings, Born finds that sophomore Representatives show greater gains that Erikson's findings suggested and that the electoral gains are maintained by more senior members of Congress.

Four years later, Alford and Hibbing (1981) returned to this issue in even greater detail. Alford and Hibbing acknowledge that Erikson's approach was novel, in that previous studies had not even considered that there could be a difference in the incumbent advantage for sophomore incumbents and all others. However, they still criticized Erikson for oversimplifying the concept of incumbency. To reevaluate the incumbent advantage, they examined every election from 1946 to 1978, taking into account the individual candidates' levels of incumbency. This allowed them to examine the vote shares at nine levels of incumbency. To show the disparity between their approach and Erikson's, Alford and Hibbing ploted the different predicted effects

of incumbency. Figure 3.2 depicts the incumbent advantage as measured by Erikson's approach.

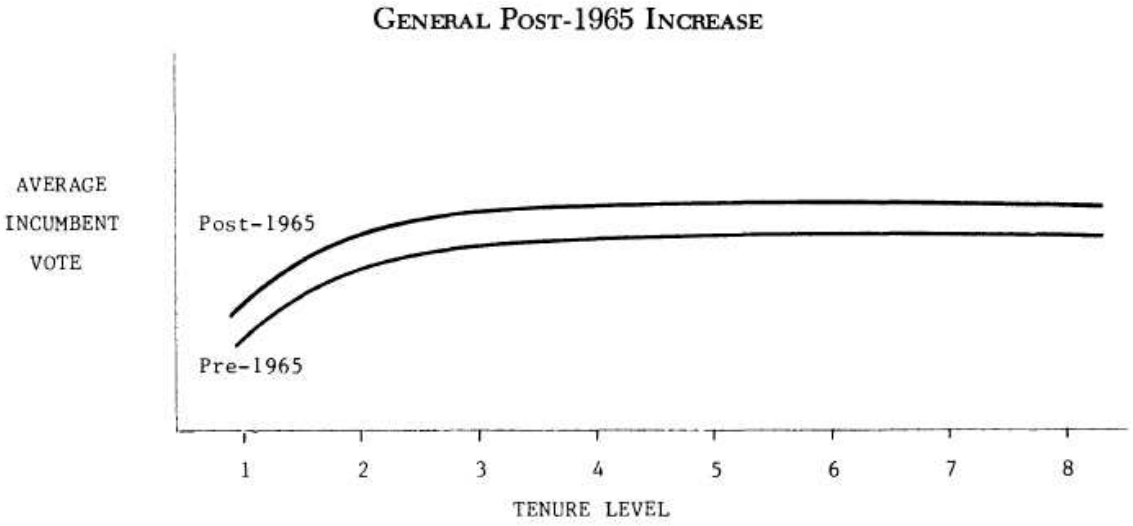

Figure 3.2: Alford and Hibbing (1981) Figure 2

In this plot, there is a large increase for candidates from their first term to their second, indicative of the incumbent advantage afforded to freshman members of Congress as calculated by Erikson. The increased vote between the second election and the third election captures the increased vote obtained by all veteran incumbents. Since Erikson treated all incumbents beyond their sophomore election as veterans, the change in vote takes on a flat slope. According to this approach, subsequent terms had no effect on votes. However, in Alford and Hibbing's calculations, the incumbent advatage had a very different effect. This plot is shown in Figure 3.3.

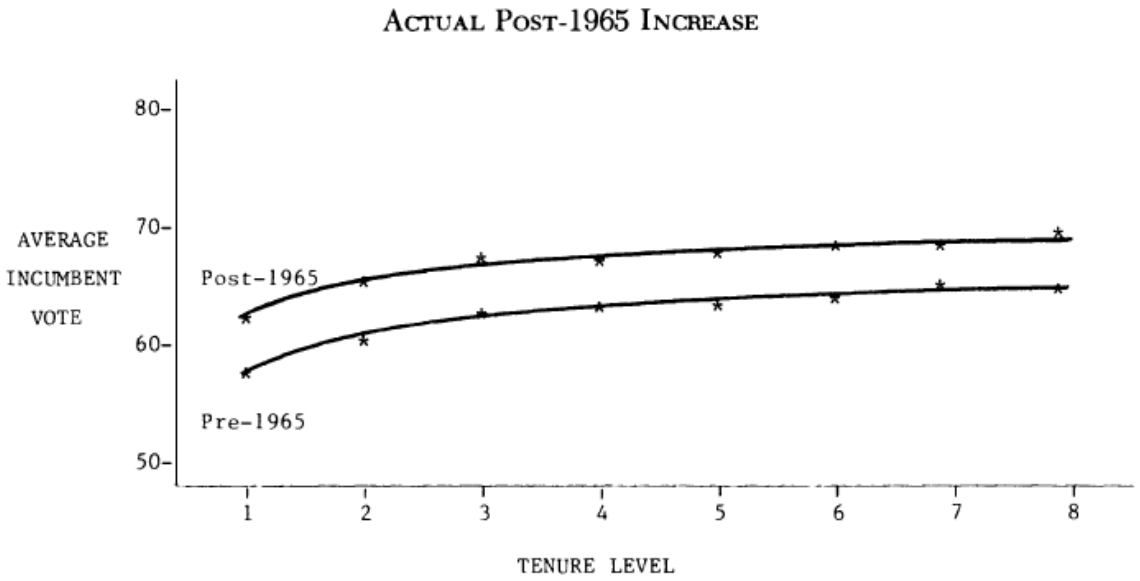

Figure 3.3: Alford and Hibbing (1981) Figure 4

By considering the number of terms an incumbent had held office, Alford and Hibbing found that the votes obtained by incumbents continued to rise, albeit at a slower rate in later elections. They found that incumbents continue to receive an increase in vote share from subsequent elections, although the largest increase occurs between their first and second campaign.

Unfortunately, over the years, only a handful of scholars have continued to study the effects of the length of incumbency. However, these studies have provided evidence that incumbent tenure is an important element of the incumbent advantage. To better understand the effects of the Watergate scandal in 1973 on party loyalties, Burnham (1975) compared the performance of incumbents in the 1972 and 1974 elections. He examined the electoral margins of what he called "first-generation incumbents" compared to those who were not running their first reelection campaign. Revisiting the question of candidate recognition, Parker (1981) found that incumbent seniority is positively related to candidate awareness by survey respondents for candidates in both House and Senate elections. Cain, Ferejohn and Fiorina (1984) found

that survey respondents expect more senior members of Congress to be more helpful to their constituents. At the state legislative level, it has also been found that the length of incumbent tenure is negatively related to likelihood that an incumbent will be challenged (Pritchard, 1992; Hogan, 2004) and the emergence of quality challengers (Van Dunk, 1997). The evidence that the length of tenure impacts the incumbent advantage for individual candidates highlights the importance of considering the length of party duration when attempting to understand the outcome of elections.

Studying the U.S. Congress, Fiorina (1989) suggested several mechanisms that give incumbents an advantage over challengers. Starting with their constituency, voters have an incentive to reelect older incumbents rather than replace them with younger, more attentive challengers because of Congress' seniority system. Second, Fiorina argued that shocks to voter preferences were correlated over time. A party that is strong today is likely to be strong tomorrow. Looking at the national level, the strength of the two parties in the U.S. case allowed them to attract resources that helped them remain strong and keep their members in office. Finally, Fiorina stated that the electorate better knows what the incumbent's position whereas they can only estimate the challenger's position. This should lead risk-adverse voters to favor incumbents over challengers.

The literature on the incumbent advantage developed as scholars sought to understand what aspects of incumbency built the relationship between incumbents and their constituencies and increased the likelihood of winning subsequent elections. One of the earliest advantages attributed to incumbent status was the salience provided from holding office (Stokes and Miller, 1962; Arseneau and Wolfinger, 1973; Parker, 1981; Hood and McKee, 2010). Others have argued that incumbents use the position of their office to bend electoral rules (for instance, through redistricting) or distribute favors to competitive districts to better position themselves to win subsequent elections (Mayhew, 1971; Erikson, 1972*a*; Tufte, 1973; Engstrom, 1980;

Lindbeck and Weibull, 1987; Dixit and Londregan, 1996).

Numerous scholars have studied how incumbent politicians utilize constituency service to greatly improve their chances of reelection (Fiorina, 1989; Cain, Ferejohn and Fiorina, 1987; King, 1991; Cox and Morgenstern, 1993). Still others have concluded that incumbents are able to defer strong challengers from even entering the race (Leuthold, 1968; Huckshorn and Spencer, 1971; Mann and Wolfinger, 1980; Hickman, 1992; Cox and Katz, 1996; Carson, 2003, 2005).

What these different factors all have in common is that they are all highlight the importance of the length of incumbent tenure. If risk-adverse voters are more likely to favor incumbents over challengers as Fiorina claimed, then incumbents who have held office for longer should benefit from this advantage even more than incumbents with shorter tenures. The longer an incumbent is in office, the more certain the electorate can be regarding his or her position. Candidate salience also increases as the length of incumbency increases. Parker (1981) claimed that the increased term length for Senators led to more opportunities to come into contact with their constituency which increased candidate awareness. It therefore follows that increasing incumbent tenure would similarly increase the number of opportunities for candidate interaction, increasing candidate salience.

Similarly, if constituency service best explains the incumbent advantage, as many scholars claimed, then increasing the length of incumbency gives candidates more time to develop larger staffs and offices and serve more members of their constituency. Increasing the length of time an incumbent holds office also increases the opportunities for an incumbent to bend electoral rules in their favor. The theory that incumbent candidates are able to defer strong candidates also benefits from considering the length of incumbent tenure. Each election where an incumbent candidate is able to defer strong challengers and dominantly win against a weaker opponent serves to validate the image of the incumbent as unbeatable. Over repeated elections, this

image becomes more and more reinforced.

These criteria are not limited to incumbent candidates, but can also be applied to incumbent parties. Electorates are more familiar with the policy positions of incumbent parties than those of the challengers. In fact, Alt (1985) suggested that the stability associated with party incumbency is more pronounced in countries where parties must form coalitions to acquire the necessary seats to control the government. Coalitions built around numerous social cleavages cannot drastically change policies out of fear of the coalition collapsing and loss of control of the government. Therefore, these countries should experience the greatest sustained effects and least changing policies. Incumbent parties also benefit from increased salience and the ability to serve voters more than their challengers. Additionally, incumbent parties are certainly able to pass electoral legislation that increases their likelihood of remaining in power. Furthermore, in multiparty systems, incumbent parties or coalitions that have maintained control of the government for extend periods are likely to deter the formation of parties that could remove them from the government. Rational candidates, concerned primarily with winning elections, are also more likely to join strong parties (Desposato, 2006).

3.3 Hypotheses

Given the discussion presented above, I propose that party duration, as defined earlier as the number of years the incumbent party has maintained control of the legislature in unicameral legislatures or the lower house in bicameral legislatures, is negatively correlated with the likelihood an incumbent party loses an election. Scholars have established that political parties influence the electoral decisions of voters. Given that the length of candidate tenure affects the outcome of elections (Born, 1977; Alford and Hibbing, 1981) and the evidence provided by Maeda and Nishikawa (2006), who examined the relationship between the outcome of elections

and the length of time a party controls the executive, and Nishikawa (2012), who studied the hazard rates of incumbent parties, it is a natural extension to examine the effects of the length of time a party has controlled the legislature on the outcome of elections.

To test the effect of party duration on the outcome of elections, I examine the likelihood of incumbent party loss. The central hypothesis of this project, focusing on the effect of party duration on the likelihood of incumbent party loss, is as follows:

> **Hypothesis 1** Incumbent parties will experience a decreasing hazard rate the longer they remain in power.

Furthermore, to better understand the mechanisms by which party duration influences the likelihood of incumbent party loss, I have developed four additional hypotheses. The first two consider the effect of party duration on two additional measures of the outcome of elections: the seat share and the vote share won by the winning party. With these two hypotheses, I propose that increasing party duration reduces the likelihood that an incumbent party will lose an election because the longer a party controls the legislature, the larger their seat share and vote share.

> **Hypothesis 2** As the length of party duration increases, the seat share obtained by the winning party will increase.

> **Hypothesis 3** As the length of party duration increases, the vote share received by the winning party will increase.

However, American politics scholars who have studied the incumbent advantage have often argued that incumbent candidates do not become more secure by gaining more votes, but by becoming more secure in the votes they already receive. For instance, Mayhew (1974) produced one of the most comprehensive examinations of the decline in competition of congressional elections. Examining a sixteen year period from 1956 to 1972, Mayhew found that the number of congressional districts

with close elections dropped dramatically. While House races without incumbents tended to be close contests, the number of races where an incumbent ran and which were competitive (where the Democratic percentage of the vote was between forty to sixty percent) fell by nearly fifty percent over the sixteen years. In fact, by 1972, he found that it was more common for both Republicans and Democrats to be running in safe races. However, Mayhew also noted that this is not a recent phenomenon, but has been occurring for over a century. Burnham (1975) noted that the shape of the distribution of votes in races with and without incumbents are very different. Only races with non-incumbents had a central peak, resembling the more competitive national vote. I have developed two alternative hypotheses based on the theory that incumbent parties do not gain more seats and votes, but better maintain the seats and votes they already possess:

Hypothesis 2a As the length of party duration increases, the seat share obtained by the winning party will change by smaller values.

Hypothesis 3a As the length of party duration increases, the vote share obtained by the winning party will change by smaller values.

3.4 Conclusion

One of my primary purposes is to show that party duration, the length of time that the incumbent party controls the legislature, has an effect on the outcome of elections. In this chapter, I have reviewed a number of unrelated, but important literature for my study of party duration.

I began by examining the works of political party scholars who have studied the various roles political parties perform. Based on the work of numerous scholars who have argued that political parties serve to aid voters, I proposed that party duration acts as a shortcut for voters. I then transitioned to a discussion of electoral volatility and political stability, largely focusing on scholars who have studied the

factors which influence the outcome of elections. Finally, I finished my analysis of the literature by reviewing the incumbent advantage and discussing how some of the proposed mechanisms by which incumbency affects candidates can also help parties.

I concluded this chapter by discussing the five hypotheses which I will test in Chapter 4. This chapter has helped to build the foundation for the empirical analysis which will follow. In the next chapter, I will discuss the methods and data before proceeding with the empirical analysis.

CHAPTER 4
EMPIRICAL ANALYSIS OF PARTY DURATION

4.1 Introduction

In the previous chapter, I reviewed the literature used to ground my theory that party duration affects the outcome of elections. After reviewing the literature on the role of political parties, electoral volatility and political stability, and the incumbent advantage, I proposed that the longer an incumbent party controlled the legislature, the more secure that party would become. I closed that chapter by presenting my main hypothesis of the proposed relationship between party duration and the likelihood the incumbent party loses an election as well as the four supplemental hypotheses.

In this chapter, I turn to the empirical analysis which will show the effect of party duration on elections. I start with the analysis of Hypothesis 1 which evaluates the effect of party duration on the outcome of elections by examining the likelihood that the incumbent party loses an election. In Chapter 2, I largely considered the effect of party duration on the likelihood that the incumbent party would lose an election through simple bivariate models. This chapter will present the full model used in this project, but for now, I focus solely on the impact of party duration on election outcomes. I then move on to Hypothesis 2 and 2a which look at winning party seat share followed by Hypothesis 3 and 3a which apply the same framework to the winning party's vote share. While I only briefly discuss the methodological concerns related to the variables, a more detailed discussion can be found in the Mathematical Appendix at the end of the chapter. I conclude the chapter by reviewing the findings and discussing considerations for the later chapters.

4.2 Empirical Analysis

4.2.1 Party Duration and the Likelihood of Incumbent Party Loss

Hypothesis 1 Incumbent parties will experience a decreasing hazard rate the longer they remain in power.

A large portion of the literature on the incumbent advantage states that incumbency provides electoral safety. Concepts like the sophomore surge were designed to examine how incumbents became more secure once they were elected into office. Given the evidence provided by Alford and Hibbing (1981) who argued that the incumbent advantage changed as incumbency increased, Maeda and Nishikawa (2006) who found evidence that the likelihood of maintaining control of the executive increases the longer it is held in parliamentary systems, and others, the likelihood of incumbent party loss is predicted to decrease as party duration increases – incumbent parties should become more secure the longer they remain in power.

The first hypothesis presented in this project focuses on examining the effect of party duration on the outcome of elections by examining the likelihood that the incumbent party loses an election. As discussed in Chapter 2, this analysis utilizes a unique dataset of election outcomes. From this dataset, I created a dichotomous indicator variable which identified whether the incumbent party lost an election (coded one) or did not lose (coded zero) which served as the primary dependent variable. I then used that variable to create a count of the number of years the incumbent party maintained control of the legislature. This variable functions as my measure of party duration and serves as the key independent variable under consideration in this chapter.

In the prior chapter, I used a simple logit regression to present a bivariate analysis of the effects of party duration on the likelihood of incumbent party loss. Those results suggested, congruent with Hypothesis 1, that increasing party duration

decreased the hazard rate, measuring the likelihood of incumbent party loss, for the incumbent party. However, while the bivariate regression results are useful, better understanding the effects of party duration on elections requires accounting for various important aspects of the data. Specifically, the preliminary analysis ignored the fact that the dataset used in this project is a cross-sectional time-series dataset. The observations of the variables for each election are not independent observations. They are related temporally (to previous election) and cross-sectionally (to other elections in the same country). To account for the temporal and cross-sectional effects of the data, I employ the use of cubic polynomials, proposed by Carter and Signorino (2010) to account for temporal effects in binary time-series cross-sectional data[1]. Since the time variable is a measure of the time since the last failure, I include a squared and cubed variable for the length of time the incumbent party has held office.

The results of the full multivariate logit regression for the effect of the length of party duration on the likelihood of incumbent party loss, accounting for the cross-sectional time-series nature of the data, including the key economic variable, and including the control variables discussed in the previous chapter, are presented in Table 4.1. As discussed in Chapter Two, the key economic independent variable utilized in this project is the annual change in GDP per capita measured as a fraction of the previous year's GDP per capita.

[1]For a detailed discussion, see the Mathematical Appendix.

Table 4.1: Multivariate Logit Results for the Likelihood of Incumbent Party Loss

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	-0.046	-0.031
	(0.031)	(0.041)
GDP Per Capita Change (Centered)	-4.165 ***	-4.176 ***
	(1.374)	(1.377)
Party Duration * GDP Change	-0.280 **	-0.281 **
	(0.130)	(0.137)
Parliamentary	0.290	0.299
	(0.221)	(0.222)
Presidential	0.126	0.125
	(0.201)	(0.201)
Bicameral Legislature	-0.595 ***	-0.604 ***
	(0.166)	(0.166)
Plurality/Majoritarian	0.969 **	0.940 **
	(0.444)	(0.444)
Proportional Representation	0.745 *	0.717 *
	(0.409)	(0.409)
Single Member Constituency (SMC)	0.173	0.192
	(0.649)	(0.649)
Multi-Member Constituency (MMC)	0.296	0.314
	(0.634)	(0.634)
Nation-Wide Constituency/National List (NL)	0.059	0.074
	(0.760)	(0.761)
SMC + MMC	0.385	0.383
	(0.629)	(0.629)
SMC + NL	0.119	0.136
	(0.693)	(0.692)
MMC + NL	0.317	0.305
	(0.632)	(0.633)
Majority	-0.589 ***	-0.587 ***
	(0.160)	(0.160)
Time^2	0.000	0.001
	(0.001)	(0.002)
Time^3	0.000	0.000
	(0.000)	(0.000)
Constant	-1.166	-1.058
	(0.827)	(0.835)
Observations	1,061	1,053

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The first column presents the model estimates for the full model while the second column drops the outlier case and evaluates only cases where party duration was less than fifty-five years. In both models, the calculated effects of party duration

on the likelihood of incumbent party loss are negative, but not statistically significant at traditionally accepted values.

However, as I suggested in Chapter 2 and will discuss in greater detail in subsequent chapters, I propose that a multiplicative interaction best captures the relationship between party duration and the state of the economy. While a more detailed analysis is necessary, looking at the cases of Japan's Liberal Democratic Party (LDP) during the 1970s and Italy's Christian Democratic Party (DC) during the 1970s suggests that increasing party duration can change the effect of economic conditions on elections.

Therefore, assessing the effects of party duration on the likelihood of incumbent party loss cannot be done by simply examining signs and coefficients, but requires examining a plot of the effects[2]. Figure 4.1 presents a plot of the predicted probability of losing an election at the different lengths of party duration[3][4].

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[2]For a detailed discussion, see the Mathematical Appendix.

[3]The relationship between party duration and the state of the economy on the likelihood of incumbent party loss will be plotted in Chapter 6.

[4]The plots with the 95% confidence intervals and the corresponding plots for the sample of cases where party duration was less than fifty-five years can be found in the Appendix as Figures B3, B4, and B5.

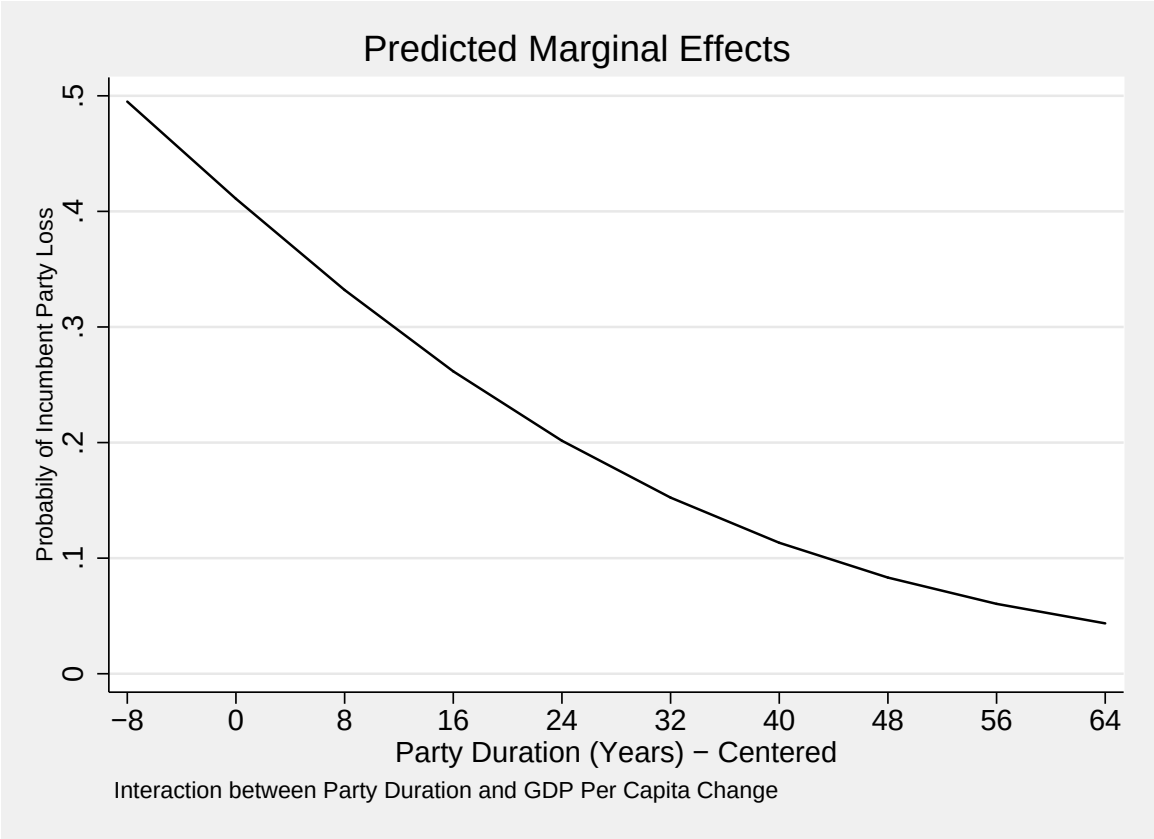

Figure 4.1: Predicted Marginal Effects - Full Sample.

This plot for the predicted marginal effects can also be thought of as the hazard rate and shows the likelihood a party loses an election given they have not lost an election up until that year. The most evident feature of this plot is the negative effect that increasing party duration has on the likelihood of incumbent party loss. For parties which face an election the year immediately after securing control of the legislature, the predicted likelihood of incumbent party loss, holding all other variables at their mean values, is just under 0.5 (0.495). Increasing party duration immediately causes the likelihood to begin to decline. As party duration increases, reaching four years, the predicted likelihood falls to 0.453. When party duration reaches eight years, the mean, the likelihood of incumbent party loss has fallen even more, to 0.411. This decline continues, although the slope becomes less steep as party duration increases, until party duration reaches its maximum, seventy-six years, where the predicted

likelihood of incumbent party loss, holding all variables at their mean values, is only 0.040. The results presented above and the results presented in the bivariate analysis of Chapter 2 provide strong evidence that increasing the length of party duration decreases the hazard rate, the probability that an incumbent party does not win an election given they have not lost an election to that point, findings consistent with Hypothesis 1.

4.2.2 Party Duration and Winning Party Seat Share

Hypothesis 2 As the length of party duration increases, the seat share obtained by the winning party will increase.

While I have shown that increasing party duration decreases the likelihood of incumbent party loss, there are still a number of questions related to this effect. For instance, by what mechanism does increasing party duration reduce the likelihood of loss? Do incumbent parties win more seats and votes as party duration increases, or do they better manage their margins of victory? To examine the effect of party duration on winning party seat share, I constructed a variable which measures the number of seats the winning party secured in the legislature (or lower legislative chamber) divided by the total number of seats in the chamber (and then multiplied by one-hundred). As such, it is a continuous variable which takes on values between zero and one-hundred.

Similar to the analysis of the likelihood of incumbent party loss, it is crucial to account for the cross-sectional time-series dynamics of the data. To estimate the effects of party duration on winning party seat share, accounting for all aspects of the data, including the economic independent variables, and including the control

variables, I utilized a Fixed Effects model[5][6]. The results of the full model are shown in Table 4.2.

Again, the left column presents the analysis for the full sample while the right column only examines the cases where party duration is less than fifty-five years. In both models, the effect of party duration on winning party seat share is positive, but is not statistically significant. However, the regression results do not adequately assess the relationship between party duration and winning party seat share given the interaction between party duration and the measure of the state of the economy. A plot of the relationship between party duration and winning party seat share is shown in Figure 4.2[7].

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[5]For a detailed discussion, see the Mathematical Appendix.

[6]The Test Statistic produced by the Hausman test was significant, indicating that the Fixed Effects model is more appropriate for modeling the data than the Random Effects model.

[7]The plots with the 95% confidence intervals and the corresponding plots for the sample of cases where party duration was less than fifty-five years can be found in the Appendix as Figures B6, B7, and B8.

Table 4.2: Multivariate Regression Results for Predicted Winning Party Seat Share

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	0.013	0.022
	(0.030)	(0.030)
GDP Per Capita Change (Centered)	3.677	3.552
	(5.438)	(5.438)
Party Duration * GDP Change	0.605	0.584
	(0.581)	(0.597)
Parliamentary	-5.389	-5.389
	(4.235)	(4.245)
Presidential	-2.817	-2.811
	(1.966)	(1.971)
Bicameral Legislature	-0.546	-0.781
	(1.277)	(1.299)
Plurality/Majoritarian	-2.097	-2.129
	(2.648)	(2.655)
Proportional Representation	-5.314 **	-5.270 **
	(2.575)	(2.582)
Single Member Constituency (SMC)	9.507 *	9.549 *
	(5.411)	(5.424)
Multi-Member Constituency (MMC)	8.671 *	8.597 *
	(5.133)	(5.146)
Nation-Wide Constituency/National List (NL)	31.60 ***	31.50 ***
	(6.676)	(6.693)
SMC + MMC	14.53 ***	14.65 ***
	(5.192)	(5.206)
SMC + NL	13.54 **	13.43 **
	(6.566)	(6.583)
MMC + NL	4.837	4.726
	(5.195)	(5.209)
Majority	17.92 ***	17.90 ***
	(0.714)	(0.716)
Constant	39.24 ***	39.47 ***
	(6.838)	(6.856)
Observations	1,099	1,092
Number of Countries	104	104

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The plot shown in Figure 4.2 presents the predicted seat share obtained by the winning party, given the interaction between party duration and GDP fraction change. While the slope of the two lines suggest that increasing party duration has a positive effect on winning party seat share, taking a look at the values of the predicted winning seat shares shows that the increase from the minimum value of party duration, one

year, to the maximum, seventy-six years, leads to only an increase of around only one percent (from 47.8 percent to 48.8 percent). While the slope is positive, the substantive change of increasing party duration is negligible. These results suggest that increasing the length of party duration does not have a positive effect on the seat share obtained by the winning party, findings which lead me to reject Hypothesis 2.

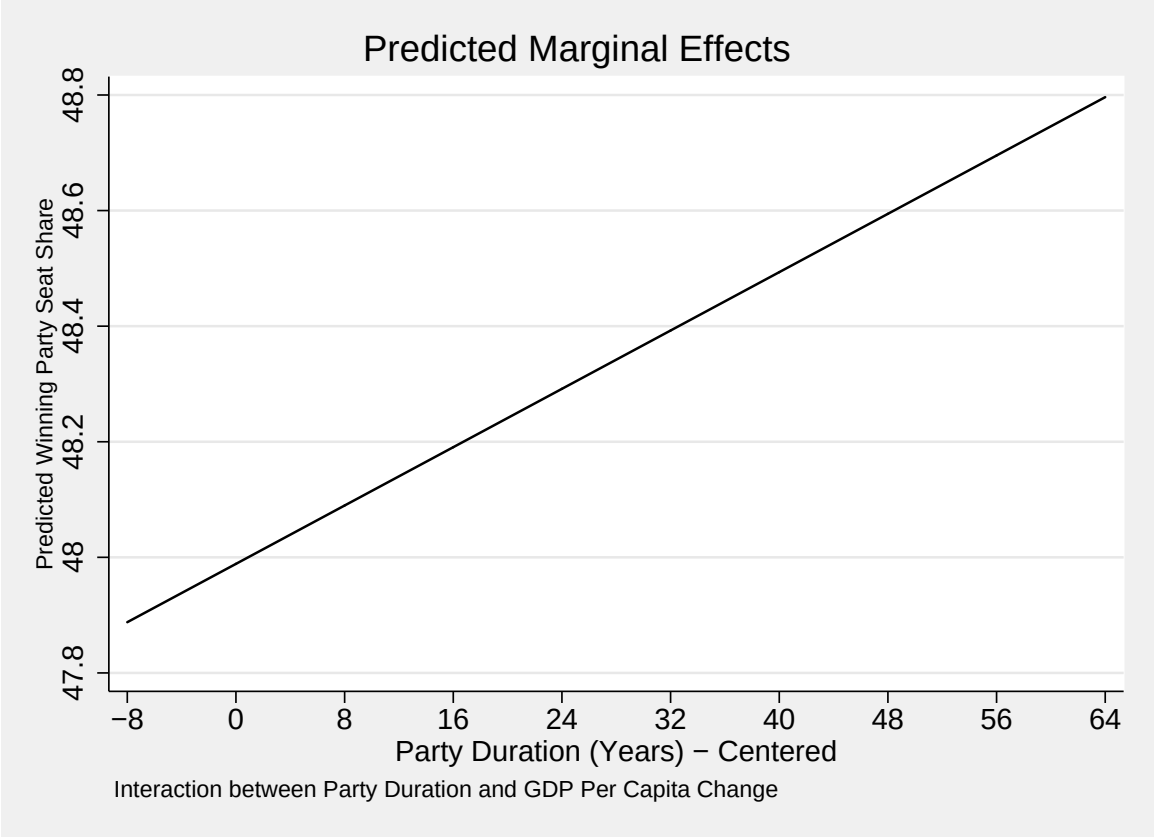

Figure 4.2: Predicted Marginal Effects - Full Sample.

Hypothesis 2a As the length of party duration increases, the change in the seat share obtained by the winning party will decrease.

The evidence presented above show that increasing party duration does not affect the seat share obtained by the winning party. However, as discussed earlier, another way to consider the effect of party duration on winning party seat share is to examine the change in the seat share obtained by the winning party. American

politics scholars who have studied the incumbent advantage have often argued that incumbent advantage can be explained by a decline in competitive districts – incumbent candidates become more secure in elections over time (Mayhew, 1974; Burnham, 1975).

To test the hypothesis that increasing party duration decreases the change to the winning party's seat share, I examined the absolute value of the change in seat share obtained by the winning party from one election to the next for parties which controlled the legislature across multiple elections. Since this measure is an absolute value, a loss of seven percent of the seat share is equivalent to a gain of seven percent of the seat share. In effect, this variable measures the fluctuation from one election to the next where smaller values indicate the incumbent party's seat share stayed more similar while larger values indicate greater changes in seat share from one election to the next. Similar to the analysis of the effects of the length of party duration on winning party seat share, the full model constructed also accounted for the cross-sectional time-series nature of the data. The results of the estimated Random Effects models for the relationship between party duration and the change in winning party seat share are presented in Table 4.3[8].

[8]The Test Statistic produced by the Hausman test was not significant, indicating that the Random Effects model is more appropriate for modeling the data than the Fixed Effects model.

Table 4.3: Multivariate Regression Results for Predicted Change in Winning Party Seat Share

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	-0.070 **	-0.073 **
	(0.027)	(0.029)
GDP Per Capita Change (Centered)	-15.53 ***	-15.28 ***
	(5.535)	(5.575)
Party Duration * GDP Change	-0.252	-0.188
	(0.579)	(0.595)
Parliamentary	-0.874	-0.871
	(1.738)	(1.739)
Presidential	0.544	0.556
	(0.544)	(0.556)
Bicameral Legislature	-0.203	-0.162
	(1.020)	(1.032)
Plurality/Majoritarian	0.771	0.776
	(2.362)	(2.367)
Proportional Representation	0.555	0.539
	(2.276)	(2.282)
Single Member Constituency (SMC)	4.610	4.590
	(3.432)	(3.436)
Multi-Member Constituency (MMC)	2.721	2.722
	(3.189)	(3.193)
Nation-Wide Constituency/National List (NL)	2.594	2.613
	(4.434)	(4.439)
SMC + MMC	1.974	1.928
	(3.195)	(3.199)
SMC + NL	5.081	5.089
	(3.575)	(3.579)
MMC + NL	2.515	2.530
	(3.201)	(3.205)
Majority	0.015	0.027
	(0.698)	(0.701)
Constant	5.910	5.871
	(4.675)	(4.684)
Observations	1,008	1,001
Number of Countries	91	91

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Unlike the analysis of the effects of party duration on winning party seat share, the results presented above show that the effect of party duration on the change in winning party seat share are both negative and significant. These results indicate that as party duration increases, the seat share obtained by the winning party changes by less and less, by around 0.6 percent for each year that a party controls the legislature.

However, as with the previous analyses, it is necessary to plot the predicted marginal effects to adequately assess the relationship between the variables. The plots of the relationship between party duration and the change in winning party seat share are presented in Figure 4.3[9].

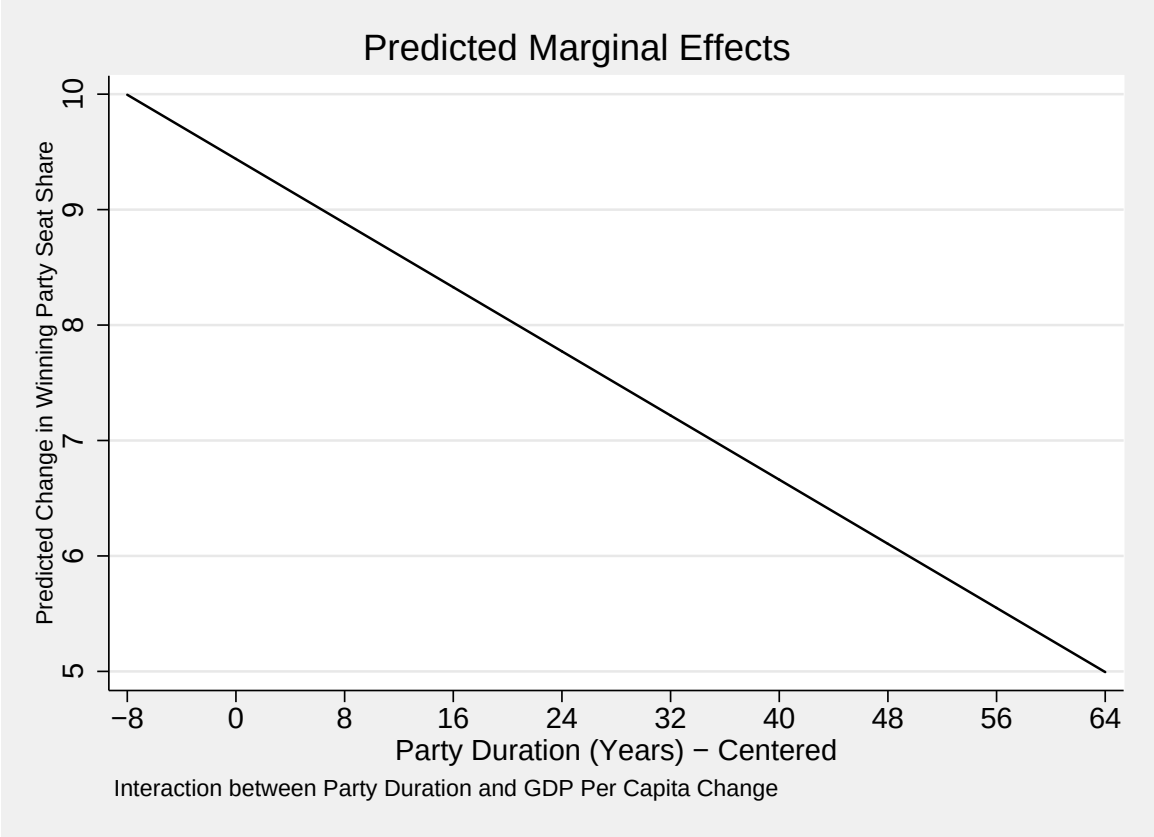

Figure 4.3: Predicted Marginal Effects - Full Sample.

Similar to the coefficient results presented above, this plot shows the negative relationship between party duration and the change in winning party seat share. Holding all other variables constant at their mean values, parties which immediately face another election can expect a change in seat share of around ten percent. As parties remain in control of the legislature longer and longer, this change decreases.

[9]The plots with the 95% confidence intervals and the corresponding plots for the sample of cases where party duration was less than fifty-five years can be found in the Appendix as Figures B9, B10, and B11.

For a party which has controlled the legislature for seventy-six years, the predicted change in seat share is only around five percent, around half the change experienced by a party which was elected in the previous year. While these results might not seem drastic, a party with a longer tenure holds onto five percent more seats than a party that was recently elected which can have drastic consequences for a party looking to control the legislature.

I proposed two mechanisms by which party duration can affect the seat share obtained by the winning party – increasing party duration could lead an incumbent party to become less likely to lose an election by leading to greater seat shares obtained by the winning party, or by better maintaining the winning party's seat share from one election to the next. Taken together, the results presented in this section tell a more complete story. As party duration increases, parties do not become more secure by securing more seats, but by maintaining the seats they already hold. In effect, increasing party duration leads to less fluctuation in the seats obtained by the incumbent party.

4.2.3 Party Duration and Winning Party Vote Share

Hypothesis 3 As the length of party duration increases, the vote share received by the winning party will increase.

Similar to its effect on seat share, I propose that understanding party duration's effect on winning party vote share and the change in vote share from one election to the next will help explain the mechanisms by which party duration affects the likelihood of incumbent party loss. Like the previous two measures, both these variables are continuous variables which take on values between zero and one-hundred. The first measure, the vote share obtained by the winning party, was constructed by dividing the number of eligible votes obtained by the winning party by the total number of eligible votes cast in an election (which was then multiplied by one-hundred).

Since the measure of winning party vote share is a continuous cross-sectional time-series variable, the same approach employed to examine the effects of party duration on winning party seat share was utilized to examine the relationship between party duration and winning party vote share. The results presented in Table 4.4 were calculated by using a Fixed Effects model[10].

[10]The Test Statistic produced by the Hausman test was significant, indicating that the Fixed Effects model is more appropriate for modeling the data than the Random Effects model.

Table 4.4: Multivariate Regression Results for Predicted Winning Party Vote Share

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	0.029	0.037
	(0.024)	(0.025)
GDP Per Capita Change (Centered)	5.584	5.535
	(4.720)	(4.752)
Party Duration * GDP Change	0.854 *	0.844 *
	(0.490)	(0.504)
Parliamentary	-3.036	-3.031
	(3.881)	(3.890)
Presidential	-2.943 *	-2.931 *
	(1.676)	(1.680)
Bicameral Legislature	2.288 **	2.063 *
	(1.135)	(1.154)
Plurality/Majoritarian	-7.037 ***	-7.098 ***
	(2.418)	(2.424)
Proportional Representation	-7.058 ***	-7.047 ***
	(2.384)	(2.389)
Single Member Constituency (SMC)	-2.528	-2.491
	(4.507)	(4.518)
Multi-Member Constituency (MMC)	-0.854	-0.924
	(4.298)	(4.308)
Nation-Wide Constituency/National List (NL)	26.07 ***	25.97 ***
	(5.552)	(5.565)
SMC + MMC	2.358	2.471
	(4.322)	(4.332)
SMC + NL	9.998 *	9.923 *
	(5.503)	(5.515)
MMC + NL	-3.527	-3.633
	(4.326)	(4.337)
Majority	11.97 ***	11.95 ***
	(0.619)	(0.620)
Constant	45.31 ***	45.55 ***
	(5.955)	(5.971)
Observations	1,030	1,023
Number of Countries	94	94

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The results presented in the full model find that the effect of increasing party duration on winning party vote share is positive, but not statistically significant at traditionally accepted values. The left column presents the analysis for the full sample while the right column presents the analysis of the smaller sample. To better understand these results, the plot of the relationship between party duration and

winning party vote share, holding all other variables constant at their mean values, are shown in Figure 4.4[11].

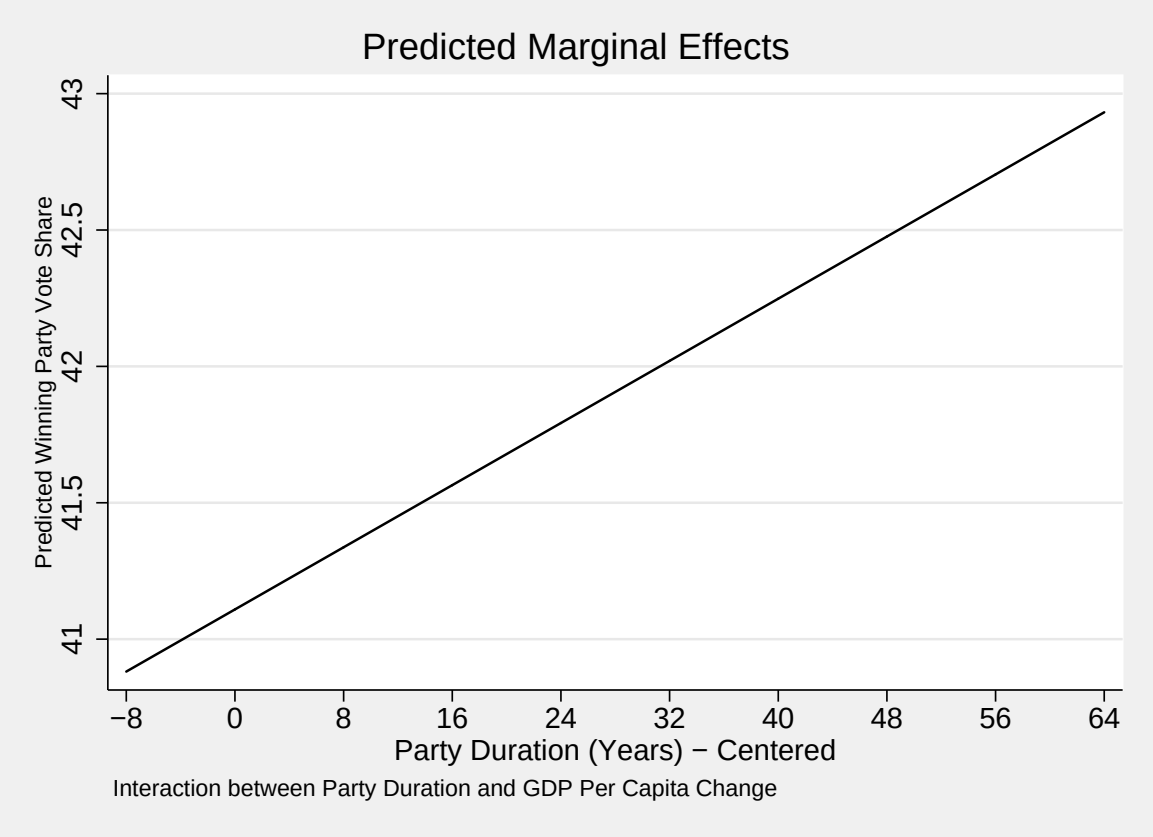

Figure 4.4: Predicted Marginal Effects - Full Sample.

Similar to the analysis of party duration on winning party seat share, the plot of the predicted marginal effects for the relationship between party duration and winning party vote shares is positive, but shows a minor substantive effect. Holding all other variables at their mean values, parties facing election immediately after gaining control of the legislature are, on average, predicted to obtain just under forty-one percent of the vote share. As party duration increases, the predicted vote share also increases, but by the time party duration has reached seventy-six years, the predicted

[11]The plots with the 95% confidence intervals and the corresponding plots for the sample of cases where party duration was less than fifty-five years can be found in the Appendix as Figures B12, B13, and B14.

vote share only rises around two percent to around forty-three percent. Based on these results, I must reject Hypothesis 3 – incumbent parties with longer tenure do not become more secure by obtaining greater vote shares.

Hypothesis 3a As the length of party duration increases, the vote share obtained by the winning party will change by smaller values.

The second proposed mechanism by which vote share can affect the likelihood of incumbent party loss is by decreasing the fluctuations experienced by an incumbent party from one election to the next. This section examines whether increasing party duration decreases the average change to the vote share obtained by the winning party. Again, I constructed a variable to measure the change in vote share from one election to the next and then took the absolute value of this measure. This variable also measures fluctuations from one election to the next. A party which experienced a ten percent change from the previous election either lost ten percent of its vote share or gained an additional ten percent, while a party which only experienced a two percent change either gained or lost only two percent of its vote share from the previous election, indicating that party was better able to maintain its overall support from the electorate.

Like the previous analyses, the methodological approach employed was chosen based on the continuous nature of the dependent variable and the cross-sectional time-series nature of the data. The results of the estimated Fixed Effects model are presented in Table 4.5 [12].

The estimated coefficient for the effect of party duration on the change in winning party vote share shows that increasing party duration has a negative and significant effect on the change in vote share. Increasing party duration is predicted

[12]The Test Statistic produced by the Hausman test was significant, indicating that the Fixed Effects model is more appropriate for modeling the data than the Random Effects models.

Table 4.5: Multivariate Regression Results for Predicted Change in Winning Party Vote Share

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	-0.060 ***	-0.065 ***
	(0.022)	(0.024)
GDP Per Capita Change (Centered)	-7.780 *	-7.576
	(4.666)	(4.696)
Party Duration * GDP Change	-0.458	-0.398
	(0.469)	(0.484)
Parliamentary	-17.54 ***	-17.52 ***
	(5.246)	(5.264)
Presidential	-0.846	-0.845
	(1.735)	(1.741)
Bicameral Legislature	0.313	0.413
	(1.075)	(1.093)
Plurality/Majoritarian	2.438	2.463
	(2.370)	(2.379)
Proportional Representation	1.857	1.846
	(2.374)	(2.382)
Single Member Constituency (SMC)	-7.908 *	-7.955 *
	(4.693)	(4.710)
Multi-Member Constituency (MMC)	-8.007 *	-7.985 *
	(4.477)	(4.492)
Nation-Wide Constituency/National List (NL)	17.81 **	17.84 **
	(7.937)	(7.964)
SMC + MMC	-7.092	-7.167
	(4.505)	(4.522)
SMC + NL	-10.20 *	-10.19 *
	(5.961)	(5.981)
MMC + NL	-9.464 **	-9.429 **
	(4.500)	(4.516)
Majority	-1.293 **	-1.284 **
	(0.590)	(0.592)
Constant	24.49 ***	24.35 ***
	(6.541)	(6.561)
Observations	952	945
Number of Countries	82	82

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

to decrease the change in vote share for the winning party. Similar to the analysis of the effects of party duration on winning party seat share, the vote share obtained by the winning party is predicted to change by around 0.06 percent less for each year an incumbent party controls the legislature. The predicted marginal effects are shown

in Figure 4.5[13].

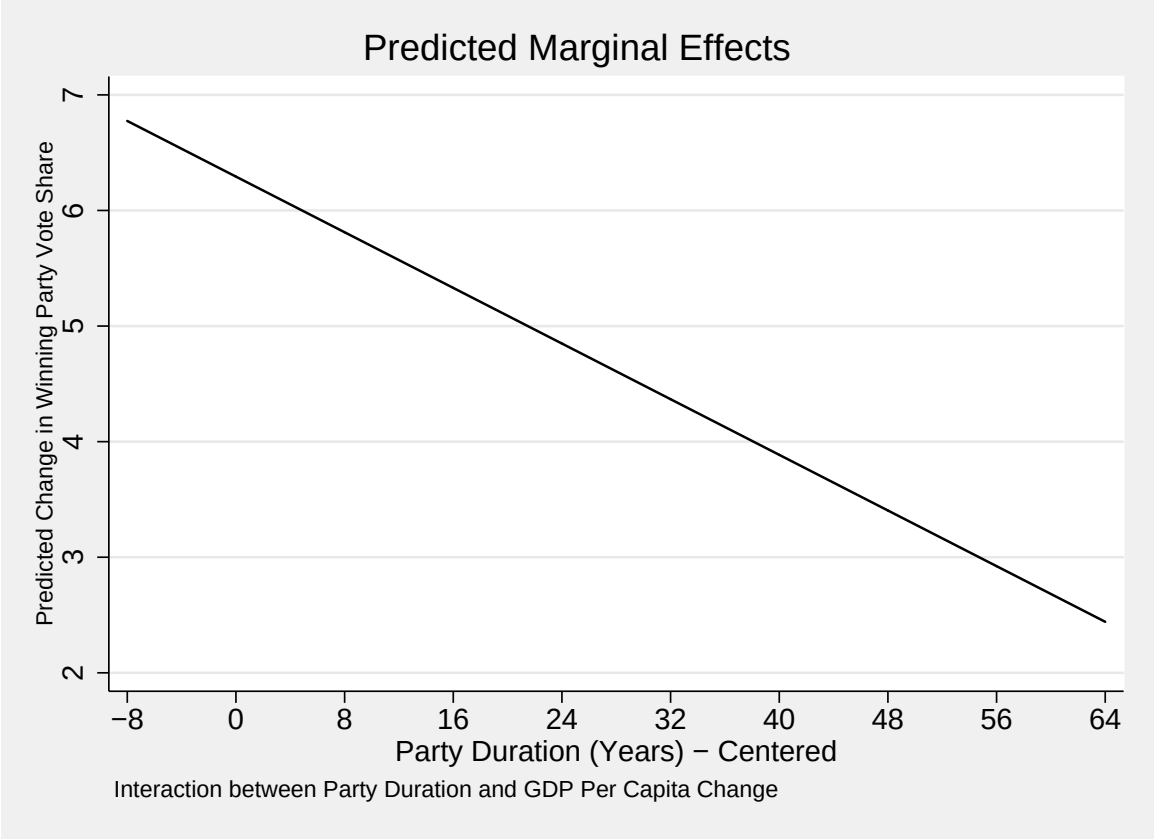

Figure 4.5: Predicted Marginal Effects - Full Sample.

The plot depicts a negative relationship between party duration and the change in vote share obtained by the winning party. A party which faces an election a year after gaining control of the legislature is predicted to observe a change in vote share around seven percent, holding all other variables at their mean values. This change begins to decrease over time, reaching its minimum change, around two and a half percent, when party duration reaches seventy-six years.

In this section, I have examined two proposed mechanisms by which the vote share obtained by the winning party can affect the likelihood of incumbent party loss.

[13]The plot with the 95% confidence intervals and the corresponding plots for the sample of cases where party duration was less than fifty-five years can be found in the Appendix as Figures B15, B16, and B17.

Hypothesis 3 proposed that incumbent parties become less likely to lose elections as party duration increases by obtaining a greater vote share, while Hypothesis 3a proposed that incumbent parties become less likely to lose subsequent elections as party duration increases by better maintaining their vote shares. Like the analysis of the effects of party duration on the change in seat share, these results presented suggest that as party duration increases, the decreased likelihood of incumbent party loss does not arise from the former mechanism, but by the latter mechanism.

4.3 Conclusion

For scholars interested in studying the outcome of elections, party duration is an important variable to consider. In this chapter, I have argued that the length of time that an incumbent party controls the legislature has an impact on elections.

First, not only does party duration affect the outcome of elections, but, consistent with Hypothesis 1, the analysis of the effects of party duration on the likelihood of incumbent party loss presented in Section 2.1 and specifically, Figure 4.1 showed that increasing party duration decreases the hazard rate - the chance that an incumbent party will lose an election given it has survived to that point. The longer an incumbent party controls the legislature, the lower the likelihood that party will lose an election, holding all variables constant. This holds across the full range of values for party duration.

Second, I proposed four mechanisms by which party duration can lead to a decreased likelihood of incumbent party loss. Analysis of both the seat share and the vote share obtained by the winning party showed that increasing party duration does not have a noticeable effect on either of these variables. Incumbent parties do not decrease the likelihood of losing an election by winning more seats or by obtaining more votes as party duration increases. Instead, this change can be better explained by examining the ability of incumbent parties to better maintain their seat shares

and vote shares as party duration increases. The analysis presented in Figures 4.3 and 4.5 showed that as party duration increases, the predicted change in both seat share and vote share decreased. While increasing party duration does not lead to greater seat shares or vote shares for the winning party, incumbent parties decrease the likelihood of losing an election by better maintaining the support they already possess from the previous election.

However, the analysis presented here only tells part of the story. In the next two chapters, I will discuss and examine how party duration affects not only the outcome of elections, but also how it affects the effect of other variables which influence election outcomes. Specifically, I will focus on the interaction between party duration and the state of the economy.

CHAPTER 5
THE LINK BETWEEN PARTY DURATION AND ECONOMIC VOTING

5.1 Introduction

In the previous chapters, I briefly touched on some of the other variables scholars have theorized have an influence over the outcome of elections. Any cross-national theory about the effects of party duration on election outcomes must not only examine whether party duration affects elections cross-nationally, but it must also take into account the other theories of election outcomes that have been widely studied by political scientists. After all, if party duration was the only factor that influenced the outcome of elections, incumbents would be expected to never lose an election – the evidence presented in the previous chapter demonstrates that as the length of party duration increases, incumbent parties should expect the likelihood of losing an election to decrease, leading to an increase in party duration, which leads to an even lower likelihood of incumbent party loss.

However, party duration is not the only variable that impacts outcome of elections. There are numerous theories regarding various factors which have an influence election outcomes. Rather than attempting to incorporate various different theories and independent variables, I choose to develop a more parsimonious model and only focused on two key independent variables: party duration and the state of the economy as measured by changes to the GDP per capita[1]. For scholars who study elections, one of the strongest factors which influence elections is the state of the economy - when the economy is doing poorly, the incumbent is punished; when the economy is doing well, the incumbent is rewarded. Furthermore, scholars have studied the effects of economic conditions on elections both cross-nationally, and under

[1]The advantages of this measure were previously discussed in Chapter 2.

a variety of circumstances. Having shown that increasing party duration decreases the likelihood of incumbents losing elections, I now turn to bridge the study of the incumbent advantage and economic voter theory.

Returning to Figure 1.1, the crux of this chapter primarily focuses on two of the arrows: Arrow B (the effect of economic conditions on election outcomes) and Arrow C (the effect of party duration on the effect of economic conditions on election outcomes) depicted in Figure 4.1.

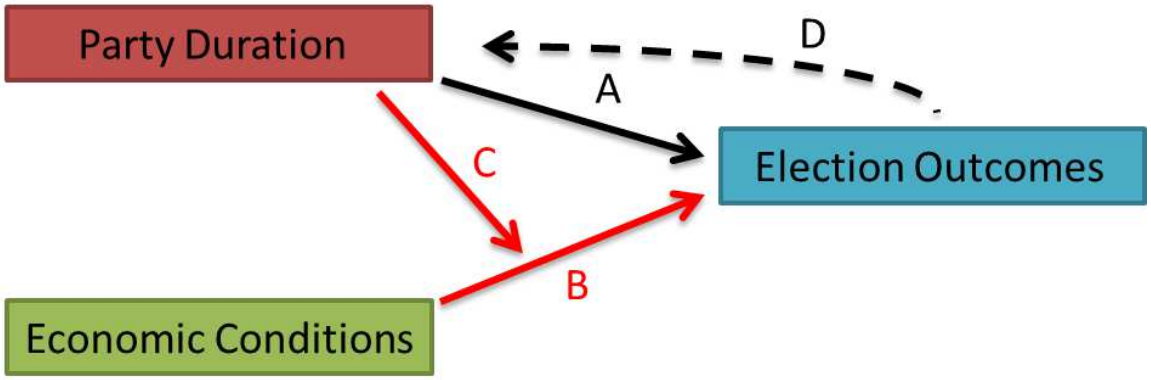

Figure 5.1: Proposed relationships between key variables.

The rest of this chapter that follows presents my review of nearly seventy years of scholarly work on economic voter theory and my theoretical foundations. I begin by discussing some of the earliest scholars of economic voter theory before discussing a handful of cases which suggest that party duration may impact the effect of economic voting. I then review the debate on retrospective and prospective voting, egotropic versus sociotropic voting, and the political business cycle, considerations which were crucial in constructing my analysis. Finally, I close the chapter by presenting the two hypotheses which I have developed which are empirically examined in Chapter 6.

5.2 Theoretical Framework

5.2.1 Economic Voter Theory

Economic voter theory is built around an idea known as the reward-punishment hypothesis, also known as the responsibility hypothesis; the idea that voters will hold their government leaders accountable for economic events. When economic conditions are strong, voters reward the incumbents, but when economic conditions are weak, incumbents are punished during elections (Lewis-Beck and Stegmaier, 2007). The foundations of economic voter theory were established through early works by Bean (1948), Downs (1957), Key (1964*b*), and Key and Cummings (1966). Bean (1948) was one of the earliest scholars to identify an empirical relationship between economic conditions and election outcomes. Examining presidential elections from 1828 to 1944, Bean found that voters continued to support administrations in power during prosperous times while voting against them when elections occurred during periods of economic depression. Key (1964*b*) and Key and Cummings (1966) similarly argued that the electorate evaluated the past actions and performance of the incumbent on economic conditions and that prosperous economic conditions increased the likelihood of reelection, while periods of economic decline were likely to result in electoral victory for the challenger. However, Key also noted that other factors, such as foreign policy, could reduce the effect of economic conditions on electoral outcomes.

The relationship between economic conditions and elections were not found to be restricted to only the U.S. Using survey data, Durant (1965) found a strong correlation between approval of the government in Great Britain and the state of the economy as measured by unemployment. Scholars have also attributed political fluctuations in the early nineteenth century to the rising cost of grain and other economic factors (Nossiter, 1974). Studying the origins of the French Revolution, Doyle (1980) argued that the French Revolution emerged out of poor economic conditions,

specifically bad harvests, increasing prices, falling wages, and rising unemployment.

While many of the earliest studies simply looked at correlations or anecdotal evidence to support the claim of a relationship between economic conditions and support of the government, the 1970s saw a shift towards the use of multivariate models to examine the relationship. One of the earliest to utilize more complex models to examine the relationship between economic conditions and vote choice was Kramer (1971). Kramer studied how vote shares in the U.S. House of Representatives between 1896 and 1964 fluctuated in response to economic conditions. Framed within a model of rational behavior, Kramer found that increases in real income helped incumbent parties while economic decline helped the opposition.

Several scholars continued to structure their studies of the effects of economic conditions on election outcomes through the rational choice framework. Examining changes in vote share from 1986 to 1970 in the U.S. House of Representatives, Bloom and Price (1975) found that economic conditions had an asymmetric effect on electoral fortunes. They argued that incumbents were punished during periods of economic turmoil, but did not receive equal rewards during economic prosperity. Similarly, Nannestad and Paldam (1997) found that the punishment for a decline in the economy was three times larger than the rewards for a similar improvement. These findings were in line with early work by Campbell et al. (1966) who argued that incumbent parties are more likely punished by voters for their mistakes than they are to be rewarded for their successes.

Other scholars also found evidence that changes in various economic indicators such as inflation (Goodman and Kramer, 1975; Holbrook and Garand, 1996; Whitten and Palmer, 1999), measures of income (Goodman and Kramer, 1975; Fiorina, 1978; Erikson, 1989; Pacek and Radcliff, 1995), business conditions (Nadeau and Lewis-Beck, 2001) changes in GNP (Abramowitz, 1996; Lewis-Beck and Tien, 1996), and unemployment (Holbrook and Garand, 1996; Whitten and Palmer, 1999) have an

effect on electoral outcomes. It has also been found that the effects of economic voting can be observed both during presidential and midterm elections in the U.S. (Jacobson, 1990).

These and numerous other scholars of economic voter theory established that incumbents are more likely to be reelected when the economy is doing well and less likely to win reelection when the economy is doing poorly. However, similar to scholars of the incumbent advantage, the majority of studies focused solely on the effects of the economy on incumbents, treating all incumbents, whether incumbent candidates or incumbent parties, equally. Do the effects of economic conditions on election outcomes vary as the length of party duration changes? While there has not been a detailed analysis of the impact of party duration on the effect of economic voting, evidence from specific cases suggests that incumbent parties with long tenures may be able to insulate themselves from economic changes.

For instance, the Swedish Social Democrats (SAP) fell from power and were replaced by the Bourgeois Bloc in 1976. Their subsequent return to power in 1983 highlights an important economic advantage incumbent parties possess: their past performance. The SAP rose to prominence during the depression of the 1930s and built their platform on unemployment insurance, employment programs, and agricultural relief. After over forty years in power, growing economic turmoil culminated in the SAP's loss during the 1976 election. However, when the Bourgeois Bloc failed to improve economic conditions, the SAP was able to return to power soon after because "its capacity to manage the economic difficulties was more credible, not because the party had anything new to offer" (Esping-Andersen, 1990). While the SAP's collapse was due to declining economic conditions, they were able to use their past economic performance to sway voters.

While the SAP was initially removed from power, it has also been noted that entrenched incumbent parties have been able to use their past economic successes

to remain in power during periods of economic turmoil. Japan's Liberal Democratic Party (LDP) came to power during the economic turmoil of the post-war reconstruction in Japan. Under their leadership, Japan's economy was able to recover and sustain remarkable economic growth which was crucial in establishing the LDP as the dominant party in Japan. However, Japan's economy was also affected by the international financial crisis that occurred during the 1970s. Relying on survey data, Inoguchi (1990) argued that the LDP was able to maintain what he calls, "a monopoly of public confidence" over the economy. The electorate viewed them as the only party who could stabilize the economy, and the LDP's policies resulted in GNP growth, inflation being curtailed, and lower unemployment levels compared to many other comparable countries.

In Italy, the Christian Democratic party (DC) similarly was able to survive the economic crisis thanks to their economic policies. The DC had established itself through its economic policies, and the electorate associated the country's economic growth with the DC. Economic growth reinforced the party over time, and was associated with the party during the 1970s (Pempel, 1990).

However, incumbent parties with long tenures are not always able to sway voters and avoid the repercussions of declining economic conditions. In India, the National Congress Party's long tenure as the incumbent collapsed in 1977 as a result of sudden and unexpected economic shocks. Crop failure in 1973 and increasing inflation from 1974 to 1975 affected the lower-middle class and poorest citizens. These declining economic conditions, coupled with unpopular legislation, gave the opposition parties the impetus to mobilize the electorate against the National Congress Party (Mendelsohn, 1978). Increased energy consumption and costs as well as growing military expenditures were crucial factors that caused Israel's Mapai party to fall from power during the 1970s. Shalev (1990) argued that the Mapai party, which had risen to power through their economic policies, was seen as having less control over

economic growth and capital, resulting in their electoral failure.

Does the length of party duration have an impact on the effect of economic conditions on election outcomes? The initial evidence does not definitively answer this question with certainty, one way or the other. This is one of the central questions I look to answer in this project. Determining whether party duration can change the effect of another variable which influences elections is a crucial step to better understanding the effects of party duration.

5.2.2 Retrospective and Prospective Evaluations

As the relationship between economic conditions and elections was established, scholars began to examine how economic factors entered into the voting calculus. One of the major questions that scholars looked to tackle was whether voters' evaluations of the economy were retrospective or prospective. Scholars like Bean (1948), Key (1964*b*), and Key and Cummings (1966) established the role of the economy on electoral outcomes was retrospective. In this view, voters evaluate the current and past economic conditions when deciding whether to support the incumbent or challenger. If voters believe that the state of the economy has improved, they are likely to support the incumbent. If, on the other hand, they believe that economic conditions have deteriorated under the incumbent government, they are likely to support a challenger. In 1971, Kramer focused on the idea that economic voting is retrospective and incumbent oriented (Kramer, 1971). Other scholars who examined retrospective voting found that the voters relied more heavily on the recent economic history than long-run history (Kietiet, 1983; Rosenstone and Behr, 1984; Markus, 1988). Studying presidential elections from 1916 to 1976, Fair (1978) found that per capita change in the second quarter of an election year best predicted the presidential vote and that voters only look back, at most, two years to evaluate the economic performance of an administration. It has also been argued that countries that exhibit retrospective

voting employ different economic policies than countries where retrospective voting is less common. Focusing on industrial democracies, Kiewiet (2000) found that countries that had high clarity of responsibility and thus engaged in retrospective voting had less economic regulation and lower levels of transfers and subsidies.

Using survey data, Holbrook and Garand (1996) were able to examine voters' perceptions of the state of the economy and its relationship to retrospective voting. They found that it is not the actual state of the economy, but how a voter perceives changes to the economy that best predict presidential vote choice. Alvarez and Nagler (1995) found that voters who evaluated a negative change in the national economy in the previous year were much less likely to vote for the incumbent Bush than they were for Clinton. Similarly, when Clinton was president in 1996, he lost support from those who felt the national economy had grown worse while gaining the majority of support from voters who believed it had improved, regardless of the actual economic change (Alvarez and Nagler, 1998).

Scholars who have studied retrospective outside the U.S. context have also found similar results. Evidence that voters engage in retrospective voting has been found in West Germany (Lohmann, Brady and Rivers, 1997), European Parliament elections (Kousser, 2004), and even developing democracies such as Zambia (Posner and Simon, 2002). One of the most comprehensive cross-national studies was conducted by Wilkin, Haller and Norpoth (1997) who looked at thirty-eight countries that hold competitive elections to examine whether retrospective voting holds across a wide variety of political systems. They found evidence that regardless of the electoral system, voters do hold the incumbent government responsible for economic changes in the previous year. Furthermore, in multiparty systems where coalitions constitute the government, the major party in the coalition receives a disproportionate amount of responsibility for the performance of the economy. Looking at the relationship from the other side, Wlezien, Franklin and Twiggs (1997) considered if

voters' perceptions of the economy were influenced by their vote choice. Using structural equation modeling they found that retrospective evaluations of the economy are not influenced by vote choice, but by unemployment, inflation, personal finances, and job prospects. However, they also found that vote choice affected prospective evaluations of the economy.

Not all scholars of economic voter theory were convinced that voters were retrospective in their evaluations of the incumbents. Scholars like Downs (1957) suggested that the voters looked to the future and economic impact on voting came from prospective evaluations. This approach suggested that voters compare expected future performance and select the candidate or party they believe will best govern during the next term. Similarly, Achen (1992) discounted the past, arguing that the future is the only thing that matters to the rational voter. Achen held that voters use the available information to develop expectations of candidate performance. Voters choose their voting strategy based on their beliefs regarding which candidate or party will maximize their future returns. Scholars who have empirically studied elections have found evidence of prospective voting during the elections in 1984 (Lewis-Beck, 1988) and 1988 (Lanoue, 1994).

The Gallup Poll's ratings of presidential approval from 1957 to 1980 were used by Chappell Jr and Keech (1985) to examine whether voters are sophisticated when evaluating the economy. They claimed that retrospective theories of economic voting requires that voters are naïve and simply look at current economic conditions and make a decision based on whether they are satisfied or not. However, Chappell and Keech found evidence that voters are sophisticated and are concerned with the future output of current choices. While they did not rule out that voters can be backwards looking, they stressed that voters are not simply manipulated by economic policies that produce immediate returns at the cost of long term losses. Minford and Peel (1982) also argued that voters decide which party or candidate to vote for based

on expectations about which will provide the greatest utility until the next election. Minford and Peel modeled this decision based on expected income and inflation. Using quarterly data in the U.K. from 1959 to 1975 to study popularity of the party in government and the major opposition, they found evidence that popularity is affected by expected changes in disposable income and inflation.

Using the Index of Consumer Sentiment to study changes in presidential approval, MacKuen, Erikson and Stimson (1992) and MacKuen, Erikson and Stimson (1996) also argued that voters are prospective. They claimed that rational voters build expectations and forecasts about the future, and that presidential popularity is affected more by the possibility of improved economic conditions than current economic success. Furthermore, by controlling for the past Mackuen, Erikson and Stimson emphasized that expectations of the economy do not need to be derived from current or past economic conditions.

However, while there are scholars on both sides of the debate, numerous scholars have found merit in both theories and have concluded that together, the two sides produce a more complete understanding of the role of economic evaluations. Although Fiorina (1981) argued that the electorate used elections as "referenda on the incumbent administration's handling of the economy," and many have cited his work as one of the cornerstones retrospective evaluations of the economy, he also found that voters considered which party would better handle economic problems when studying the 1976 presidential election. Similarly, when Downs (1957) originally formulated his theories on prospective voting, he still acknowledged that the past played a crucial role in the decisions of voters. Downs stated that the incumbent's current performance is the best predictor of future performance. Similar to Downs, Norpoth (2004) stated, "if you want to make a prospective judgment, rely on retrospection."

Focusing on the union of these two theories highlights some of the major weaknesses of the two individual theories. If voters are purely retrospective, then the full

weight of economic voting solely on the incumbent with no role for the challenger. Scholars such as Hibbs Jr, Rivers and Vasilatos (1982) claimed that voters retrospectively compare the current performance of the incumbent to the previous performance of the challengers. However, this ignores the work of scholars who have found that voters place more weight against the short term of the incumbent (Kietiet, 1983; Rosenstone and Behr, 1984; Markus, 1988; Fair, 1978). If voters do not place emphasis on the full term of the incumbent and only look back, at most, two years, how is it that they are able to draw from beyond that to evaluate the challenger?

Conversely, theories of purely prospective voting often fail to specify where and how voters establish their beliefs about future performance. While some scholars attributed expectations of the future to past performance, a number of scholars who discount the past have offer no theoretical explanation of the origins of these expectations. For instance, in their model, Minford and Peel (1982) claimed that rational voters will select the candidate that provides the highest expected utility. One mechanism they suggest is that voters collect information from forecasts of inflation or output. However, Monroe and Peel offered no discussion of these forecasts. How are they derived and what factors influence their development? While MacKuen, Erikson and Stimson (1992) argued that voters do not need to look towards the past or the present to develop expectations for the future, they failed to establish from where voters establish their expectations. Similarly, in their study of prospective voting in Taiwan, Hsieh, Lacy and Niou (1998) asked respondents, "Which candidate or candidates would best handle the economy, law and order, ethnic relations, and straits relations?" They used this question, questions that looked at the state of the economy over the past year, and others to conclude that voters in Taiwan do not exhibit retrospective voting. But like Monroe and Peel, they presented no discussion of why voters believed one candidate or another would better handle the economy or other concerns.

Several scholars have argued that voters are prospective, in that they consider future economic performance when deciding which party or candidate to support, but also that voters retrospectively evaluate the performance of the incumbent to predict future performance. Using the Euro-Barometer surveys Lewis-Beck (1986) examined whether retrospective and prospective evaluations of the government affect support of incumbent governments in Britain, France, Germany, and Italy. He found evidence of not only retrospective voting, but also of prospective voting. While Lewis-Beck stated that "Western Europeans tend to vote against the ruling coalition when they perceive that its policies will worsen next year's economy, independent of how they perceive last year's economic performance," he went on to argue that future expectations regarding the economy are based largely on what the government has done in the previous year.

Lewis-Beck (1988) concluded that prospective collective economic evaluations are as important as retrospective collective economic evaluations and while evaluating the work on economic voting, Lewis-Beck and Stegmaier (2000) found evidence that presidential approval is affected by retrospective and prospective evaluations. Focusing on the 1980 Canadian federal elections, Uslaner (1989) found that voters behave both retrospectively and prospectively and proposed a mechanism for the two processes to work. Uslander suggested that political elites are more forward looking and use the media to communicate their views to the electorate which is more concerned with past performance.

Clarke and Stewart (1994) reexamined the data used by MacKuen, Erikson and Stimson (1992) and challenged their argument and findings that voters are purely prospective. Clarke and Stewart argued that Mackuen, Erikson and Stimson improperly accounted for the time-series dynamics of the data, leading them to draw the wrong conclusions. Furthermore, Clarke and Stewart suggested that they incorrectly claimed that their findings are backed by the rational expectations model. Rather,

Clarke and Stewart argued that Mackuen, Erikson, and Stimson claimed a relationship that is purely simple conjecture. Clarke and Stewart used an error correction model to examine both the long and short term effects of economic conditions on presidential approval from 1954 to 1992. They found that presidential approval is affected by both retrospective and prospective sociotropic economic evaluations.

5.2.3 Egotropic and Sociotropic Voting

The debate over the type of economic evaluations used by voters has not been limited to only retrospective and prospective voting. Scholars have also considered which economic conditions influence voters when deciding which party or candidate to support - whether voters look at their own finances (egotropic or pocketbook voting) or examine the state of the national economy (sociotropic voting). The conventional wisdom has argued that voters look at their own finances. One of the classic examples was Ronald Reagan's question to voters in 1980, "Are you better off than you were four years ago?" Reagan asked voters to evaluate their personal financial situation and to decide their vote based on if their finances had improved or not during the previous administration. Early works also focused on the individual voter, arguing that voters evaluated their personal conditions and decided whether their situation had improved or deteriorated under the incumbent (Bean, 1948; Key, 1964*b*; Key and Cummings, 1966). In fact, much of the early work that focused on the relationship between the government and the economy worked from the assumption that voters were chiefly concerned with their own finances (e.g. Meltzer and Richard (1981)'s study of the size of government and income redistribution).

Studying US elections from 1946 to 1978, Hibbing and Alford (1981) focused on examining how incumbent congressmen of the president's party are affected by changes in voters' personal financial conditions as measured by real disposable income. They found that voters blame and reward incumbent congressmen for changes in their

personal finances. Using survey data from 1978, Hibbing and Alford also examined the relationship between personal finances and voting at the individual level. Again, they found that voters' economic conditions have an effect on vote choice. Furthermore, they found evidence that long-term incumbents are more affected than those with only one or two terms, which, as mentioned earlier, suggests that the length of incumbency influences economic voting.

Even amongst scholars who have looked for signs of both retrospective and prospective voting have found signs of pocketbook voting. Nannestad and Paldam (1997) used quarterly surveys in Denmark to develop a dynamic model that suggested that voters are driven by their own personal financial conditions. Across their full period of study, Nannestad and Paldam found that the only two variables which produced stable results were pocketbook voting and a measure for party identification. They also found that retrospective pocketbook evaluations had a greater impact than prospective pocketbook voting. Conversely, of the measures of sociotropic voting included by Nannestad and Paldam, unemployment had the largest effect, but even that was smaller than the effect of personal finances. Elinder, Jordahl and Poutvaara (2008) also developed a model that incorporated both prospective and retrospective egotropic voting by focusing on elections in Sweden between 1985 and 2002. Their study focused on cuts to social welfare spending, specifically cuts and promises that impacted families with young children. While they only focused on two reforms, they found evidence of prospective egotropic voting.

Miller and Glass (1976) found that during the 1974 recession, voters who felt worse off financially than the year before and who negatively evaluated the administration's economic policies were more likely to vote for the democratic congressional candidate. Some scholars have contended that differences exist between voters and some are egotropic while others are sociotropic. For instance, Gomez and Wilson (2001) claimed that voters with higher levels of political sophistication are better

able to connect changes in their own finances with government policy and thus place blame on the incumbent president, whereas sociotropic voting is more ubiquitous amongst voters.

Sigelman, Sigelman and Bullock (1991) argued that it is difficult to distinguish between personal and national economic influences on vote choice when using survey data. Instead, they conducted an experiment using election vignettes where "voters" were able to select candidates based on information they provided. They found that both personal and national economic trends affected vote choice, and that presidential candidates were rewarded/punished even if the scenario stated the president was not responsible.

One of the strongest criticisms of studies of egotropic voting comes from Lau, Sears and Jessor (1990). They argued that many of the surveys used to provide evidence in favor of egotropic voting, specifically the NES, are flawed due to the structure of the survey. They argued that questions about the state of the economy and politics are asked in such proximity that the responses to the latter are contaminated by responses to the earlier questions. Using a measure for contamination, they found that question order does have an impact on responses. Furthermore, when they examined data that was not contaminated, they found that personal finances only had a minor impact on vote choice.

While several scholars have continued to champion egotropic voting, the vast majority of scholars have found evidence that voters look to national economic conditions when deciding to support the incumbent or challenger. These scholars argued that voters are predominately sociotropic. Kinder and Kiewiet (1979) is commonly attributed as one of the earliest pieces which distinguished between sociotropic and egotropic evaluations of the economy. Studying congressional elections from 1956 to 1976 and utilizing survey data, Kinder and Kiewiet found that voters' decisions during congressional elections were more shaped by changes in business conditions,

economic capabilities of the parties, and the economic performance of the government than by personal financial conditions. They argued that national economic conditions are far more important than pocketbook voting. In fact, Kinder and Kiewiet went so far as to state, "voters evidently do not make connections between their own personal economic experiences... ...and their political attitudes and preferences."

However, Kinder and Kiewiet were not the first to find evidence that national economic trends are more important to the voting calculus than personal financial conditions. In his early work, Fiorina (1978) found little evidence that voters examine their personal financial situation when deciding which candidate to support. In his pivotal study of retrospective voting, Kramer (1971) focused on the national economy. He showed that the success of the incumbent party was affected by fluctuations in the state of the national economy. However, while Kramer chose to focus on the state of the national economy, he did not make an assessment whether voters were egotropic or sociotropic. It has also been argued that changes in personal finances are affected by a wide variety of factors outside the control of the government. Events such as marriage, the birth of a child, or a family death have a far greater impact on a voters finances than anything driven by government policy (Kramer, 1983). Others have also argued that voters do not associate their own financial fortunes with government decisions and policy (Feldman, 1982; Abramowitz, Lanoue and Ramesh, 1988).

While it has been shown that voters' personal well-being is affected by economic indicators such as unemployment, those factors have been shown to not have an impact on approval of the President and Congress (Feldman, 1984). Alvarez and Nagler (1995) also found evidence of sociotropic voting in their study of the 1992 election. They argued that a voter's evaluation of their personal finances has no impact on which candidate they supported while evaluations of the national economy did produce an effect.

MacKuen, Erikson and Stimson (1992) considered the effect of four key vari-

ables: personal retrospection and expectations and business retrospection and expectations. Of the four variables, only business expectations were found to affect presidential approval. Kinder and Kiewiet (1981) sought to examine how economic concerns affected voters' political preferences. They found that national level problems affected voters' preferences, while personal economic problems had no effect during congressional elections. Furthermore, while they found that personal economic conditions had a minor influence on presidential elections, that effect was greatly exceeded by concerns over state of the national economy. Similar findings were reported by Markus (1988). Modeling vote choice across eight presidential elections, Markus found that the effect of a change in the state of the national economy is nearly four times greater than the effect of a similar change in a voter's personal finances. Conducting a cross-national study of thirteen European democracies, Anderson (2000) found that sociotropic effects are stronger than egotropic effects "both statistically and substantively." Sociotropic evaluations of the economy had an impact on elections, but their effect could be reduced by raising the level of ambiguity of responsibility in the government.

Focusing on the 1984 presidential election, Kinder, Adams and Gronke (1989) suggested that sociotropic and egotropic voting are distinct phenomena that both have an impact on the outcome of elections. While they found evidence that egotropic voting was distinct from sociotropic voting and had some effect on vote choice, it fell far shorter than the effect of evaluations of the national economy. Funk and Garcia-Monet (1997) considered the relationship between sociotropic and egotropic voting and whether a voter's evaluation of the national economy was shaped by personal factors. While they found that a voter's personal finances do have some effect on their evaluation of the national economy, the effect is not very large.

5.2.4 Political Business Cycle

Several scholars have suggested that incumbent governments can manipulate the economy before elections to increase their likelihood of reelection. This phenomenon is known as the *political business cycle*. The political business cycle is built upon three key assumptions. First, politicians are primarily concerned with winning elections. Second, voters possess stable preferences over economic outcomes. Finally, elected politicians have control over tools to influence economic outcomes (Schultz, 1995). If voters consider which party will produce the best economic conditions and look at the recent state of the economy, it is not hard to believe that incumbent governments would strive to improve economic conditions just prior to elections. Nordhaus (1975) was one of the first to formalize the political business cycle. He suggested that following an election, the incumbent government will raise unemployment to combat inflation. Over time, unemployment and inflation will begin to return to equilibrium. However, as elections approach, the government will work to lower unemployment, resulting in an increase in inflation. He concluded that the political business cycle would cause political leaders of the incumbent party to produce sub-optimal economic conditions as a result of electoral pressure.

Focusing on fourteen OECD countries over almost thirty years, Alesina, Cohen and Roubini (1993) concluded that it is possible for incumbent governments to manipulate taxation and spending. While they failed to find evidence of electoral cycles affecting GDP and unemployment, they found that as elections approached, key economic factors did appear to change. Specifically, they found evidence that elections affected monetary policy, inflation, and fiscal policy. However, they also noted that there are constraints that prohibited politicians from drastically manipulating the economy. Schultz (1995) argued that most scholars who study the political business cycle assumed that the incumbent government has the same incentive to manipulate

economic conditions during every election. He contended that such manipulations are costly, and when the incumbent government is secure before an election, the costs of economic manipulation do not outweigh the gains. Therefore, the incentives are not equal and actually show significant variation. Studying Great Britain from 1961 to 1992, he found that politically motivated economic manipulation does occur when political security is low.

However, several competing scholars have contended that the political business cycle does not exist and that political leaders lack the means to manipulate economic conditions when necessary to produce electoral gains. Studying U.S. presidential elections, Golden and Poterba (1980) failed to find evidence supporting the political business cycle. Looking at both fiscal and monetary policy, Golden and Poterba failed to find support that the electoral cycle impacts economic conditions. Similarly, focusing on the Federal Reserve, Beck (1982) and Beck (1987) failed to find evidence that the Federal Reserve manipulated monetary supply to aid incumbent presidents. In fact, Beck went so far as to argue that the president does not have the power to force the Federal Reserve to work towards reelection.

Ito and Park (1988) and Ito (1990) focused on Japan's parliamentary system to examine whether political leaders were able to manipulate economic conditions to coincide with elections. They proposed two hypotheses to explain the timing of elections. The first was that the incumbent party manipulates economic conditions to coincide with the timing of election. The second stated that the incumbent party is opportunistic and uses periods of favorable economic conditions to determine when to call for elections. Studying a period of twelve elections from 1955, they only found evidence to support the opportunistic hypothesis. Scholars have also failed to find evidence supporting the political business cycle when studying U.S. GNP growth and unemployment (Alesina, 1988).

5.3 Hypotheses

The rich literature on economic voter theory definitively states that economic turmoil unseats incumbents. However, the cases of the SAP, LDP, and DC mentioned above suggest that increasing party duration, that is, extending the tenure of incumbent parties, may insulate incumbent parties from the electoral repercussions of negative economic changes. Put simply, long-term incumbent parties may be able to avoid losing elections during periods of economic turmoil better than their more recently elected counterparts. This theory frames the effects of the economy on elections from a new perspective, providing a new spin on economic voter theory. Given this, I have developed two hypotheses to test the effect of the length of party duration on economic voting.

Hypothesis 4 As party duration increases, incumbent parties will experience a decreased hazard rate during periods of economic turmoil.

Hypothesis 5 Economic conditions must decline by a greater value to unseat incumbent parties as party duration increases.

5.4 Conclusion

While the previous chapter showed that increasing party duration decreases the likelihood the incumbent party loses an election, that variable alone cannot fully explain the outcome of elections. In this chapter, I have reviewed the literature on economic voting, one of the major theories for political scientists interested in studying the outcome of elections.

I began this chapter by providing a general overview of Economic Voter Theory and the ways in which the electorate responds to changing economic conditions, both positive and negative. I then discussed both retrospective and prospective evaluations of the economy as well as the scholars who have argued that both theories work to explain economic voting. I evaluated the debate over egotropic and sociotropic voting

before turning to the role of the government in influencing economic conditions.

In the preceding section, I closed this chapter by presenting the two hypotheses I have developed to test the relationship between party duration and economic conditions on the outcome of elections. In the following chapter, I will present the empirical analysis used to test this proposed relationship.

CHAPTER 6
EMPIRICAL ANALYSIS OF PARTY DURATION AND ECONOMIC VOTING

6.1 Introduction

In Chapter 5, I reviewed the literature on economic voter theory. I used this literature to establish that economic conditions affect the outcome of elections (incumbents perform better during periods of economic prosperity while they suffer during periods of economic turmoil). However, I then discussed specific cases which suggested that the effect of the economy on elections might behave differently as party duration increases. At the end of the chapter, I presented my two hypotheses related to the relationship between the outcome of elections, party duration, and the economy.

In this chapter, I present the corresponding empirical analysis. In this chapter, I will present evidence that while the state of the economy is still a strong predictor of the outcome of elections, increasing the length of time that a party controls the legislature affects this effect. This chapter builds on and takes a more detailed look at the analysis presented in Chapter 4.

6.2 Empirical Analysis

6.2.1 Election Outcomes, Party Duration, and the Economy

Hypothesis 4 As party duration increases, incumbent parties will experience a decreased hazard rate during periods of economic turmoil the longer they have remained in power.

Hypothesis 5 Economic conditions must decline by a greater value to unseat incumbent parties as party duration increases.

The two hypotheses regarding the relationship between the outcome of elec-

tions and party duration and economic conditions go hand in hand . As described in Chapter 2, the economic data used in this project is taken from the Maddison Project (Angus, 2003; Maddison, 2007). Using the Maddison project's GDP per capita data, I created a measure of the annual change as a fraction of the previous year's GDP per capita. This variable was created by taking the current GDP per capita and dividing it by the GDP per capita from the previous year. Values greater than one indicate that a country's economic conditions improved as the GDP per capita increased from the previous year, while values less than one indicate that the GDP per capita decreased, indicative of declining economic conditions.

For the analysis presented here, the economic variable was lagged one year. This was done for a number of reasons. First, lagging the economic variables captures the retrospective voting element discussed in the previous chapter. Second, measures of GDP are typically calculated at the end of the year. Using lagged economic variables ensures that economic conditions before an election occurred are taken into account. Finally, using a lagged independent variable helps to eliminate concerns regarding endogeneity – economic conditions in year t cannot be influenced by the outcome of an election in year $t + 1$.

To test Hypothesis 4 and 5, I return to an analysis of the hazard rate presented in the previous chapter, examining how it changes in relation to both the length of party duration and economic conditions. Whereas the previous chapter focused on the effect of party duration on the outcome of elections, this chapter instead focuses on the effect of economic conditions on elections and how this effect changes in response to changes in party duration.

The preliminary multivariate models shown in Chapter 2 provided initial evidence that the effect of the state of the economy was conditioned by the length of party duration. However, as discussed in the previous chapter, those results failed to control for additional variables and did not take into account the cross-sectional

time-series nature of the data (election outcomes are correlated with other election outcomes in the same country)[1]. Table 6.2 presents the results of the analysis of the effects of party duration and the state of the economy, as measured by the GDP change as a fraction of the previous year's GDP per capita, on the likelihood of incumbent party loss, with the inclusion of the control variables and accounting for the cross-sectional and temporal dynamics of the data[2].

[1]For a detailed discussion of the methods employed, see the Mathematical Appendix.

[2]These are the same model results presented in Table 4.1

Table 6.1: Multivariate Logit Results for the Likelihood of Incumbent Party Loss

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	-0.046	-0.031
	(0.031)	(0.041)
GDP Per Capita Change (Centered)	-4.165 ***	-4.176 ***
	(1.374)	(1.377)
Party Duration * GDP Change	-0.280 **	-0.281 **
	(0.130)	(0.137)
Parliamentary	0.290	0.299
	(0.221)	(0.222)
Presidential	0.126	0.125
	(0.201)	(0.201)
Bicameral Legislature	-0.595 ***	-0.604 ***
	(0.166)	(0.166)
Plurality/Majoritarian	0.969 **	0.940 **
	(0.444)	(0.444)
Proportional Representation	0.745 *	0.717 *
	(0.409)	(0.409)
Single Member Constituency (SMC)	0.173	0.192
	(0.649)	(0.649)
Multi-Member Constituency (MMC)	0.296	0.314
	(0.634)	(0.634)
Nation-Wide Constituency/National List (NL)	0.059	0.074
	(0.760)	(0.761)
SMC + MMC	0.385	0.383
	(0.629)	(0.629)
SMC + NL	0.119	0.136
	(0.693)	(0.692)
MMC + NL	0.317	0.305
	(0.632)	(0.633)
Majority	-0.589 ***	-0.587 ***
	(0.160)	(0.160)
Time^2	0.000	0.001
	(0.001)	(0.002)
Time^3	0.000	0.000
	(0.000)	(0.000)
Constant	-1.166	-1.058
	(0.827)	(0.835)
Observations	1,061	1,053

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Column 1 of Table 6.1 shows the full calculated model for the entire sample while column 2 presents the sample minus the single outlier case. As mentioned previously, the coefficient on party duration is negative, but not statistically significant

in either model at traditionally accepted values. Conversely, the calculated effect of the centered variable for the GDP change is both negative and statistically significant in both models, as is the interaction between the two key variables of interest[3]. However, as mentioned in Chapter 4, interpretation of the calculated coefficients is complicated by the presence of the interaction term. Interpreting the effects of both party duration and the GDP per capita fraction change is not a simple matter of looking at coefficients and statistical significance. Rather, understanding the effect of these two variables requires plotting their effects.

Figure 6.1 presents the plot of the change in the predicted likelihood of incumbent party loss at different levels of GDP per capita fraction change across party duration for all values of party duration on the left and the corresponding plot at different levels of party duration across GDP per capita fraction change while Figure 6.2 presents the plots for all cases where party duration is less than fifty-five years[4]. There are several important things to note in these plots.

First, focusing on the left plots and the points where party duration is held

[3]It is important to note that the negative coefficient on the interaction term and the fact that the centered GDP per capita change can take on negative values mean that at specific values, the calculated effect of party duration (Given as (-0.046) + (-0.280)*GDP Change in the full model) becomes positive – increasing party duration is predicted to increase the likelihood of incumbent party loss. However, the negative values the GDP change variable can take on fall between -1 and 0 and it is only when GDP change is less than -0.164 that the calculated effect becomes positive. In the dataset of over 36,000 observations, there are only 189 which fall below that value. Therefore, it is only in the most extreme cases of economic turmoil where increasing party duration has a positive effect on the likelihood of incumbent party loss (and in those cases, it is plausible that the government which has been in power for so long receives all the blame for the state of the economy).

[4]Individual plots with 95% confidence intervals can be found in the Appendix as Figures B18, B19, B20, and B21.

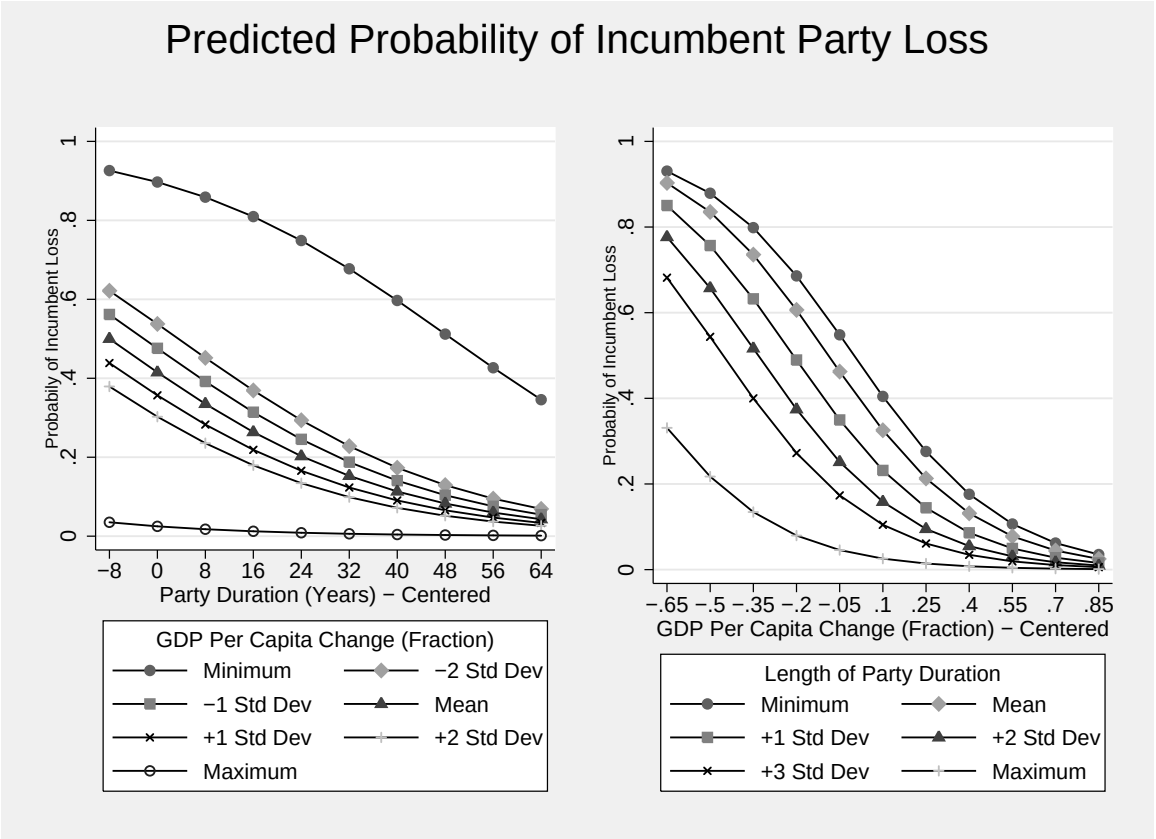

Figure 6.1: Predicted Marginal Effects - Full Sample

constant, as the change in GDP per capita becomes smaller, indicative of worse economic conditions from the previous year, the likelihood that the incumbent party loses an election rises. For instance consider the case of an incumbent party which was elected in the previous year and immediately faces reelection a year later. If the change in the GDP per capita is set to its lowest value, 0.385 from the previous year's GDP per capita, the predicted probability that the incumbent party loses the election is 0.931. However, if the change in the economy is at the average change, 1.0187 of the previous year's GDP per capita, the predicted likelihood of incumbent party loss falls to 0.499, just under 0.5. As the state of the economy improves more and more, indicated by larger values over 1.0 for the GDP per capita change, the likelihood of incumbent party loss continues to fall, reaching a low of 0.035 when the GDP change is at its maximum value, 1.87[5]. This holds across all values of party duration and in

[5]These predicted probabilities were calculated from the analysis of the full sample.

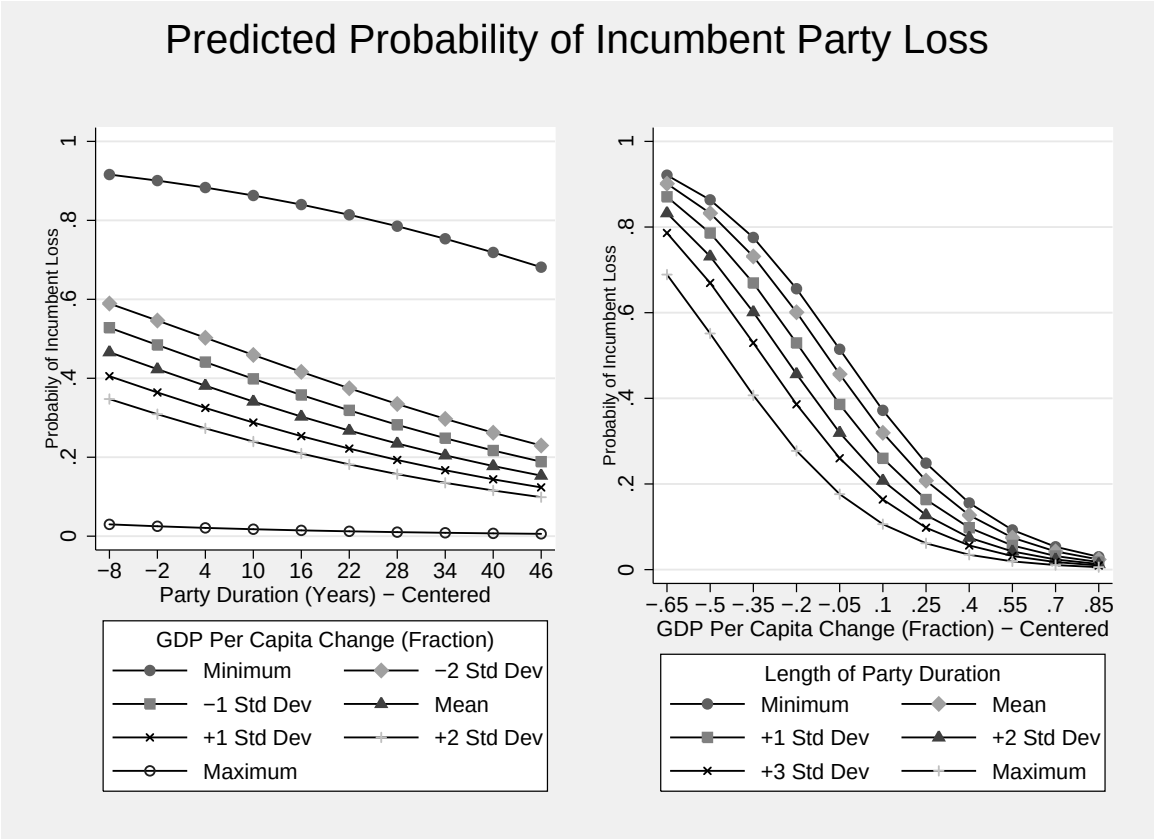

Figure 6.2: Predicted Marginal Effects - Party Duration <55 Years.

both plots.

The lines shown in the right plots in both figures present similar findings. In these plots, each line corresponds to a specific value of party duration. Moving from left to right along one of the plotted lines, corresponding to increasing the GDP per capita change, again shows that as party duration is held constant, increasing the GDP per capita change decreases the likelihood of incumbent party loss. Consider the line for the predicted likelihood of incumbent party loss when party duration is held at its mean, eight years. When the GDP per capita change is at its lowest value, the predicted likelihood of incumbent party loss is 0.903. However, as economic conditions improve, holding party duration constant, the predicted likelihood falls, reaching 0.415 when GDP change is at its mean, and falling all the way to 0.025 when it reaches its maximum value. These findings are congruent with economic voter theory – as economic conditions decline, the likelihood that the incumbents

lose rises.

Second, focusing on the individual lines in the left side plots depict the change in the effect of the state of the economy on the outcome of elections as party duration increases. What is noticeable is that increasing party duration decreases the likelihood that the incumbent party will lose an election. Looking at the plotted predicted probabilities for the GDP fraction change set to its mean values, as mentioned above, the predicted probability of incumbent party loss for a party immediately facing election is 0.499. Increasing party duration to its mean value, eight years, the likelihood of incumbent party loss, holding the change in GDP per capita at its mean value, falls to 0.415. The decline in the likelihood of incumbent party loss continues until party duration reaches its max, seventy-six years, where the likelihood falls to 0.043. This finding holds for each line in both plots, although in Figure 6.2 where the outlier case is dropped, the plotted marginal effects still have a negative slope, but are noticeably flatter. What is shocking is that in the left plot of Figure 6.1, when the fraction change in GDP per capita is set to its lowest value and party duration is set to its maximum value, the likelihood of incumbent party loss is 0.346 – even when the state of the economy is at its worst point, an incumbent party with the maximum value of party duration should not expect to lose an election. While this result does not hold when the extreme case is removed, it still illustrates the impact of party duration on the effect of economic conditions on election outcomes.

Turning again to the two right plots, examining the points where GDP per capita change is held constant, the points vertically, increasing party duration lowers the likelihood of incumbent party loss across all values of GDP per capita fraction change. For instance, according to this plot, the predicted likelihood of incumbent party loss, holding GDP change at 0.1 of the previous year's GDP per capita, begins at 0.405 for a party elected in the previous year, falls to 0.326 for a party which has remained in power for eight years, and eventually falls to 0.029 once party duration

reaches seventy six years. These findings provide support for Hypothesis 4 – increasing party duration decreases the hazard rate during periods of economic turmoil. These findings also provide evidence which supports Hypothesis 5 – that the effect of economic conditions on electoral outcomes decreases as party duration increases.

One important thing to note from all four plots, at the maximum values of both party duration and GDP per capita fraction change, the distance between the points becomes smaller. In fact, in the plots of the full sample, the lines are nearly overlapping at the maximum values of both party duration and GDP per capita change. This suggests that the effects of party duration and the economy do not have the same conditional effect when either reaches extremely high values.

Another way to consider the effect of party duration and economic conditions on the outcome of elections comes from the discussion of risk-adverse economic agents (Cukierman, Edwards and Tabellini, 1989; Ozler and Tabellini, 1991; Alesina et al., 1996) and incumbent parties which have weathered economic turmoil (Esping-Andersen, 1990; Inoguchi, 1990; Pempel, 1990). Consider the electorate as an agent interested in maximizing its utility at each election. The electorate must choose between an incumbent party whose policies it knows and a challenger whose policies are unknown. There is therefore a risk associated with replacing the incumbent party's policies with the unknown policies of the challenger. Implicit in this conceptualization is the idea that the incumbent will adhere to the same policies if reelected. Therefore, the major differences between the two options are that the electorate has no certainty regarding the policies the challenger will implement. While the challenger can make promises and discuss the policies they will implement if elected, there is no certainty whether a challenger will implement those policies or different policies until elected and what outcome the challengers policies will produce. The electorate's decision can thus be thought of as either continuing with the party and leadership it knows, or taking a chance with an uncertain challenger.

An incumbent party with a long tenure has two major advantages over recently elected incumbent parties. First, it has prior economic successes and a previous record to run on. Second, there is more certainty around a long-term incumbent party's policies and outcomes. That certainty is therefore predicted to serve as a buffer during periods of economic turmoil. In effect, party duration raises the risk threshold, conceptualized as requiring the economy to undergo a greater negative shift before the electorate will stop supporting the incumbent party and turn its support to the challenger.

To examine the effect of party duration on the risk threshold, consider the point where the predicted likelihood of incumbent party loss is equal to the likelihood that the incumbent party does not lose. Conceptually, the threshold captures the point where the likelihood of incumbent party loss reaches 50%. Based on Hypothesis 4 and Hypothesis 5, it is predicted that as party duration increases, this threshold will decrease.

Figure 6.3 presents the plot of party duration against the change as a fraction of the previous year's GDP per capita for the point where the likelihood of incumbent party loss reaches 0.5[6]. This plot shows the best fit line between the outcome of elections and party duration and the state of the economy. As party duration rises, the point to which the economy must decline for the likelihood of incumbent loss to reach 0.5 gets larger. This declining line clearly indicates that party duration affects the effect of the economy on the outcome of elections – as party duration increases, the economy must get worse for the electorate to choose to replace the incumbent party.

[6]While this plot examines the full sample, the plot which looks at the sample of only cases where party duration is less than fifty-five years can be found in the appendix under Figure B22

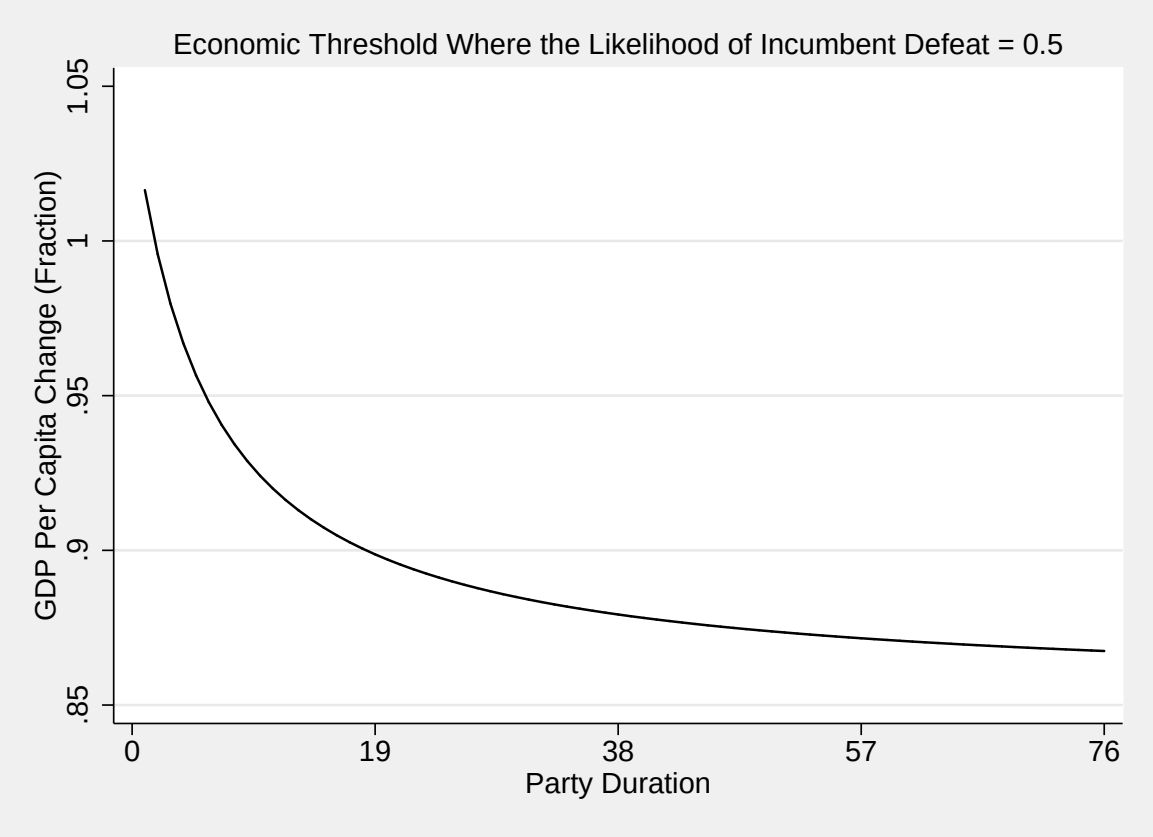

Figure 6.3: Calculated Threshold - GDP Per Capita Change (Fraction)

This plot clearly show the conditional effect that party duration has on the effect of economic conditions on the outcome of elections. A recently elected party is expected to generate economic growth from the previous year, otherwise they are likely to lose an election. However, as a party remains in power, increasing their party duration, the more forgiving the electorate becomes of economic turmoil. This effect is initially very steep, but begins to slow down. Therefore, this plots shows, although increasing incumbent party tenure works to cushion the incumbent party against economic downturns, the electorate is still not completely forgiving of poor economic performances, even for entrenched incumbent parties.

6.2.2 Seat Share, Party Duration, and the Economy

In the previous chapter, I proposed two mechanisms by which party duration can decrease the likelihood of incumbent party loss - increasing the seat and vote

share of the winning party, or reducing the rate of change of the winning party's seat and vote share. I showed, holding all variables constant, that increasing party duration did not have a substantively large effect on increasing either the winning party's seat share or vote share. However, I presented evidence which indicated that the seat share and vote share obtained by the winning party changes by smaller values as party duration increases, holding all other variables constant.

In this section, I return to the analysis of the effects of party duration on both winning party seat share and the change in seat share, this time taking a closer look at how these variables are affected by economic conditions. I begin by looking at the relationship between party duration and the economy on seat share before moving onto the effects of these two key independent variables on the change in winning party seat share. The results shown in Table 6.2 below present the full multi-variate analysis for the effects of party duration and the state of the economy as measured by the GDP change as a fraction of the previous year's GDP per capita. These results include all control variables and model the cross-sectional and temporal dynamics of the data[7].

[7]These are the same model results presented in Table 4.2

Table 6.2: Multivariate Regression Results for Predicted Winning Party Seat Share

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	0.013	0.022
	(0.030)	(0.030)
GDP Per Capita Change (Centered)	3.677	3.552
	(5.438)	(5.438)
Party Duration * GDP Change	0.605	0.584
	(0.581)	(0.597)
Parliamentary	-5.389	-5.389
	(4.235)	(4.245)
Presidential	-2.817	-2.811
	(1.966)	(1.971)
Bicameral Legislature	-0.546	-0.781
	(1.277)	(1.299)
Plurality/Majoritarian	-2.097	-2.129
	(2.648)	(2.655)
Proportional Representation	-5.314 **	-5.270 **
	(2.575)	(2.582)
Single Member Constituency (SMC)	9.507 *	9.549 *
	(5.411)	(5.424)
Multi-Member Constituency (MMC)	8.671 *	8.597 *
	(5.133)	(5.146)
Nation-Wide Constituency/National List (NL)	31.60 ***	31.50 ***
	(6.676)	(6.693)
SMC + MMC	14.53 ***	14.65 ***
	(5.192)	(5.206)
SMC + NL	13.54 **	13.43 **
	(6.566)	(6.583)
MMC + NL	4.837	4.726
	(5.195)	(5.209)
Majority	17.92 ***	17.90 ***
	(0.714)	(0.716)
Constant	39.24 ***	39.47 ***
	(6.838)	(6.856)
Observations	1,099	1,092
Number of Countries	104	104

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

While the presence of the interaction term complicates the interpretation of these results, there are several things that are noticeable. First, looking at the analysis of both the full sample and the smaller sample of cases, the calculated coefficient on party duration is positive but not significant at traditionally accepted levels in the second model. The calculated effect of GDP change is also positive, but not significant

as well.

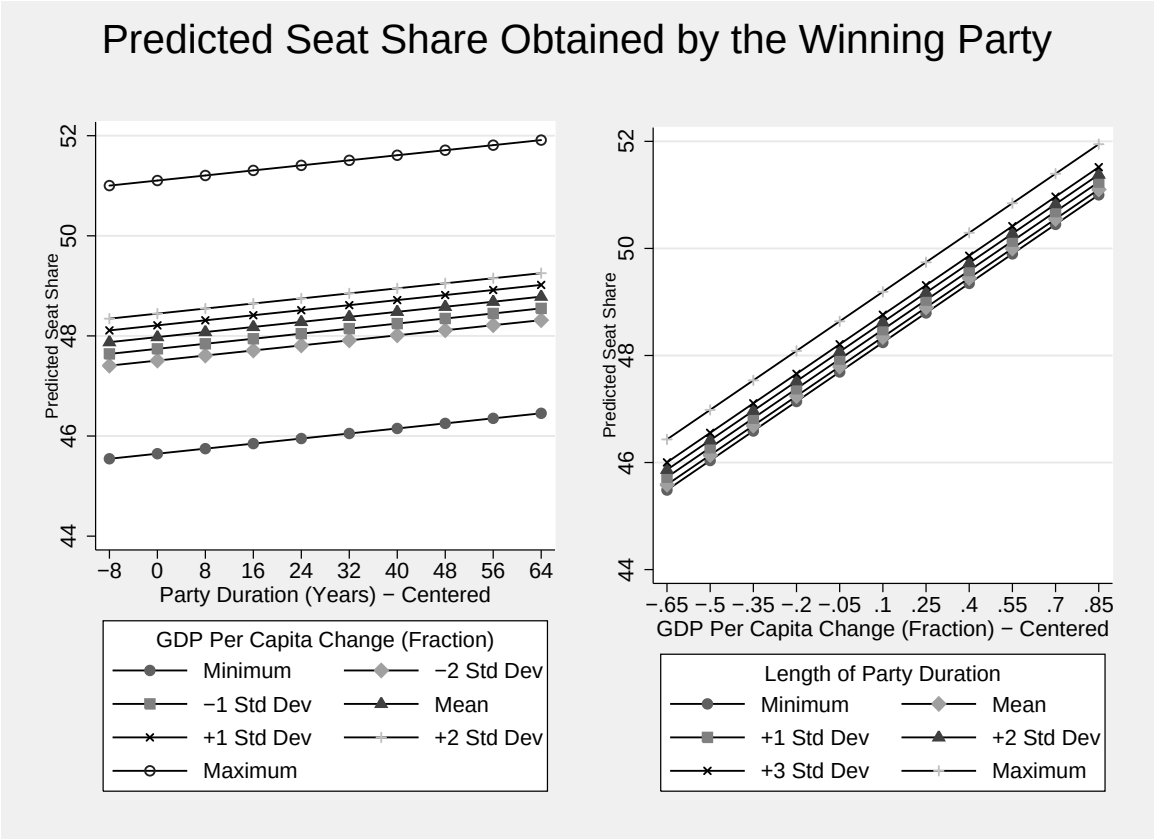

Figure 6.4: Predicted Winning Party Seat Share - Full Sample

Looking at the plots of the effects of party duration and GDP change on winning party seat share tells a similar story to the regression results presented above. All four plots, both for the full sample and for the smaller sample, show that increasing either party duration or the GDP per capita factional change while holding the other key independent variable constant leads to an increase in winning party seat share. For party duration, this holds across all values of GDP change and conversely, for GDP change, this holds across all values of party duration.

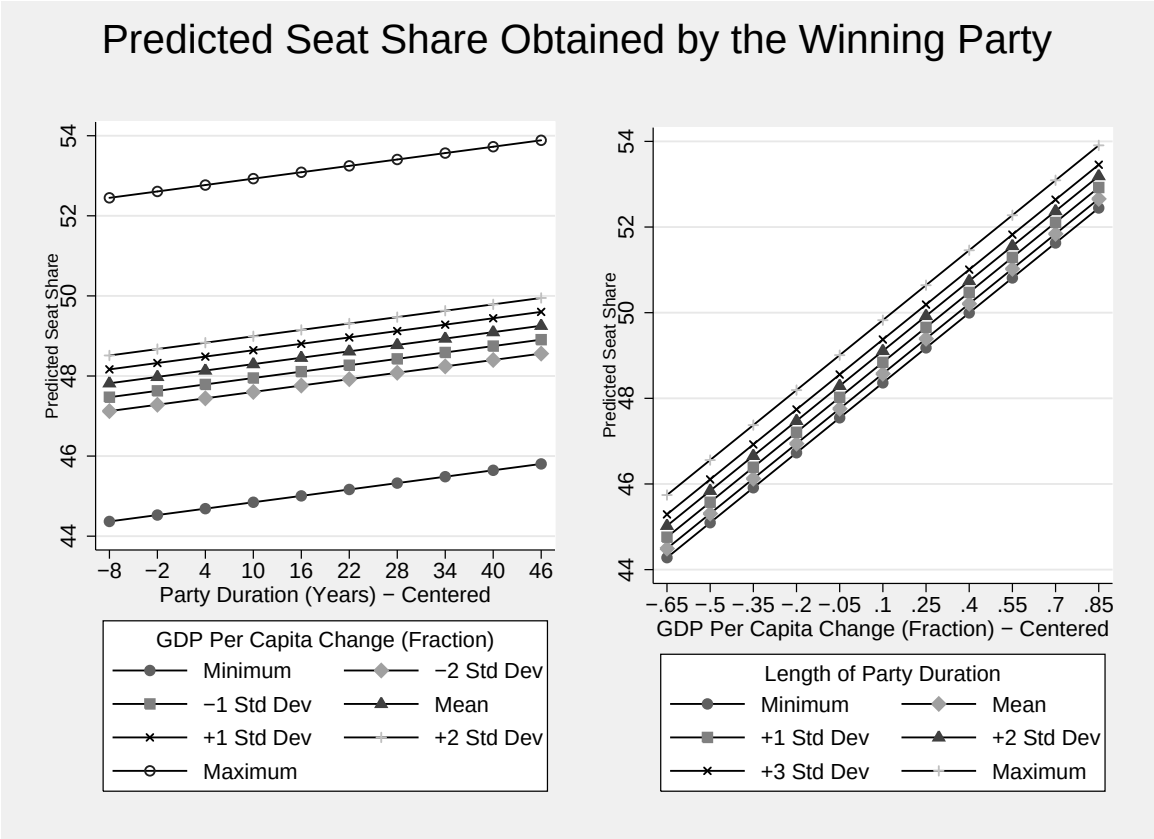

Figure 6.5: Predicted Winning Party Seat Share - Party Duration <55 Years.

Examining these results together present a clearer picture of the effects of party duration. Accounting for economic conditions, increasing party duration increases the winning party's seat share. However, while these results show that predicting the winning party's seat share without accounting for party duration leaves out a crucial variable in the calculation, it is also noticeable that the calculated effect of party duration on seat share is not very large. As party duration increases from its minimum value to its maximum, the predicted seat share obtained by the winning party only rises around one percent. Holding GDP per capita constant at its maximum value, this translates to a predicted seat share of 51.003 percent for a party facing an election in its first year in office which only rises to a predicted seat share of 51.912 for a party which has controlled the legislature for seventy-six years.

There are several conclusions which can be drawn from the results presented here. First, similar to the results discussed in Chapter 4, the analysis presented above shows that as party duration increases, incumbent parties do not become less likely to lose an election by increasing their seat share. While increasing party duration has a positive effect on the seat share obtained by the winning party, the substantive effect is not very large.

Additionally, these results show the effect that party duration has on the effect of economic conditions on election outcomes. Examining elections through the seat share the winning party receives shows that party duration conditions the effect of economic conditions. While the results presented above differ on the effect of economic conditions on winning party seat share, they show, regardless of the effect of the economy, party duration conditions this effect. Given two parties facing identical economic conditions, the party with a longer tenure controlling the legislature is predicted to receive a greater seat share, although this effect is not very large.

Next, consider the second proposed mechanism - that increasing party duration decreases the likelihood of incumbent party loss by decreasing the change in seat share from one election to the next. The results presented in Chapter 4 showed that as party duration increases, the seat share obtained by the winning party is predicted to change by smaller amounts. I now take a closer look at how this relationship is affected by economic conditions, taking a closer look at the effect of GDP per capita as a fraction of the previous year's GDP. The full multivariate results are shown in Table 6.3[8].

In both the full sample and the sample of cases where party duration is less than fifty-five years, the coefficients on both party duration and GDP per capita change are negative and significant at traditionally accepted values, as predicted.

[8]These are the same model results presented in Table 4.3

Table 6.3: Multivariate Regression Results for Predicted Change in Winning Party Seat Share

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	-0.070 **	-0.073 **
	(0.027)	(0.029)
GDP Per Capita Change (Centered)	-15.53 ***	-15.28 ***
	(5.535)	(5.575)
Party Duration * GDP Change	-0.252	-0.188
	(0.579)	(0.595)
Parliamentary	-0.874	-0.871
	(1.738)	(1.739)
Presidential	0.544	0.556
	(0.544)	(0.556)
Bicameral Legislature	-0.203	-0.162
	(1.020)	(1.032)
Plurality/Majoritarian	0.771	0.776
	(2.362)	(2.367)
Proportional Representation	0.555	0.539
	(2.276)	(2.282)
Single Member Constituency (SMC)	4.610	4.590
	(3.432)	(3.436)
Multi-Member Constituency (MMC)	2.721	2.722
	(3.189)	(3.193)
Nation-Wide Constituency/National List (NL)	2.594	2.613
	(4.434)	(4.439)
SMC + MMC	1.974	1.928
	(3.195)	(3.199)
SMC + NL	5.081	5.089
	(3.575)	(3.579)
MMC + NL	2.515	2.530
	(3.201)	(3.205)
Majority	0.015	0.027
	(0.698)	(0.701)
Constant	5.910	5.871
	(4.675)	(4.684)
Observations	1,008	1,001
Number of Countries	91	91

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

These results suggest that increasing party duration decreases the change in winning party seat share and that as economic conditions improve, the winning party experiences smaller shifts in their seat share from one election to the next. The plotted marginal effects tell a similar story as well.

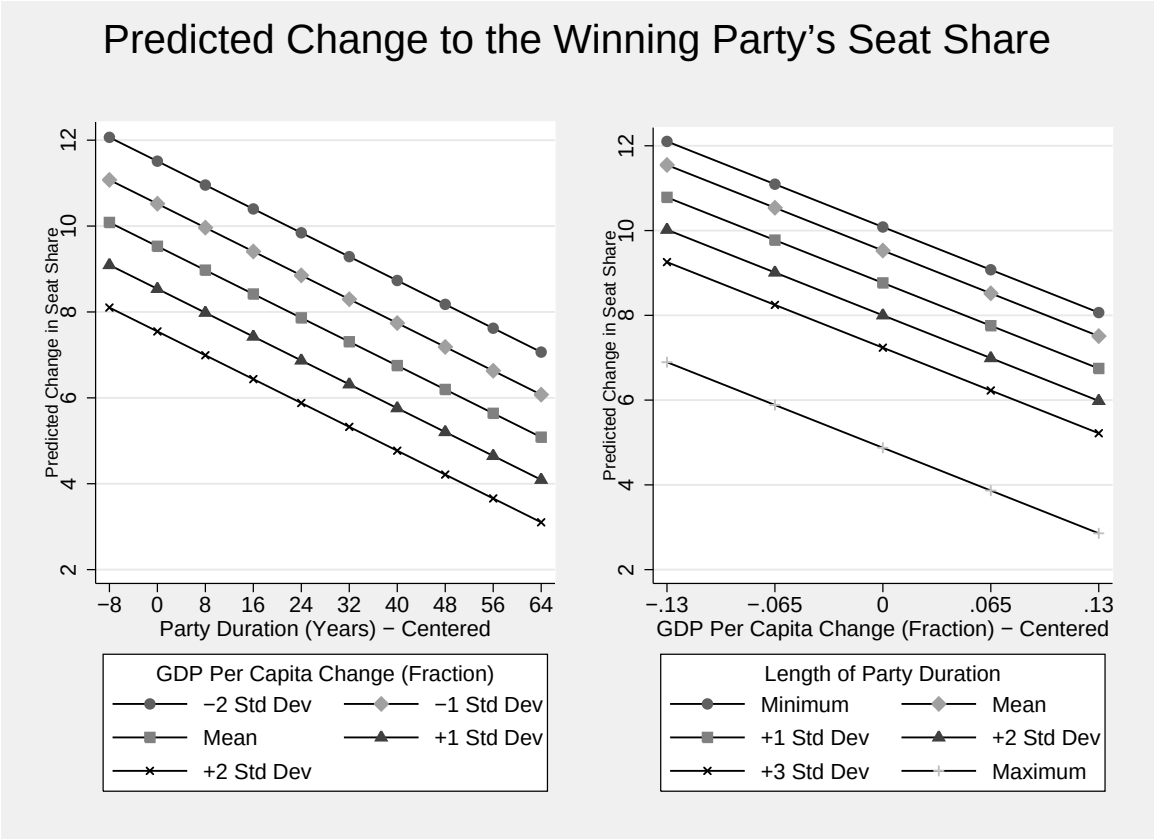

Figure 6.7: Predicted Winning Party Seat Share - Full Sample

In each of the plots, increasing party duration is shown to decrease the amount that the winning party's seat share is predicted to change from the previous election. Additionally, increasing the GDP change decreases the change in seat share from one election to the next. However, the results also show the conditional relationship between the two key independent variables of interest. Holding the GDP change constant, increasing party duration decreases the predicted change to the winning party's seat share. Focusing on only one of the key variables fails to capture the true effect they have on the change in winning party seat share. These results hold for the full sample (shown in Figure 6.7) and the sample of cases where party duration is less than fifty-five years (shown in Figure 6.8).

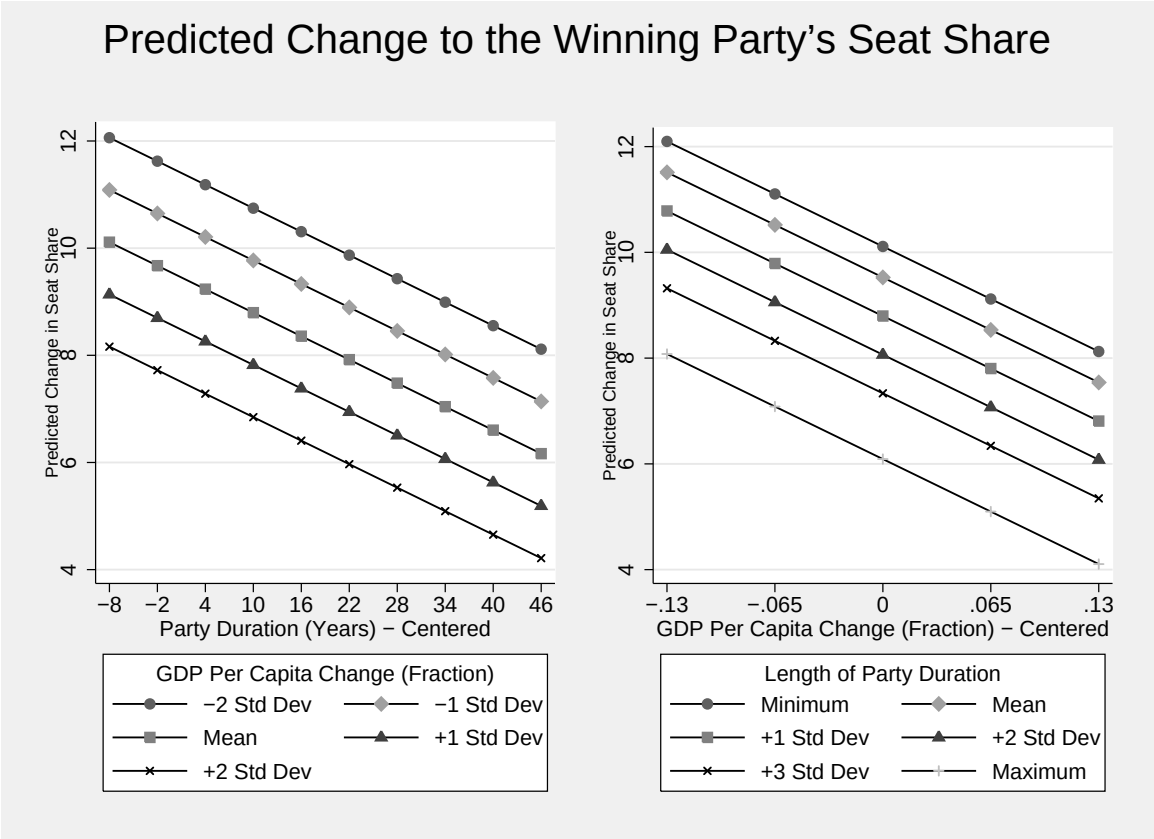

Figure 6.8: Predicted Winning Party Seat Share - Party Duration <55 Years.

The analysis presented above has shown, similar to the analysis in Chapter 4, that the decreased likelihood of incumbent party loss can be better explained by party duration's effect on change in the winning party's seat share from the previous election rather than the actual seat share won by the winning party. As party duration increases, an incumbent party is predicted to better maintain their seat share and experience a smaller shift in their seat share from the previous election. Conversely, increasing party duration is not predicted to have a large effect on the seat share obtained by the winning party from one election to the next. Additionally, the results presented here have shown that a multiplicative interaction between party duration and the economic variables best captures their effect on both seat share and the change in winning party seat share. Failing to consider this conditional relationship

only tells part of the story. These results hold for both economic measures and across both the full sample of cases and only the cases where party duration was less than fifty-five years.

6.2.3 Vote Share, Party Duration, and the Economy

Finally, turning to the relationship between party duration and vote share, the analysis presented in Chapter 4 showed that the effect of party duration on the change in winning party vote share from one election to the next better explained the effect of party duration on the likelihood of incumbent party loss than the effect of party duration on the winning party's vote share. In the following section, I will take a closer look at the relationship between party duration and the state of the economy. Examining the two vote share mechanisms, the analysis presented here again shows that the decreased likelihood of incumbent party loss which results from increasing party duration can be better explained by the change in the vote share of the winning party.

The first mechanism which I examine is the vote share obtained by the winning party. Similar to the previous sections, the models shown here were first presented in the previous chapter. However, whereas that chapter focused solely on the relationship between party duration and vote share, this chapter will examine the relationship between winning party vote share and party duration, the state of the economy, and the interaction between these key variables.

The analysis presented in the previous chapter showed that increasing party duration increased the predicted vote share obtained by the winning party in an election – a party that had controlled the lower legislative chamber for two years is predicted to receive a smaller share of the vote than a party which has controlled the legislature for ten years. However, this was not a large substantial effect. For a party with the maximum length of party duration, holding all other variables constant,

the predicted winning party vote share was only around two percent more than a party that had been elected in the previous year. In Table 6.4, the full multivariate analysis of the effects of party duration and GDP change measured as a fraction of the previous year's GDP per capita on the vote share obtained by the winning party are presented. Like the preceding analysis presented in this chapter, these results account for the cross-sectional time-series nature of the data and include the control variables[9].

[9]These are the same model results presented in Table 4.4

Table 6.4: Multivariate Regression Results for Predicted Winning Party Vote Share

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	0.029	0.037
	(0.024)	(0.025)
GDP Per Capita Change (Centered)	5.584	5.535
	(4.720)	(4.752)
Party Duration * GDP Change	0.854 *	0.844 *
	(0.490)	(0.504)
Parliamentary	-3.036	-3.031
	(3.881)	(3.890)
Presidential	-2.943 *	-2.931 *
	(1.676)	(1.680)
Bicameral Legislature	2.288 **	2.063 *
	(1.135)	(1.154)
Plurality/Majoritarian	-7.037 ***	-7.098 ***
	(2.418)	(2.424)
Proportional Representation	-7.058 ***	-7.047 ***
	(2.384)	(2.389)
Single Member Constituency (SMC)	-2.528	-2.491
	(4.507)	(4.518)
Multi-Member Constituency (MMC)	-0.854	-0.924
	(4.298)	(4.308)
Nation-Wide Constituency/National List (NL)	26.07 ***	25.97 ***
	(5.552)	(5.565)
SMC + MMC	2.358	2.471
	(4.322)	(4.332)
SMC + NL	9.998 *	9.923 *
	(5.503)	(5.515)
MMC + NL	-3.527	-3.633
	(4.326)	(4.337)
Majority	11.97 ***	11.95 ***
	(0.619)	(0.620)
Constant	45.31 ***	45.55 ***
	(5.955)	(5.971)
Observations	1,030	1,023
Number of Countries	94	94

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The two columns of Table 6.4 present the analysis of the effects of party duration and economic conditions on winning party vote share for the full model (column 1) and for the sample minus the outlier case (column 2). While the coefficients on party duration and the calculated coefficients for the change in GDP are positive, but not significant in both models, the interaction between the two key independent vari-

ables requires examination of more than just coefficients and statistical significance. Figure 6.9 and 6.10 below present the plotted effects.

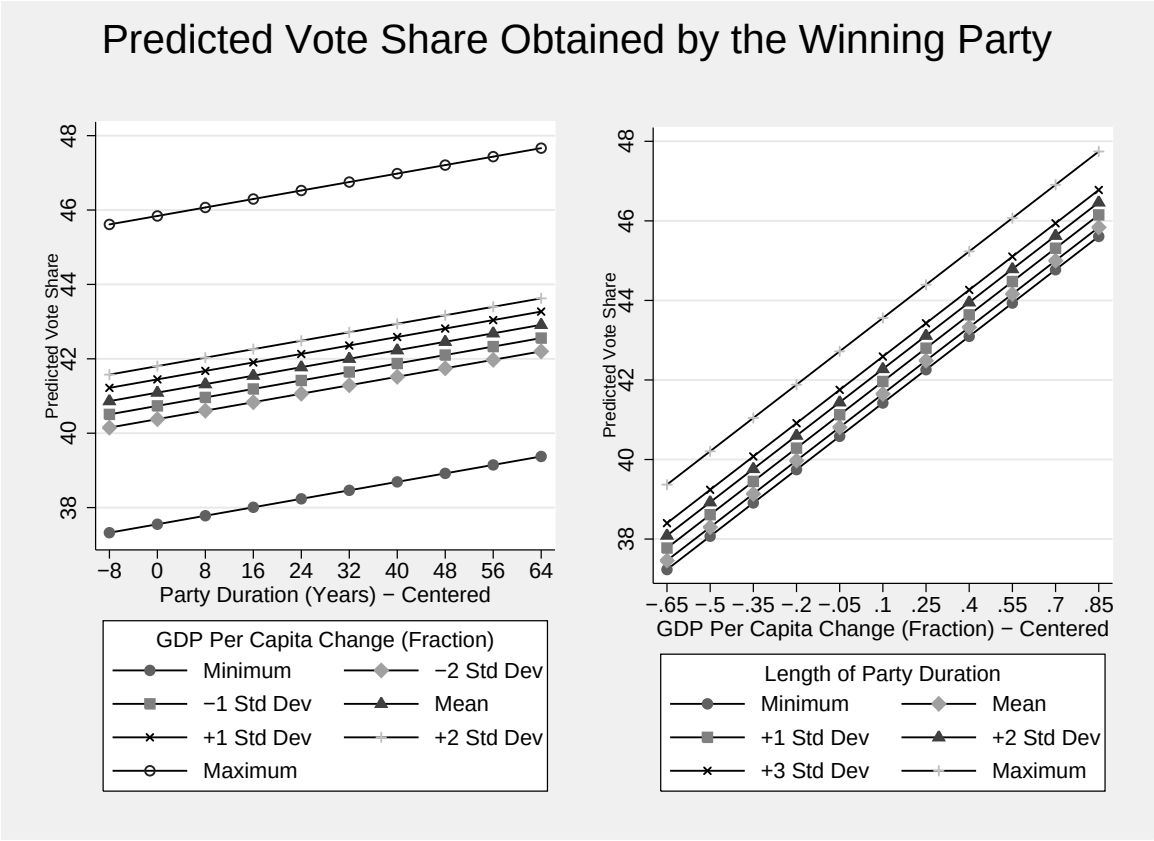

Figure 6.9: Predicted Winning Party Vote Share - Full Sample

The predicted vote share obtained by the winning party with the GDP per capita change held at values of interest across party duration for the full sample of cases is presented in the left plot of Figure 6.9 while the plot corresponding to the winning party's vote share at different lengths party duration across GDP per capita change is shown on the right. Figure 6.10 presents the corresponding plots for the sample of cases where party duration is less than fifty-five years[10].

[10]Individual plots with 95% confidence intervals are presented in the Appendix.

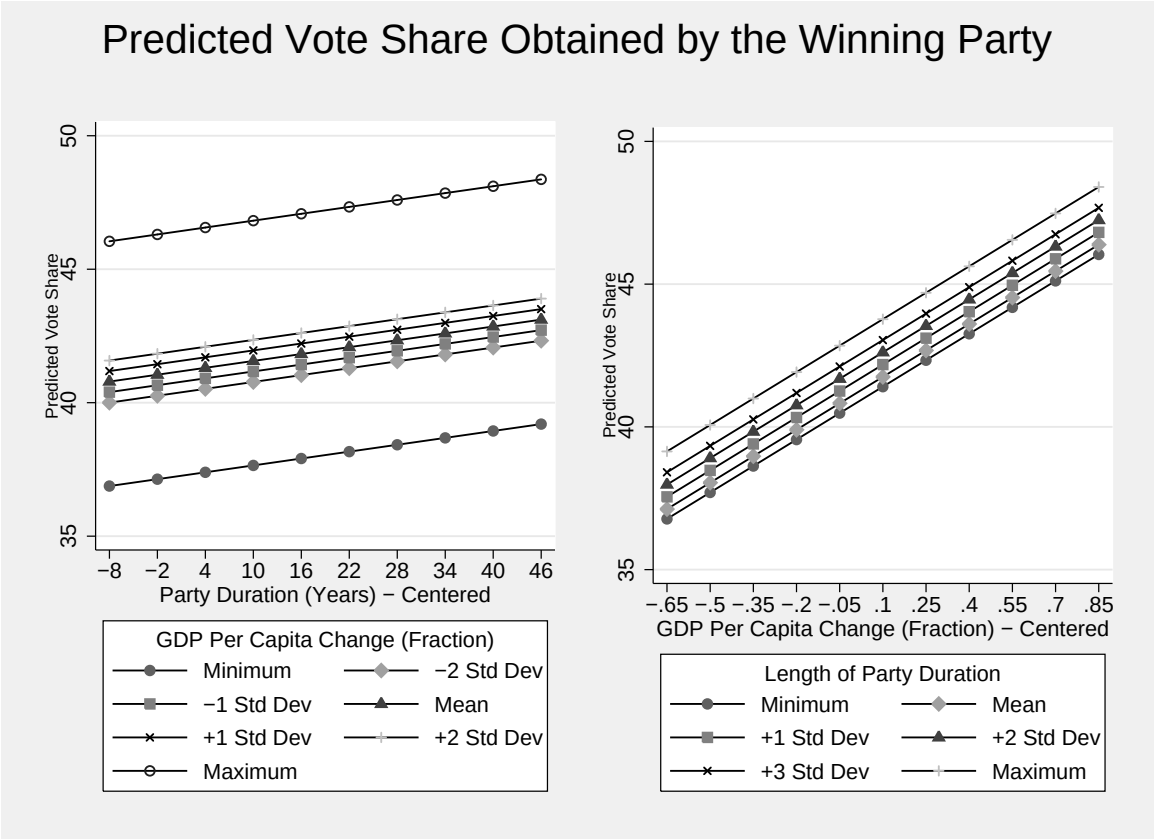

Figure 6.10: Predicted Winning Party Vote Share - Party Duration <55 Years.

Together, these plots tell a similar story to the previous sections – the length of party duration affects the effect of economic conditions on the outcome of elections. The four plots shown provide evidence consistent with economic voter theory. The vertical points in the two left plots and the individual lines in the right plots coincide with holding party duration constant and varying the GDP per capita fractional change. Across the plots, when party duration is held constant, increasing the GDP per capita change increases the predicted vote share obtained by the winning party. For instance, when party duration is held at plus one standard deviation above the mean, eighteen years, the predicted vote share obtained by the winning party rises from 37.746 percent when the GDP change is set at its minimum value, up to 46.122 percent once the GDP change reaches its max. The lines shown in the two left

plots and the vertical points presented in the right plots coincide with holding GDP fractional change constant and varying party duration. If the GDP per capita change is set to its mean value, increasing party duration from one year to its maximum of seventy-six years only increases the predicted vote share by around two percent, from 40.863 percent to 42.914 percent. What is interesting about these findings is that, although it is a larger effect, similar to its effect on seat share, party duration does not have a drastic effect on the predicted vote share obtained by the winning party.

Analogous to the analysis of the effects of party duration on winning party seat share, the regression analysis presented above shows that decreased likelihood of incumbent party loss cannot be explained by an increase in winning party vote share resulting from increased party duration. The analysis suggests that increasing party duration from one year to seventy-six years only leads to an increase to the winning party's vote share of around two percent.

Furthermore, this analysis has again shown that party duration conditions the effect of economic conditions on election outcomes. Like the analysis of winning party seat share, these results suggest that two parties with different lengths of party duration but facing identical economic conditions can expect to winning different vote shares. The party with the greater tenure in control of the legislature is predicted to receive a larger vote share than the party which was more recently elected, even if they face the same economic conditions.

Turning to the second proposed mechanism by which party duration affects the outcome elections - that increasing party duration decreases the likelihood that the incumbent party loses an election by decreasing the change in vote share from one election to the next. In Chapter 4, I showed that the amount that the winning party's vote share changes from one election to the next decreased as party duration increased. In the next section, I take a closer look at this relationship, specifically considering the effect of economic conditions on this relationship. The multivariate

results, where economic conditions are measured by the change in GDP per capita as a fraction of the previous year's GDP per capita, are shown in Table 6.5[11].

Table 6.5: Multivariate Regression Results for Predicted Change in Winning Party Vote Share

Variables	All Cases	Party Duration <55 Years
Party Duration (Centered)	-0.060 ***	-0.065 ***
	(0.022)	(0.024)
GDP Per Capita Change (Centered)	-7.780 *	-7.576
	(4.666)	(4.696)
Party Duration * GDP Change	-0.458	-0.398
	(0.469)	(0.484)
Parliamentary	-17.54 ***	-17.52 ***
	(5.246)	(5.264)
Presidential	-0.846	-0.845
	(1.735)	(1.741)
Bicameral Legislature	0.313	0.413
	(1.075)	(1.093)
Plurality/Majoritarian	2.438	2.463
	(2.370)	(2.379)
Proportional Representation	1.857	1.846
	(2.374)	(2.382)
Single Member Constituency (SMC)	-7.908 *	-7.955 *
	(4.693)	(4.710)
Multi-Member Constituency (MMC)	-8.007 *	-7.985 *
	(4.477)	(4.492)
Nation-Wide Constituency/National List (NL)	17.81 **	17.84 **
	(7.937)	(7.964)
SMC + MMC	-7.092	-7.167
	(4.505)	(4.522)
SMC + NL	-10.20 *	-10.19 *
	(5.961)	(5.981)
MMC + NL	-9.464 **	-9.429 **
	(4.500)	(4.516)
Majority	-1.293 **	-1.284 **
	(0.590)	(0.592)
Constant	24.49 ***	24.35 ***
	(6.541)	(6.561)
Observations	952	945
Number of Countries	82	82

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In the two models shown in Table 6.5, the calculated effect of party duration

[11]These are the same model results presented in Table 4.5

is both significant and negative. Conversely, the calculated effect of economic conditions, measured as the GDP as a fraction of the previous year's GDP per capita, is negative, but not significant at traditionally accepted values. Furthermore, plotting the results due to the presence of the interaction between party duration and the economic measure illustrate similar findings.

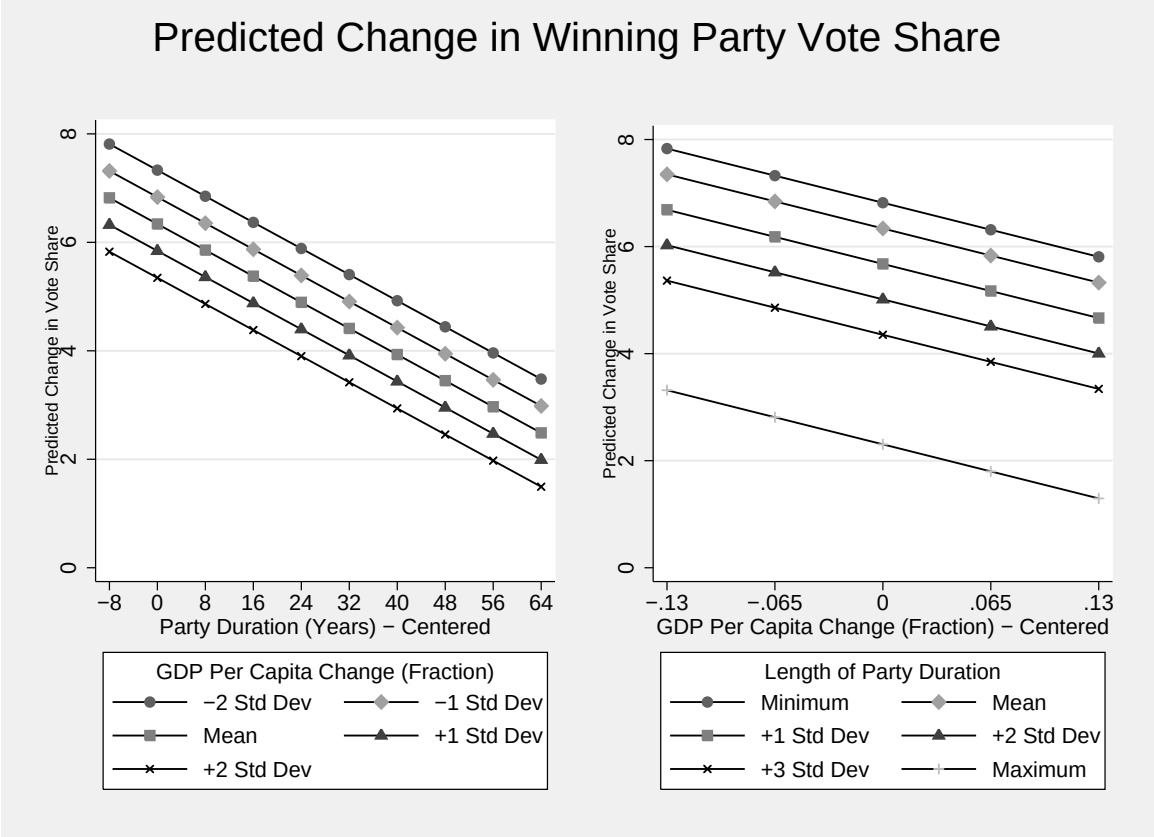

Figure 6.11: Predicted Change in Winning Party Vote Share - Full Sample

The two plots shown in Figure 6.11 correspond to the full sample of cases while the plots shown in Figure 6.12 were produced by examining the sample of cases where party duration is less than fifty-five years. All four plots show several similar results. First, increasing party duration is predicted to decrease the amount by which the vote share obtained by the winning party changes from one election to the next. The vote share for a party which has been in control of the legislature for fifteen years

is predicted to change by smaller amount than a party which has only controlled the legislature for three years, holding all other variables constant. Additionally, more positive economic conditions lead the vote share obtained by the incumbent party to be more stable. Finally, the four plots illustrate the conditional relationship between the two independent variables – that the predicted change in winning party vote share from one election to the next requires considering both party duration and the state of the economy.

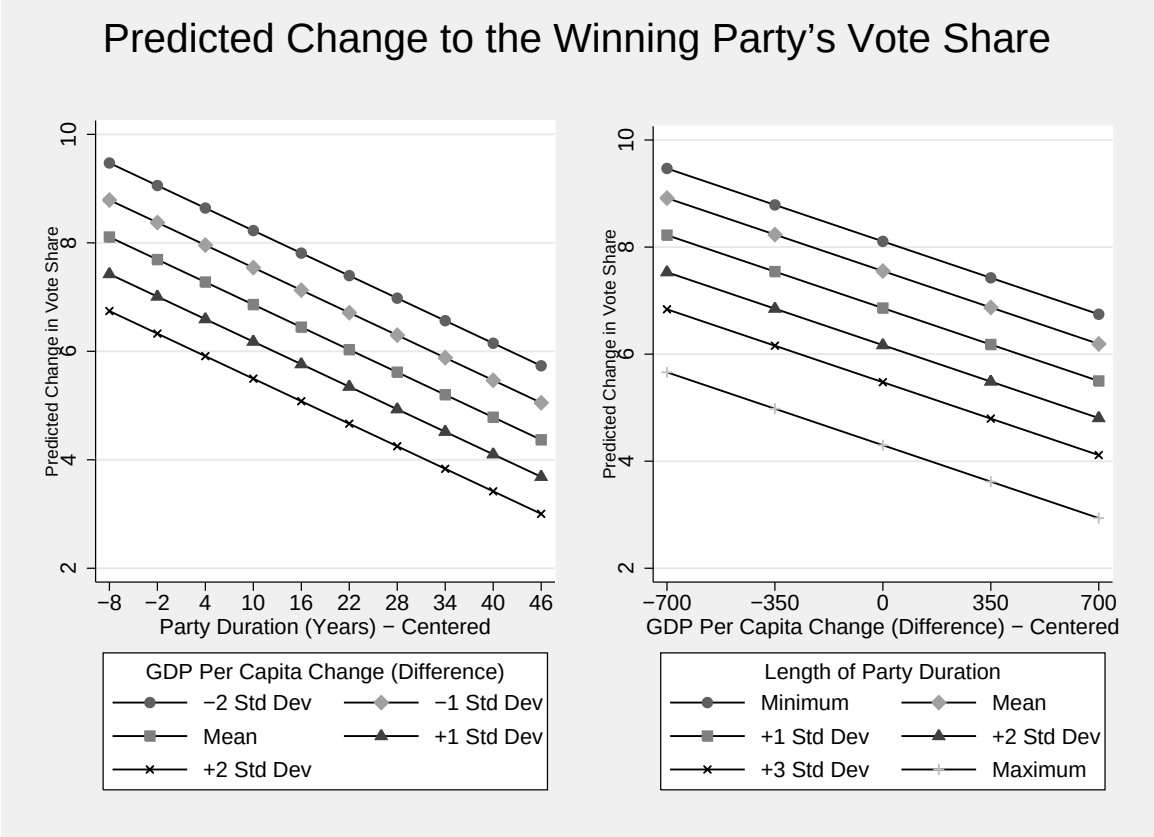

Figure 6.12: Predicted Change in Winning Party Vote Share - Party Duration <55 Years.

This section has examined two mechanisms by which party duration and economic conditions can affect the outcome of elections – by increasing the winning party's vote share, or by decreasing the change in vote share from one election to the next. Expanding on the analysis presented in Chapter 4, the evidence presented

here has shown that the change in winning party vote share, not the actual vote share, better explains the decreased likelihood of incumbent party loss in response to increasing party duration. Furthermore, these results demonstrate the conditional relationship between party duration and the economy, best represented through a multiplicative interaction. These findings hold across the full sample of cases and the smaller sample of cases.

6.3 Conclusion

There are several important conclusions which can be drawn from this chapter. Similar to the analysis presented in Chapter 4, I have argued that the length of party duration impacts the outcome of elections – that increasing party duration decreases the likelihood that the incumbent party will lose an election.

However, with Hypothesis 4 and 5, I proposed that party duration conditions the effect of economic conditions on the outcome of elections. The analysis presented throughout this chapter supports these hypotheses. Looking at the effect on the likelihood of incumbent party loss, increasing party duration decreased the likelihood of incumbent party loss across all values of economic conditions. The likelihood of incumbent party loss, for two parties facing identical economic conditions will be lower for the party with greater party duration.

Furthermore, looking at the effect of party duration and economic conditions on winning party seat share and the change in winning party seat share as well as winning party vote share and the change in winning party vote share provided results similar to Chapter 4. First, increasing party duration increased the predicted seat share and vote share, holding economic conditions constant, but only by a substantively small effect. However, the analysis presented in both chapters indicated that incumbent parties do not become more secure by winning greater seat shares or vote shares the longer they remain in power, but instead by better maintaining the seat

share and vote share which they already control, from one election to the next.

CHAPTER 7
COMPARATIVE ANALYSIS

7.1 Introduction

In the previous chapters, I examined the effect of party duration and economic conditions on election outcomes. In this chapter, I will take a closer look at several unique cases where incumbent parties maintained long tenures. The cases considered in this chapter are Denmark's Social Democrats, India's National Congress, Italy's Christian Democrats, Japan's Liberal Democratic Party, and the United States' Democratic Party.

These countries were selected for a variety of reasons. For scholars interested in cases of single party dominance or dominant party systems, India, Italy, and Japan are common cases which have previously received attention from scholars. While the Social Democrats have not received the same attention, partially due to unique ruling conditions in Denmark, they are the party which has controlled their respective legislature the longest. Finally, the case of the Democratic party is especially interesting since a single party maintained a long tenure in the most established two-party democracy.

The remainder of this chapter will be devoted to each of the specific parties. I begin each section briefly discuss some of the history of both the country and the relevant party. I then discuss the conditions which led to their initial victory before reviewing both their electoral successes and the economic conditions under their tenure. Finally, I close each section by discussing the factors which influenced each party's eventual fall from power. I conclude this chapter by discussing some of the similarities each of these diverse parties shared.

7.2 Social Democrats

One of the most interesting cases to consider is that of Denmark's Social Democrats (SD). From 1924 to 2001, the SD party was the party with the largest presence in the Danish parliament, the Folketing. Denmark has a parliamentary system with a unicameral legislature. Prior to 1953, Denmark had a bicameral legislature comprised of the Rigsdag (the lower chamber) and the Landsting (the upper chamber). Elections in the Rigsdag were originally decided by plurality in single member districts, but in 1915, the electoral rules and districts changed to proportional representation in multi-member districts. Since becoming a unicameral legislature, elections for the one-hundred seventy-nine seats in the Folketing have been decided by proportional representation in multi-member districts once every four years, unless elections are called earlier.

The SD party was founded in 1871 and won its first seats in parliament during the 1880s. During this period, large numbers of three major social groups in Denmark began to align with the three largest parties: The farmers supported the liberal party, the Venstre (V); the landed citizens aligned with the Conservative Party (KF); and the workers were represented by the SD party (Jayasinghe, 2014). One of the SD party's major focuses was to improve the situation of Denmark's growing urban working class and to protect their rights.

Much of the early success of the SD party can be attributed to its relationship with Denmark's numerous trade unions. The party pushed for democratic reforms, repeal of indirect taxes, limiting working hours, and various welfare measures. While these policies favored the SD's supporters, another of the party's advantages was its strategic position as the most central of the large parties. This positioned the SD party to form coalitions with both left and right parties when necessary. For instance, in 1913, the party backed measures which supported farmers (Fitzmaurice, 1981).

During the 1940s, the SD party was crucial in establishing Denmark's welfare state and social welfare programs. While the country experienced a shift to the left, the SD's position at the center allowed the party to maintain its independence from the other left parties. In the 1960s and 1970s, the party also developed major social programs. These programs were designed to ensure equal opportunities for all citizens, prevent the concentration of wealth and power, and improved the quality of life and living standards (Fitzmaurice, 1981; Jayasinghe, 2014).

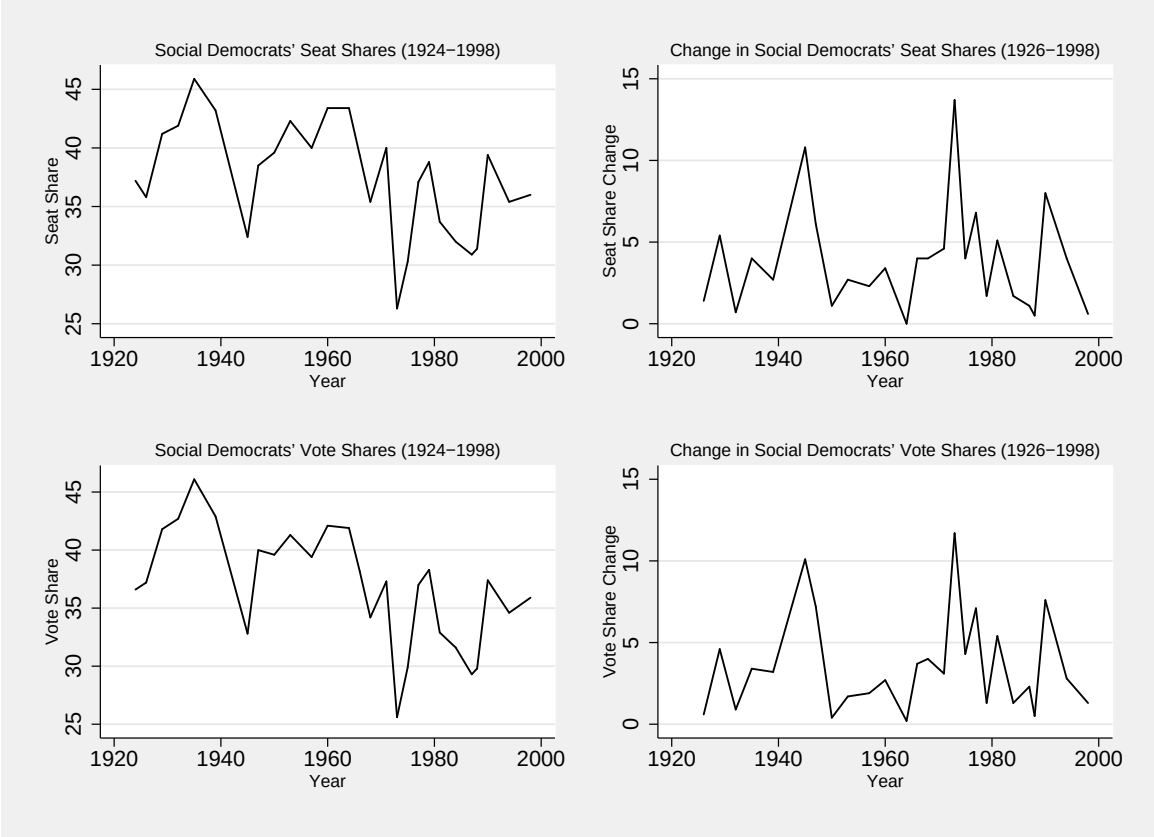

Figure 7.1: SD Seat Shares and Vote Shares (1924 to 2001)

While the SD party played a major role in Danish politics and controlled the Prime Minister for over seventy years, one unique aspect of the Danish political system is that the country is often governed by minority coalitions. In fact, in the post-war era, there have been only four coalition governments which ruled as a majority (Nohlen, 2010). On average, the SD party received less than forty percent of both

the vote share and seat share. The party controlled its largest share of the legislature in 1935, just over forty-six percent of the seats.

Furthermore, both the party's seat share and vote share showed a large degree of fluctuation from one election to the next. After 1960, both showed even greater fluctuations, contrary to the results found in Chapter 4 and Chapter 6. In 1973, as a result of the global oil crisis, the party experienced its largest changes, losing almost fourteen percent of its seat share. However, it would gain many of those seats back over the next three elections.

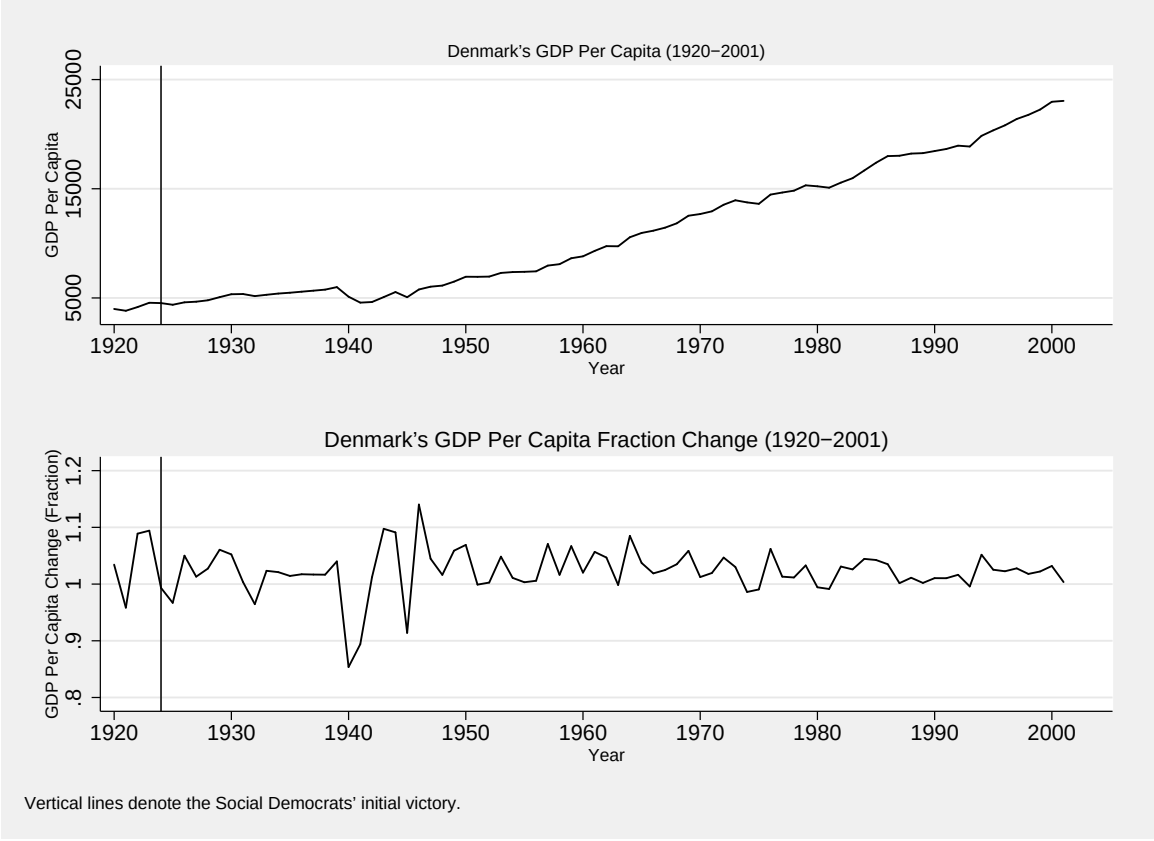

Figure 7.2: Denmark's GDP Per Capita (1924 to 2001)

Denmark largely experienced positive economic growth while the SD party controlled the country's legislature. Surprisingly, the SD party won reelection in 1926 following two years of declining economic conditions. While the SD's early rule in Denmark was marked by occasional years of economic decline, the worst occurring

in the early 1940s around the time of World War II, Denmark did not endure a protracted period of economic turmoil. Furthermore, the longer the party remained in power, the longer the stretches of prolonged economic growth.

However, the oil crisis in 1973 resulted in the first stretch of economic decline in over twenty years and led to drastic political ramifications. Prior to this period, the four oldest and established parties had negotiated and compromised. Together, these four parties typically secured over eighty percent of the vote. In response to the oil crisis and resulting recession, the electorate punished these four parties in a "landslide election", driving their collective share of the vote down to fifty-eight percent. Furthermore, the Progressive Party became the second largest party in the legislature and ushered in an era of confrontation in the Folketing (Jespersen, 2011).

Figure 7.3 presents the SD party's likelihood of losing an election from the first year they were up for reelection (1926) until the party lost in 2001, given the variables considered in the analysis presented in Chapter 4 and Chapter 6. In the election of 1926, the predicted likelihood that the SD party would lose the election was just over 0.5. However, the party did not lose that election and the predicted likelihood immediately began to decline. Although it did fluctuate from one election to the next, it never rose above 0.5 again, not even in 2001.

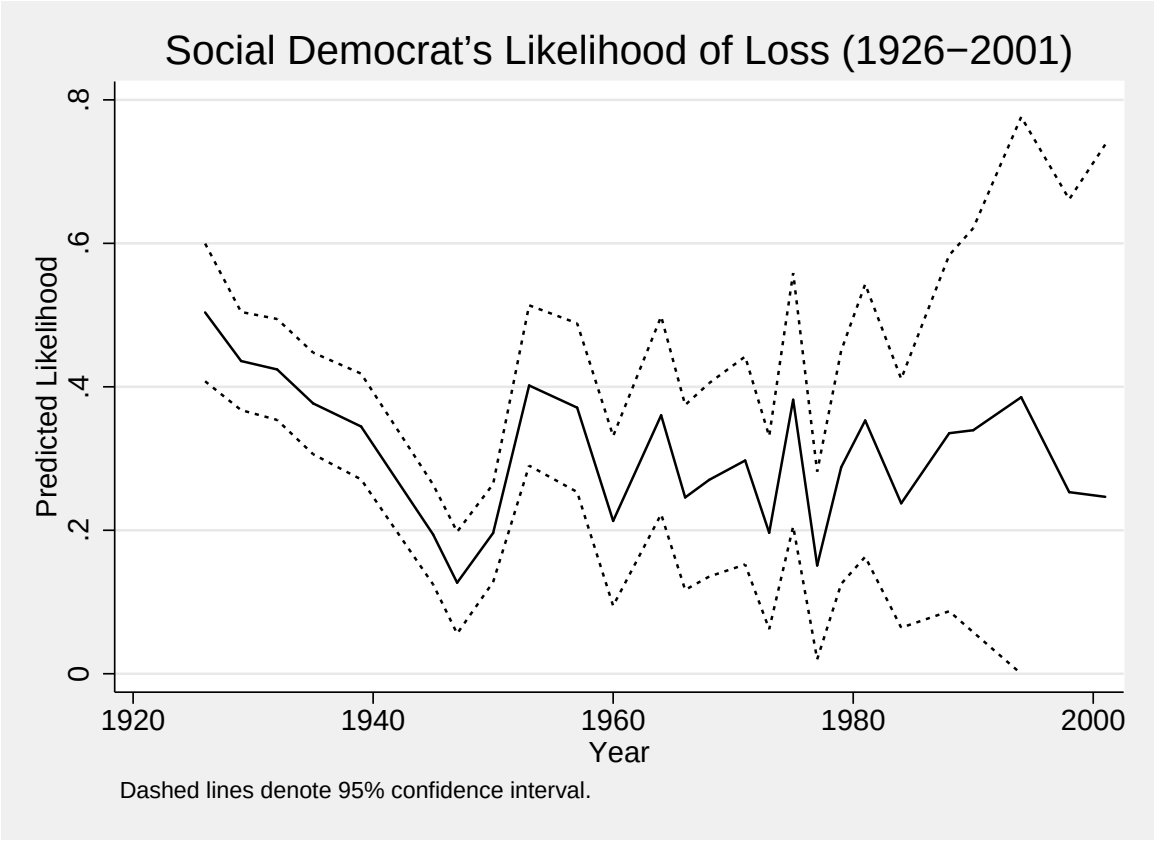

Figure 7.3: The Social Democrat's Likelihood of Losing an Election (1926 to 2001)

The SD party maintained the largest presence in Danish politics for over seventy years. However, in 2001, the party lost to a coalition of conservative parties. Those who have followed Danish elections have framed the loss around two central topics. Some have argued that the SD party's loss in 2001 was part of a growing push against center-left parties in many Nordic countries. For instance, the Swedish Social Democratic party became a minority party in 2006 as did the Social Democratic Party of Finland in 2003. This change is commonly attributed to two major factors. The first is the decline of labor and union culture in these countries. Much of the industry which helped parties like the SD come to power has moved abroad and the citizens have turned to new professions. Second, in many of these countries, there have been increasing sentiments against the Nordic welfare model these parties

helped establish and maintain for many years (Spongenberg, 2010).

However, the second explanation for the SD party's loss argued that economic policy did not impact the election. Instead, an "immigration crisis" centered around the country's growing Muslim population dominated the campaign cycle. This was partially driven by the September 11 attacks in the United States and the resulting war on terror and against the Taliban in Afghanistan (Qvortrup, 2002; Andersen, 2003). Interestingly, immigration has never been a major issue in Denmark. From 1991 to 2001, Denmark saw its immigrant population rise from around 4.4% to 7.4%. Some have argued that immigration moved to the forefront during this election due to the lack of other major problems in the country (Andersen, 2003).

What is undeniable, however, is that the September 11 attacks had an immediate effect in Denmark. Although most in Denmark acknowledged it was unlikely that Denmark would be a recipient of a terrorist attack, the right-wing populist parties which had taken an anti-immigration stance since the 1990s saw an immediate increase in their support. The right-wing parties seized on these trends and turned the attention on terrorism and foreign policy to immigration (Andersen, 2003; Roemer and Van der Straeten, 2006). The anti-immigration stance the right-wing parties had cultivated for around ten years helped keep the topic at the forefront of the election agenda and caused one of the largest electoral shifts in Denmark.

The SD party used its economic policies to establish itself and become a central player in Danish politics for almost a century. During this period, the party was crucial in establishing the Danish welfare state. While some claim that changing economic and social concerns drove the SD party to lose in 2001, others have argued that international factors played a greater role in undermining the party's long-term position.

7.3 Indian National Congress Party

For nearly one-hundred years, India was under British rule. It was during this period, in 1885, that the Indian National Congress (INC) was formed as an organization for aristocrats and the upper class. Gandhi became the leader of the INC in 1920 and drastically changed the organization, using it to launch the civil disobedience movement for Indian independence. The INC worked to push constitutional reforms for participation in elections and the legislature. Initially, the INC was not a political party, but a grassroots organization meant to cultivate nationalism and serve as a national movement for independence (Kumar, Sukumaran and Party, 1984; Gehlot, 1991).

In 1947, India achieved independence. The INC subsequently helped frame the new constitution and served as the ruling party in the new government (Mabbett, 1968). Throughout its democratic history, India has been a hybrid system sharing aspects of both president and parliamentary systems. India has a bicameral legislature. The lower chamber is called the Lok Sabha while the upper chamber is called the Rajya Sabha. Elections were initially decided by plurality in both single member and multi-member constituencies, but in 1957, the multi-member constituencies were eliminated (Nohlen, Grotz and Hartmann, 2001*b*). The first general elections were then held from late 1951 to early 1952 in which the INC won nearly seventy-five percent of the seats in the legislature. Conversely, the Communist Party of India (CPI) which came in second controlled just over three percent of the legislature. This trend continued during the INC's tenure in office as numerous smaller opposition parties failed to achieve the same level of national relevance as the INC.

From 1952 up until 1977, the INC won five elections before losing to a coalition of parties led by the Bharatiya Lok Dal (BLD). During this twenty-five year period, the INC received between forty to fifty percent of the vote and controlled, on average,

sixty-nine percent of the legislature. During this period, some argued that the Indian political system was not a democracy, but a one-party dominant system (Morris-Jones, 1967).

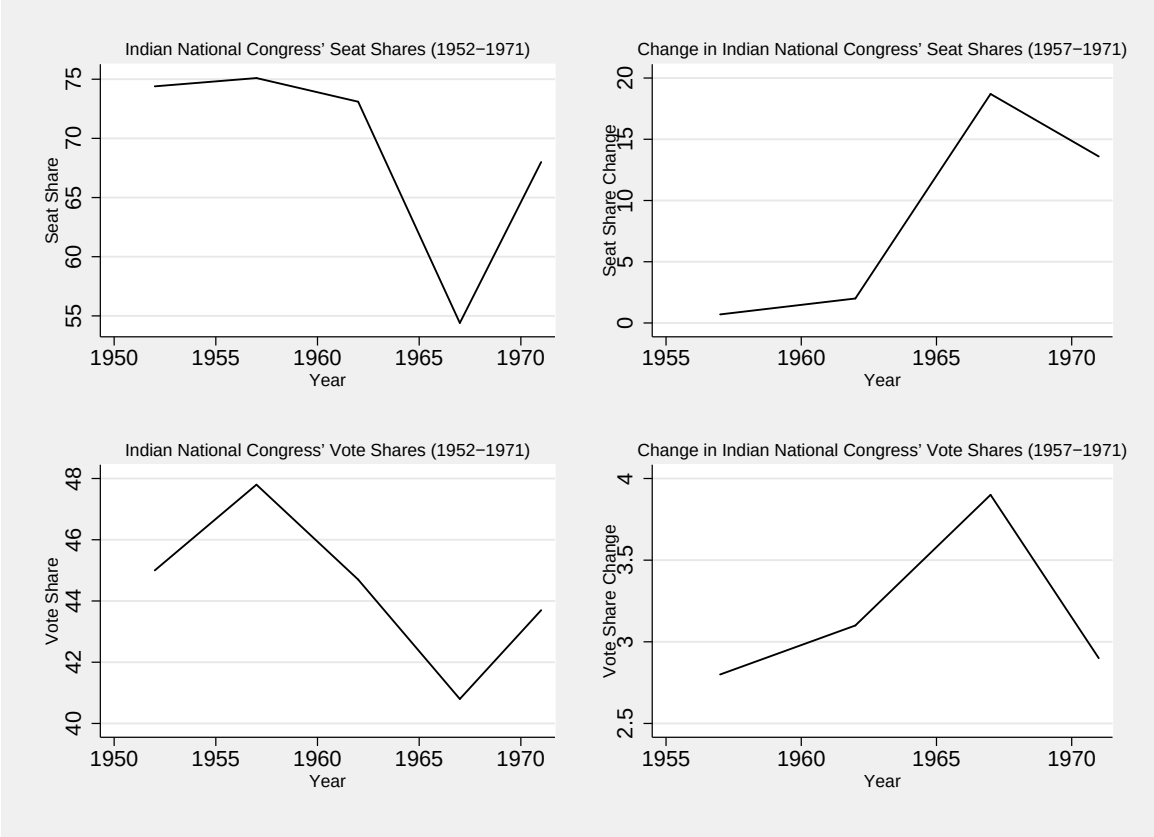

Figure 7.4: INC Seat Shares and Vote Shares (1952 to 1972)

However, others have claimed that the INC served to unify a variety of factions and interests and create a political consensus in India (Kothari, 1974). Instead, these scholars have suggested that the INC better understood India's diverse population. While the numerous opposition parties focused on narrow interests or specific ideological positions, the INC adopted a broader diversity of interests. Therefore, while the opposition fought over specific issues, the INC was able to dominate in the first-past-the-post elections by broadly appealing to voters. Still, these scholars have also argued that the party saw its performance decline during the 1960s, with the election

of 1971-1972 only serving to conceal its declining support. Prior to 1977, the INC saw its worst performance in 1967 when the party received just under forty-one percent of the vote and controlled less than fifty-five percent of the legislature (Mendelsohn, 1978).

Of the cases considered in this chapter, the INC won the fewest elections, only five over the course of its twenty-five years in power. Prior to its last electoral victory in 1971, the INC saw its seat shares and vote shares change by greater amounts the longer it remained in power, counter to the results presented in Chapter 4 and 6. In fact, the INC saw seat share drop by nearly twenty percent in the 1967 election, after the party had already controlled the legislature for fifteen years.

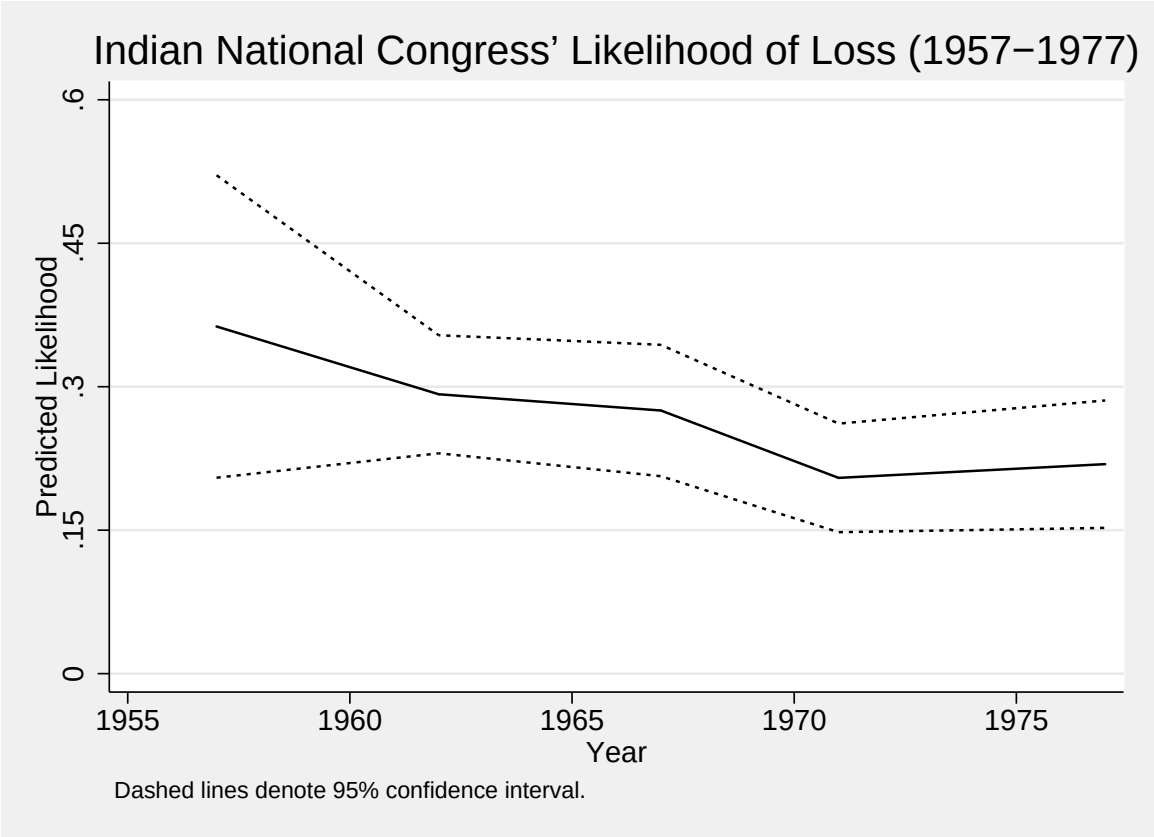

Figure 7.5: Indian National Congress' Likelihood of Losing an Election (1957 to 1977)

The INC's predicted likelihood of losing an election is shown in Figure 7.5

above. During the INC's time in control of the Lok Sabha, the predicted likelihood that the party would lose an election was less than 0.5 and typically decreased from one election to the next. Only leading up to the 1977, which the party did lose, did the predicted likelihood increase based on the variables considered.

During the INC's tenure in power, India's GDP per capita fluctuated from year to year, but showed positive growth over the INC's complete tenure. There were several years where the country's economy declined from the previous year, but none resulted in removal of the INC. Still, the worst period of economic decline in the mid 1960s resulted in the INC's worst performance during this period in 1967.

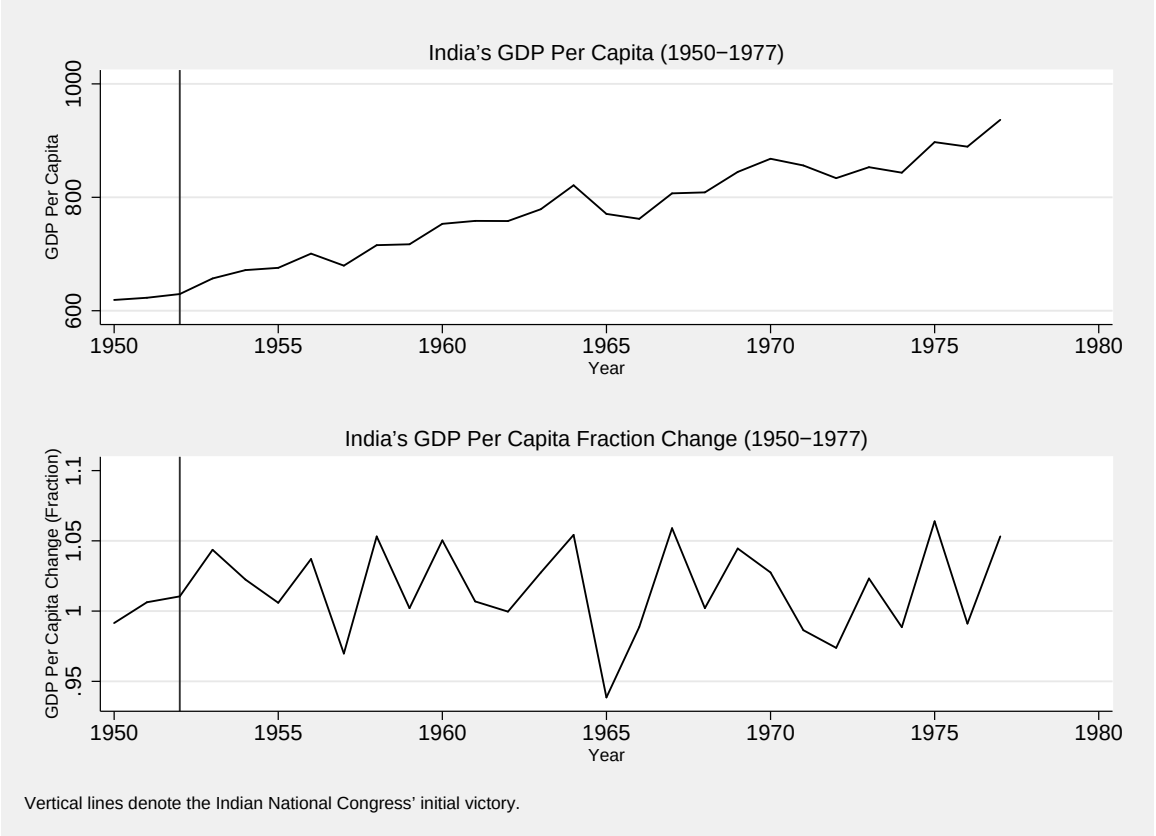

Figure 7.6: India's GDP Per Capita (1952 to 1977)

However, India's overall economic growth did not truly capture economic conditions for a large segment of India's population. While production in the industrial and agricultural sectors had grown, the lowest classes continued to be overlooked.

During the 1971 election, Gandhi (unrelated to the famous leader of the independence movement), the Prime Minister and leader of the INC split the party and campaigned on a progressive agenda dedicated to the eradication of poverty. However, this only placed a spotlight on the growing income disparity for India's lowest classes. Furthermore, 1973 and 1974 saw unexpected problems which continued to grow the discontent towards the INC. Both the world-wide oil crisis and and unexpected crop failures led to unprecedented spikes in inflation which affected the poorest citizens and the urban middle class the worst. As these groups suffered, they began to express their voice in the political arena (Mendelsohn, 1978).

India's economic turmoil is only part of the story of the INC's loss. In June of 1975, Gandhi declared a period of Emergency Rule which was made easier by the INC's complete control of the legislature. This period saw an enormous centralization of power and repression of freedom. Freedom of the press and freedom of speech were restricted and opposition leaders were arrested. Furthermore, in an effort to combat India's population growth, the government implemented a sterilization program which disproportionately targeted the lower classes (Mendelsohn, 1978; Brass, 1994).

Various opposition movements sprung up during the Emergency period, and when the Prime Minister called for fresh elections in 1977, the opposition parties finally had a common cause to rally around. Various opposition forces unified and campaigned that the election was to decide between democracy and dictatorship. Given the the INC's recent actions, the coalition led by the BLD was able to unseat the incumbent INC for the first time in India's history (Masani, 1977; Brass, 1994).

7.4 Christian Democratic Party

The Christian Democratic Party (DC) of Italy was founded in 1943 and was a successor to the Italian People's Party (IPP). In 1922, Mussolini and the National Fascist Party took hold of Italy and controlled the country for over twenty years.

Under Mussolini's rule, the IPP and all other political parties were banned. However, the political parties did not vanish, but actively participated in the Italian Resistance Movement which formed against the Fascists and German forces. Following the end of World War II, fascism collapsed in Italy and was soon replaced by democracy. Italy held its first democratic election in over twenty years in 1946 (Domenico, 2002; Duggan, 2013).

Since returning to democracy, Italy has had aspects of both presidential and parliamentary systems. Italy has a bicameral legislature comprised of the lower chamber, the Chamber of Deputies, and an upper chamber, the Senate of the Republic. The Chamber of Deputies contains six-hundred thirty seats elected by both plurality in single member constituencies and proportional representation in multi-member districts. However, the single member constituencies and plurality elections were only added in 1993, prior to the 1994 election (Nohlen, 2010).

After securing over thirty percent of the vote in the 1946 election, the DC party secured enough votes to control over fifty percent of the legislature in 1948. Between the election in 1948 and the election of 1992, both the DC party's vote share and seat share would continue to decline, but the party repeated secured between fifteen and twenty percent more seats in the legislature than the closest opposition party, the Italian Communist Party (PCI) and was actively involved in every government (Nohlen, 2010).

While the DC served as a key player in Italian politics for nearly fifty years, it is important to note that during this period, the party constantly formed coalitions with various other parties. During its tenure in power, the DC party formed fifty-six different cabinets (Cioffi-Revilla, 1984). However, the DC wielded a disproportionate amount of power in many of these coalitions. The DC had a number of advantages which allowed them to remain in power in Italy for nearly fifty years. One of the most important was the conflict amongst the various opposition parties. Early on, the DC

formed a number of governments with the Italian Socialist Party (PSI). However, because the PSI was paranoid of the PCI, many have argued that they were overly cooperative. This manifested again during the 1970s. The PCI proposed an alliance between the three largest parties, the DC, the PSI, and the PCI, to stabilize the government. This time, however, the PCI was more willing to work with the DC, which only served to distance the PCI and PSI (Duggan, 2013).

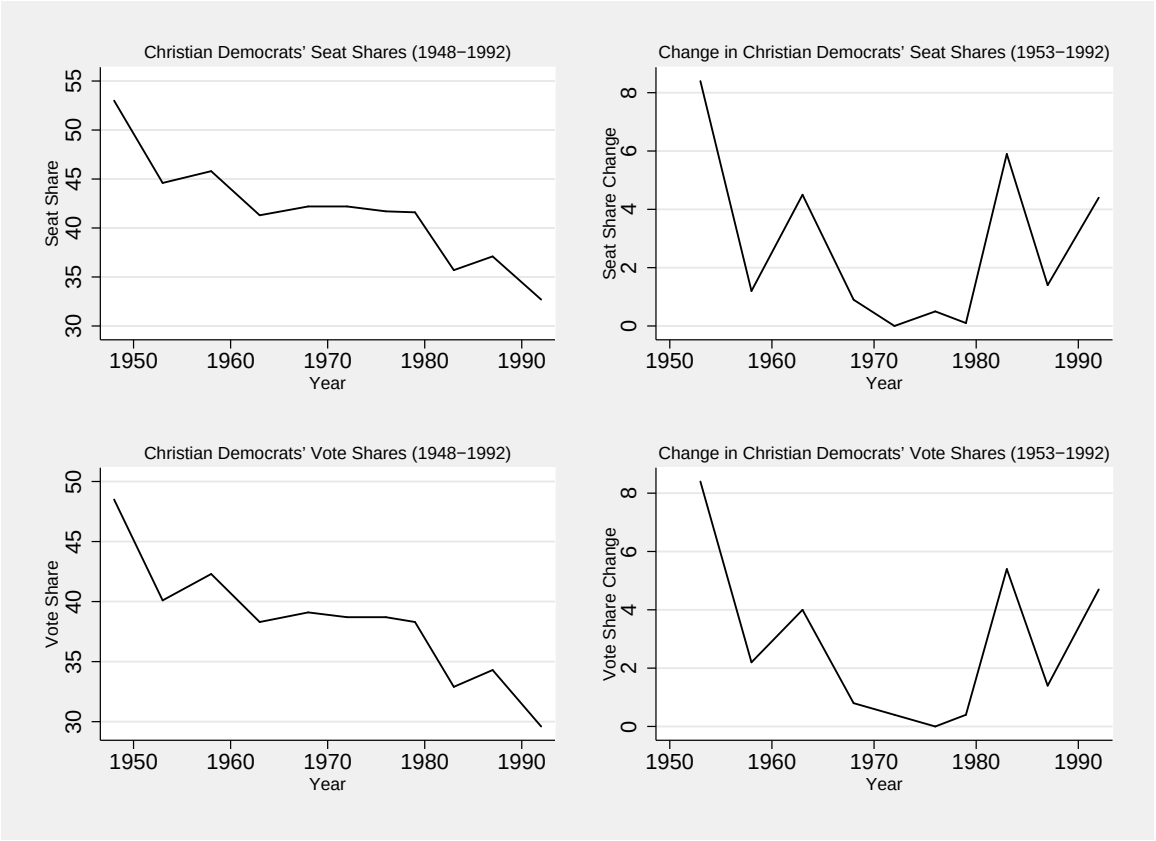

Figure 7.7: DC Seat Shares and Vote Shares (1948 to 1992)

In its early days, the DC also had the backing of the church which helped the party secure the backing of northern Italians. Prior to the 1948 election, the Pope, Pius XII gave the DC his blessing. The Pope went so far as to state that Moscow wanted to undermine Christian civilization, and voting against the DC and God was a mortal sin (Domenico, 2002). However, the DC's focus on economic liberalism put the party in conflict with the church. Luckily for the DC, in the early 1960s, the

church distanced itself from Italian politics to better devote itself to its global mission (Duggan, 2013).

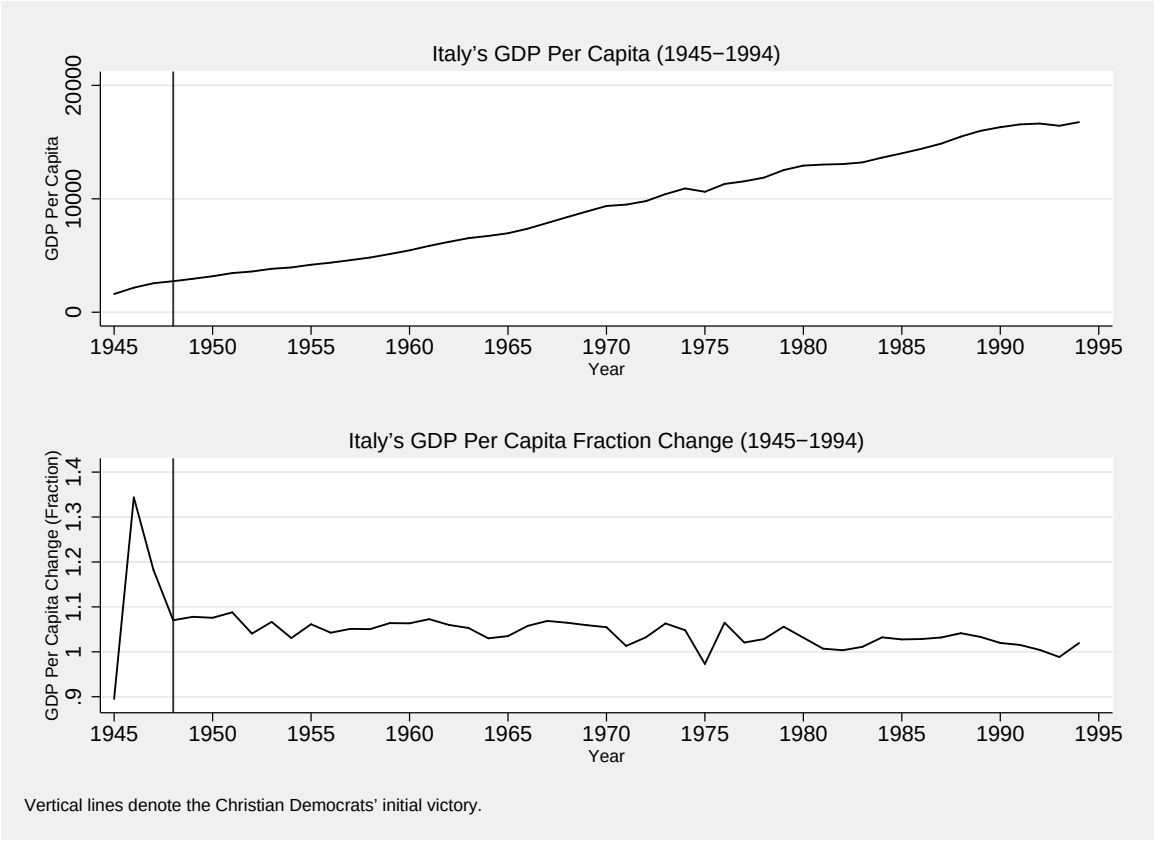

Figure 7.8: Italy's GDP Per Capita (1948 to 1992)

Arguably, the most important advantage for the DC was its economic policies and Italy's economic growth during the DC's early years in power. The end of fascism saw a number of significant changes in Italy. One was the rapid growth of consumerism which led to a crucial economic boom during the period of reconstruction. During this time, while consumerism was on the rise, most Italians associated the PCI with the Soviet Union and the notion of self-sacrifice for the greater-good. Conversely, the DC, from their position in control of the government, made sure to inundate Italy with images from the industrialized west. During this period, the DC instituted an economic policy called *scala mobile* which was crucial to establish their lasting support. Workers' salaries were connected to inflation to prevent the declines in living

standards which so many had experienced during fascism. Immediately following the end of fascism and World War II, Italy was largely an underdeveloped country. However, by the mid 1960s, under the DC's leadership, Italy's economy was booming, industry and manufacturing had both grown, and the standard of living had greatly improved (Domenico, 2002; Duggan, 2013).

With control of the government, the DC used public funds to improve their electoral fortunes by fostering development programs in the south. However, this also led to a system of state clientelism which helped the DC consolidate its power. The DC made sure to direct funds to areas which supported the party, which made those regions dependent on the DC's economic support (Duggan, 2013). During the 1960s, the DC also developed a number of reforms and programs for education and health.

However, the early 1970s saw a drastic shift in Italy's economic fortunes. Italy, which relied heavily on oil, was hit hard by the global oil crisis in 1973. The government was forced to devalue the lira, which helped exports, but raised domestic prices. This led to a cycle of inflation which the government could not control. Furthermore, during the 1970s, the rising costs associated with the educational and health reforms of the 1960s began to become a problem. In response, the government was forced to raise taxes and interest rates (Domenico, 2002; Duggan, 2013). Many have argued that Italy's economic turmoil should have led to the DC's collapse (Tarrow, 1990). However, like Japan's LDP, when faced with economic turmoil, the DC was able to use its past economic successes to remain in power. While the party lost support, it held enough power to form the aforementioned coalition with the PCI and PSI (Pempel, 1990).

The 1980s saw a significant economic recovery. It appeared as if the electorate's faith in the DC had been rewarded with a second economic boom. During the 1980s, the DC loosened its control of the Italian government. For instance, in 1981, the DC allowed the Republican Party, one of the smaller parties in a five party coalition,

to appoint their leader the Prime Minister, the first non DC Prime Minister in over thirty years; although the party maintained its control over the legislature. However, as the end of the 1980s approached, a number of major events occurred which led to the eventual collapse of the DC in 1994 (Duggan, 2013).

First, the end of the 1980s was a period of economic turmoil in Italy. As a result of the economic crisis, there was great pressure for parliamentary and party system reform. Furthermore, as communism began to collapse in the early 1990s, the DC lost one of its major opponents. In 1990, the PCI was dissolved and many of its members formed the Democratic Party of the Left (PDS). Additionally, both the DC and PSI were rocked by a major political scandal. The city council of Milan were caught taking kickbacks. As the investigation grew, thousands of politicians and businessmen were soon swept into the scandal. Moral outrage against the political system grew as a result of this scandal which soon led to the DC's downfall (Duggan, 2013).

Prior to the 1992 election, a new party called the northern league emerged and campaigned against the corruption of the government. While the DC held onto power in the 1992 election, two years later, the Forza Italia (FI) party won twenty-one percent of the vote and formed a coalition which excluded the DC for the first time in nearly fifty years. Formed only two months prior to the election, FI also campaigned chiefly against government corruption (Duggan, 2013).

Based on the variables considered in Chapter 4 and 6, the DC's predicted likelihood of losing an election showed a overall negative trend. In response to the economic turmoil of the 1970s, the predicted likelihood rose, but was still under .4. In fact, leading up to the election of 1994, the predicted likelihood of loss approached its lowest values during the DC's tenure.

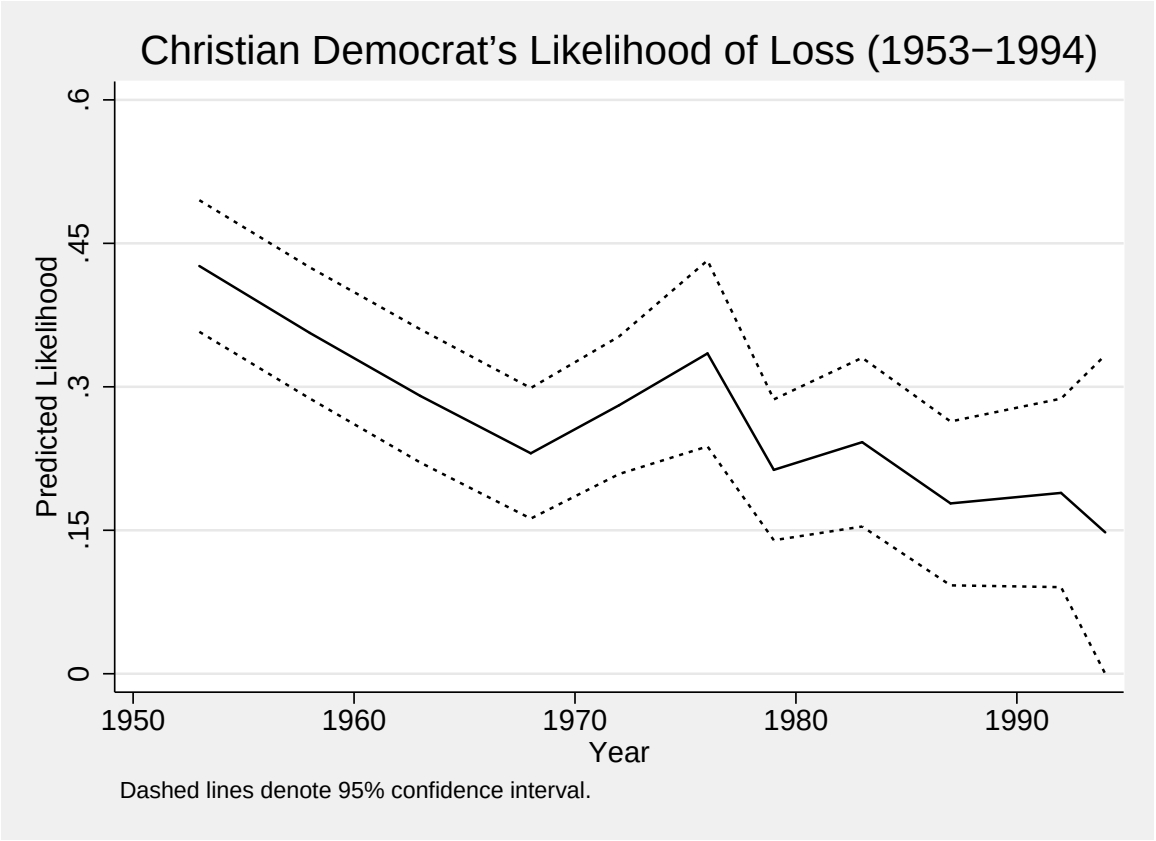

Figure 7.9: The Democratic Christian's Likelihood of Losing an Election (1953 to 1994)

After almost fifty years in control of the government of Italy, the DC was removed from power. Economic turmoil, political scandals, and the dissolution of one of the party's chief rivals all played a contributing role in its collapse. Unlike the LDP in Japan which will be discussed in the next section, the DC could not escape its political scandals and was disbanded in 1994. Although many members joined FI in the aftermath, that party never held the same level of control which the DC had maintained for so many years.

7.5 Liberal Democratic Party

Japan transitioned into a democracy in 1947, following the end of World War II, and held its first democratic elections in 1948. Japan has a parliamentary democracy with a bicameral legislature comprised of the lower chamber, the House of Rep-

resentatives, and an upper chamber, the House of Councilors. In the House of Representatives, there are four-hundred eighty seats which are elected every four years unless elections are called earlier by either the Prime Minister or the Emperor. Up until election reforms in 1994, seats were decided by plurality in multi-member constituencies. Currently, three-hundred seats are decided by plurality in single member constituencies while one-hundred eighty are decided by proportional representation in multi-member districts.

Following six elections from 1946 to 1955 which saw five different parties control the legislature, the Liberal Democratic Party (LDP) came to power in 1958 and secured a majority of both the vote share and seat share. For thirty-eight years, the LDP remained in power and was a dominant force in Japanese politics. In fact, compared to its closest competitor, which only received typically between twenty to thirty percent of the vote, the LDP consistently secured enough seats to control the House of Representatives by itself(Nohlen, Grotz and Hartmann, 2001*a*). However, in 1993, the LDP fell from power for the first time and was replaced by an eight-party coalition, led by the Japanese Socialist Party (JSP). In this section, I will take a closer look at some trends during the LDP's thirty-eight year stretch in power, and examine which factors influenced their fall from power.

The LDP was formed when two conservative parties, The Liberal Party and the Japan Democratic Party, merged prior to the election of 1955. During the LDP's first two elections, many would characterize the Japanese party system as a two party system with the LDP and its chief opposition, the Japanese Socialist Party (JSP) securing around ninety-one percent of the vote. However, over time, part of the LDP's success can be explained by the growing discourse of the opposition parties.

By the mid 1960s, the Democratic Socialist Party (DSP) and many other opposition parties began to emerge. While these parties successfully pulled supporters away from the LDP, the JSP saw greater losses, especially in the urban parts of the

country. Many of these parties failed to reach the same level of support the LDP and JSP had previously maintained, and the growing support for a variety of opposition parties left the LDP as the largest party without a unified challenger (Curtis, 1988).

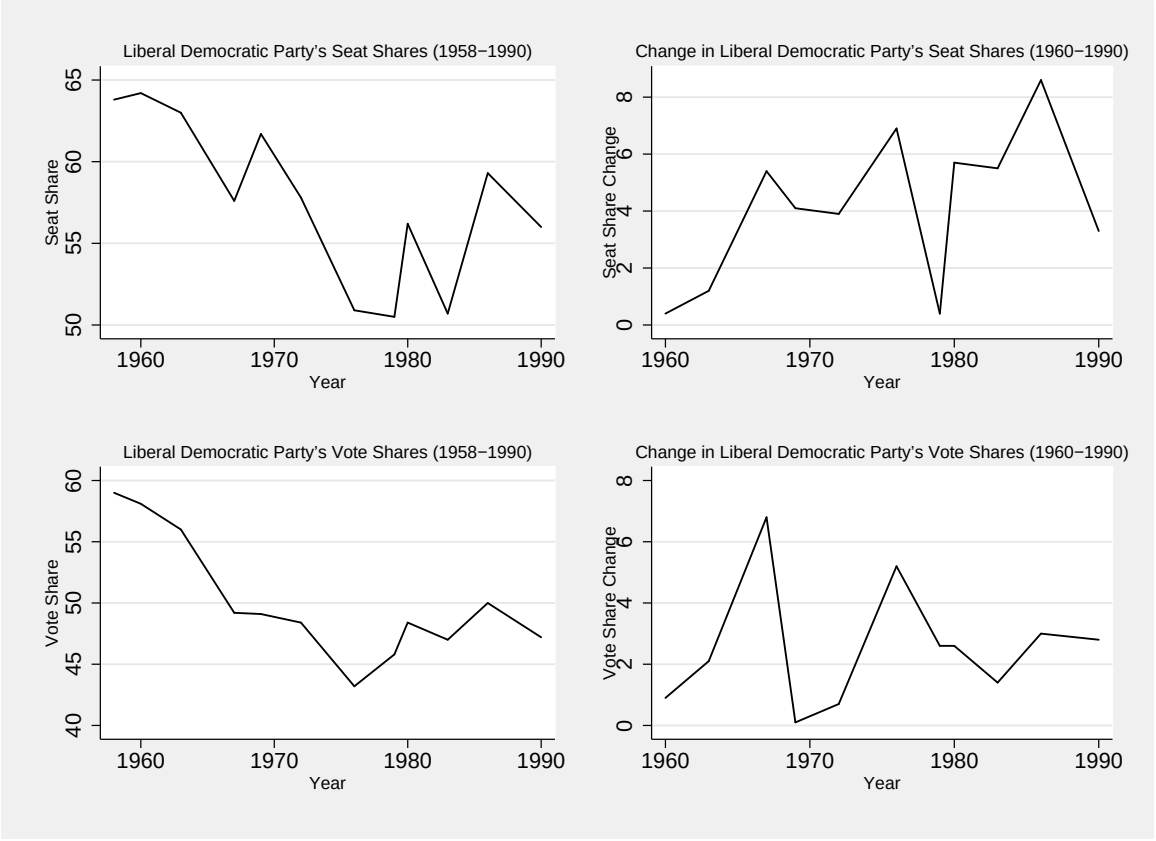

Figure 7.10: LDP Seat Shares and Vote Shares (1958 to 1990)

The LDP's election in 1958 saw an enormous spike in both winning party seat share (from just under forty percent to almost sixty-four percent) and vote share (from nearly thirty-seven percent to fifty-nine percent). Furthermore, during its time in power, the LDP managed to control the government without forming coalitions in every election except 1983. Interestingly, while the seat share obtained by the LDP fluctuated between fifty and sixty-five percent, the party's vote share showed far greater variation. At its peak, in its first election, the LDP received fifty-nine percent of the vote. Overtime, their vote share declined, but typically stayed within the forty-

five to fifty percent range, only falling under forty-five percent once. Conversely, its closest competition typically struggled to secure over twenty percent of the vote. Counter to the analysis presented in Chapter 4 and Chapter 6 which found that incumbent parties experience smaller fluctuations in their seat shares and vote shares from one election to the next the longer they remain in power, both the LDP's seat and vote shares fluctuated very little over the course of the twelve consecutive elections which the party won.

Many scholars who have studied Japan attribute this to the LDP's dominance in rural districts. For many years, the core of support for the LDP came from rural districts and favored policies and programs (from bridges to subsidizing rice producers) which disproportionately benefited the rural constituencies over their urban counterparts (Pempel, 1982; Gordon, 1990). However, the LDP is also a pragmatic party that has not been weighed down by ideology. Faced with growing support for opposition movements which championed the environment, the LDP shifted its ideology and embraced environmental concerns during the 1980s(Krauss and Pekkanen, 2011).

Many scholars who have studied the LDP have argued that it is an umbrella party which holds together a variety of diverse factions (Schlesinger, 1999; Park, 2001; Krauss and Pekkanen, 2011). This structure led to the emergence of a largely decentralized party. LDP candidates developed their own organizations to mobilize voters and manage election in their home districts. Rather than an overarching leadership structure, many decisions, from cabinet appointments to policy, were the result of negotiations and tradeoffs between the various factions(Krauss and Pekkanen, 2011).

During the LDP's tenure in power, Japan's economy showed remarkable growth. Following the end of World War II, Japan transformed into an advanced industrial country under the LDP's leadership. From the 1950s to the early 1970s, Japan's economy experienced an "economic miracle." While the overall plot captures the

strong growth experienced during this period, the two plots presenting the annual change depict the extent of the growth. Under the LDP's leadership, Japan's economy only declined once, during the world-wide oil crisis in 1973. However, during this period, the LDP convinced voters that they were the party which could best manage the economy by relying on their previous economic successes. As a result, the LDP's policies rewarded voters with economic growth, lower inflation, and lower unemployment than many other countries during the same time (Inoguchi, 1990).

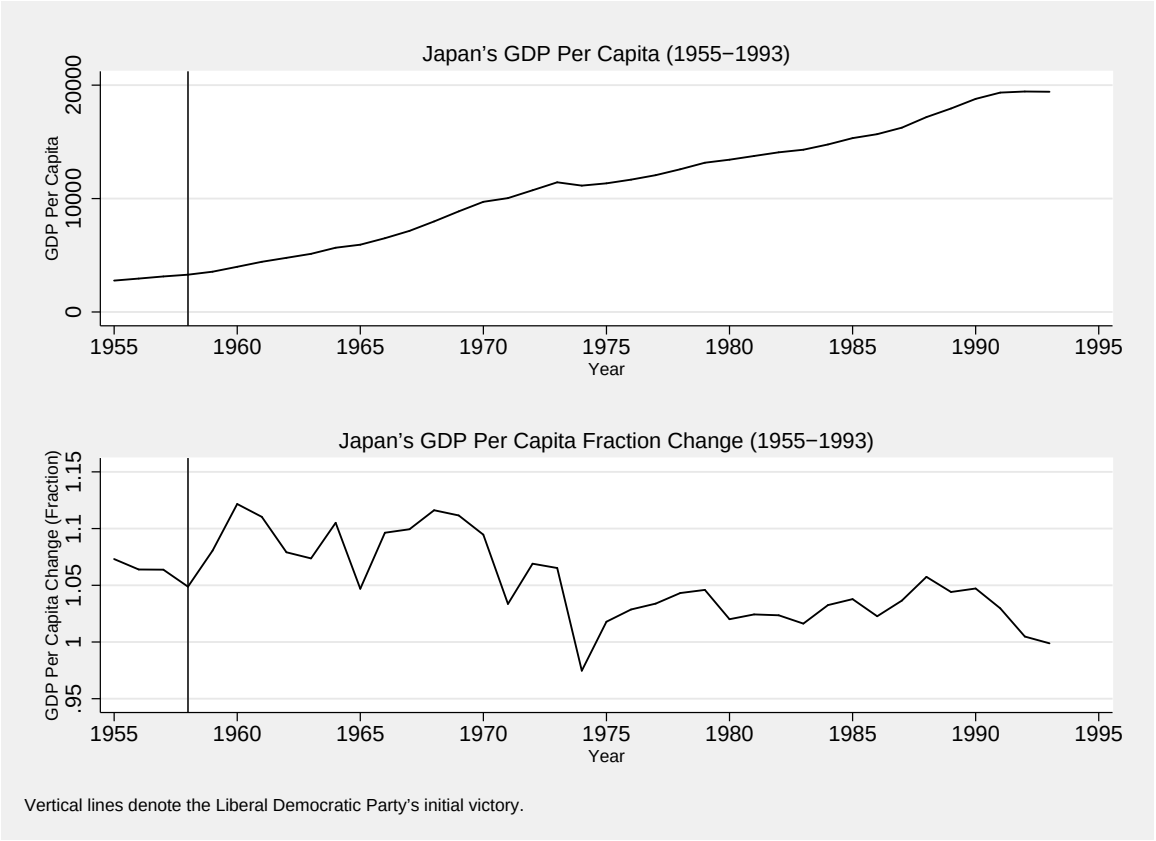

Figure 7.11: Japan's GDP Per Capita (1958 to 1993)

One of the most interesting aspects about the LDP's fall from power in 1993 is that it did not occur during a period of economic decline. While the GDP per capita growth had slowed and began to level out prior to 1993, economic conditions had not begun to decline. This plot suggests that the economy was not a crucial consideration for voters leading up the the 1993 election. Some scholars have even

argued that Japan's growing economy worked against the LDP, as evidenced by the declining vote share received by the party during this period. As discussed previously, the LDP's policies typically favored rural districts. Furthermore, many attribute the LDP's success to the networks individual candidates established in their home districts. As Japan's economy developed, more people moved to the major urban centers, away from the traditional networks the LDP relied upon so heavily (Curtis, 1988).

Like the other parties considered above, the LDP's likelihood of losing an election, based on the variables considered, showed a general negative slope the longer the party remained in power. While there were occasional periods where the predicted likelihood rose, the predicted likelihood was less than 0.5 for the entirety of the LDP's tenure in control of the House of Representatives.

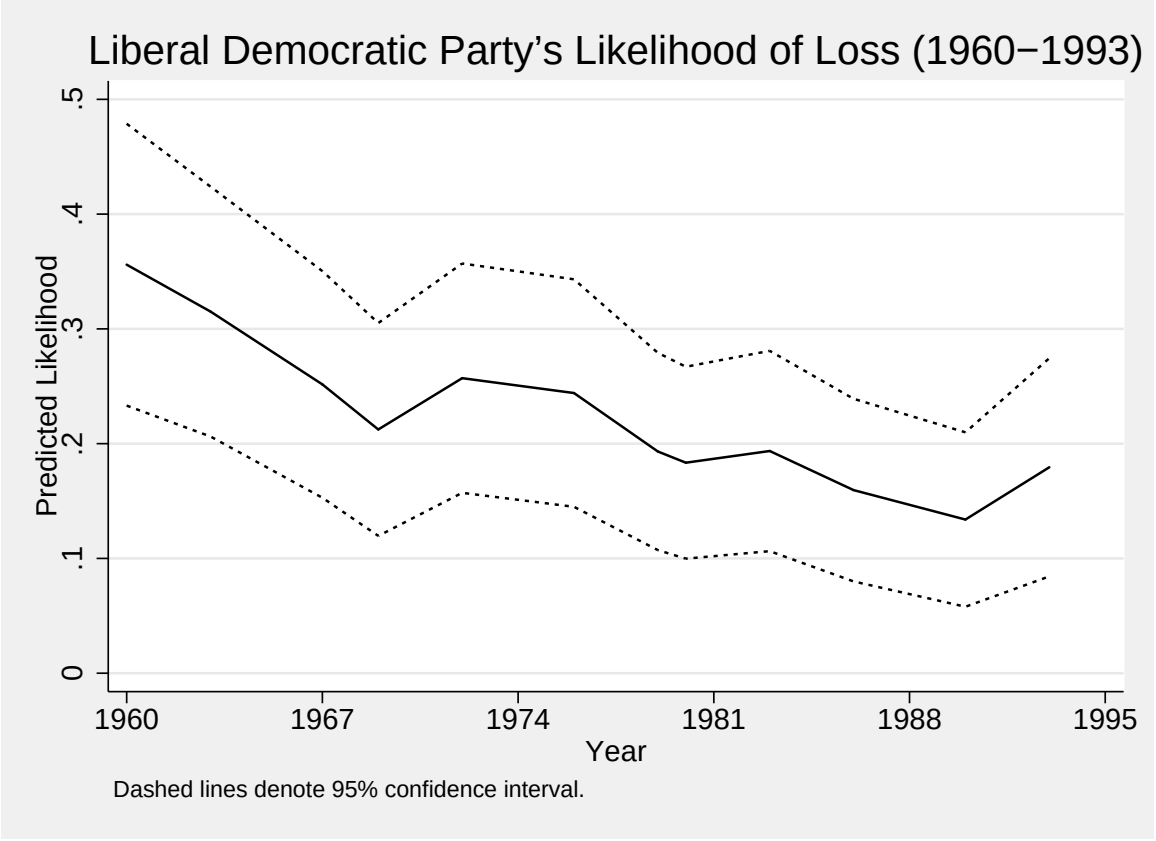

Figure 7.12: The Liberal Democratic Party's Likelihood of Losing an Election (1960 to 1993)

Given that the state of the economy, often attributed as one of the best predictors of election outcomes, does not explain the LDP's defeat, what does? Scholars who have studied the LDP have proposed two crucial factors which worked to undermine the LDP in 1993 – political scandals which plagued the party and the large degree of internal conflict which erupted prior to the election in 1993. The LDP was no stranger to scandals and was caught in a number of major political scandals during its tenure in power. For instance, during the 1970s, several major political figures were caught taking bribes from the Lockheed Aerospace Company to grant Lockheed important contracts. This scandal was so large, Tanaka, the Prime Minister and head of the LDP was found guilty and sentenced to jail in the mid 1980s (Schlesinger, 1999).

In 1992, Takeshita, the LDP's vice-president and head of its largest faction was arrested and convicted of bribery. The leadership structure of the LDP was best characterized by senior members who only reluctantly appointed their successors, another senior member of the party (Schlesinger, 1999). When the Takeshita was forced to resign, a new leader was selected. However, what set the 1993 election apart from other "scandal elections" was that many of the younger members were dissatisfied with this decision and broke away from the main faction and announced that they would be willing to compromise with opposition parties (Reed, 2004). Driven by the scandals and the apparent discourse within the LDP, the opposition presented a non-confidence bill against the ruling government. As elections approached, the new faction broke away from the LDP and formed an alliance with several opposition parties (Kohno, 1997; Krauss and Pekkanen, 2011).

The LDP's fall from power cannot be explained by the length of time the party controlled the legislature or the state of the economy. Instead, damaging polit-

ical scandals and internal power struggles combined to create a unique environment where opposition forces were able to work together against the LDP. While the LDP still secured the most seats, over one-hundred forty more than the second largest party, they were unable to prevent the opposition parties from uniting to control the government. However, ten months after falling from power, the LDP formed a coalition to return to power, and three years later, the LDP was able to control the legislature and has remained a dominant force in Japanese politics.

7.6 Democratic Party

The United States has been a democracy for over two-hundred years. The first competitive democratic election was held late in 1778 to the early months of 1779, although universal male suffrage was not granted until 1870 with the passage of the Fifteenth Amendment and it is arguable that the United States was not a true democracy prior to that point. The United States is a presidential system with a bicameral legislature comprised of the House of Representatives, the lower chamber, and the Senate, the upper chamber. Elections to the House of Representatives are decided by plurality in single member constituencies every two years. Elections in the United States almost always comes down to a contest between two major parties (Nohlen, 2005*a*).

While two party systems like the United States can create an environment where two centrist parties compete for the median voter (Downs, 1957), the United States has experienced a number of periods where a single party has repeatedly maintained control of the House of Representatives. In this section I will consider the most recent period, from 1954 to 1992, when the Democratic Party held a dominant presence in the United States and won twenty consecutive elections before losing in 1994 (Nohlen, 2005*a*). What allowed the Democrats to take control, and then remain in power for so long? And what factors contributed to their loss in 1994?

The Democratic party was founded in 1828 and is one of the oldest political parties in the world. It can trace its roots back to the Republican Party, founded in 1792, which was one of the first political parties to contest elections in the United States (Kent, 1928). While the party has controlled the House for a number of long stretches, the longest stretch began in 1954. Like many of the cases discussed above, the Democrats' rise to power resulted from a major crisis; in this case, the Great Depression which began in 1929. The United States experienced its worst economic crisis in 1929 under the leadership of both a Republican President and Republican houses of Congress. The elections which followed showed a drastic shift in support for the Democrats and against the Republicans. For instance, from 1932 to 1936, the Democrats controlled over seventy percent of the seats in the House, a level of control which has not occurred since 1936. As a result of this shift, the Democrats would control the House from 1930 to 1992, only losing twice, in 1946 and 1952 (Nohlen, 2005*a*).

The midterm election of 1946 saw the Republicans win the House of Representatives for the first time in over fifteen years. Many attribute this election to Truman's poor approval rating (thirty-two percent) and massive labor strikes following the end of World War II (Campbell, 1985). 1946 also saw the largest negative economic downturn from the previous year during the Democrats' tenure in power. However, the resulting Congress refused to work with Truman which he used in the 1948 election to turn the tide against the Republicans and regain control of Congress (White, 1948). Four years later, in 1952, the United States' involvement in the Korean War and Truman's continued low approval led to Republican victories over the Presidency and both houses of Congress. Two years later however, the Democrats regained control of the House and continued to control if for nearly forty years (Nohlen, 2005*a*).

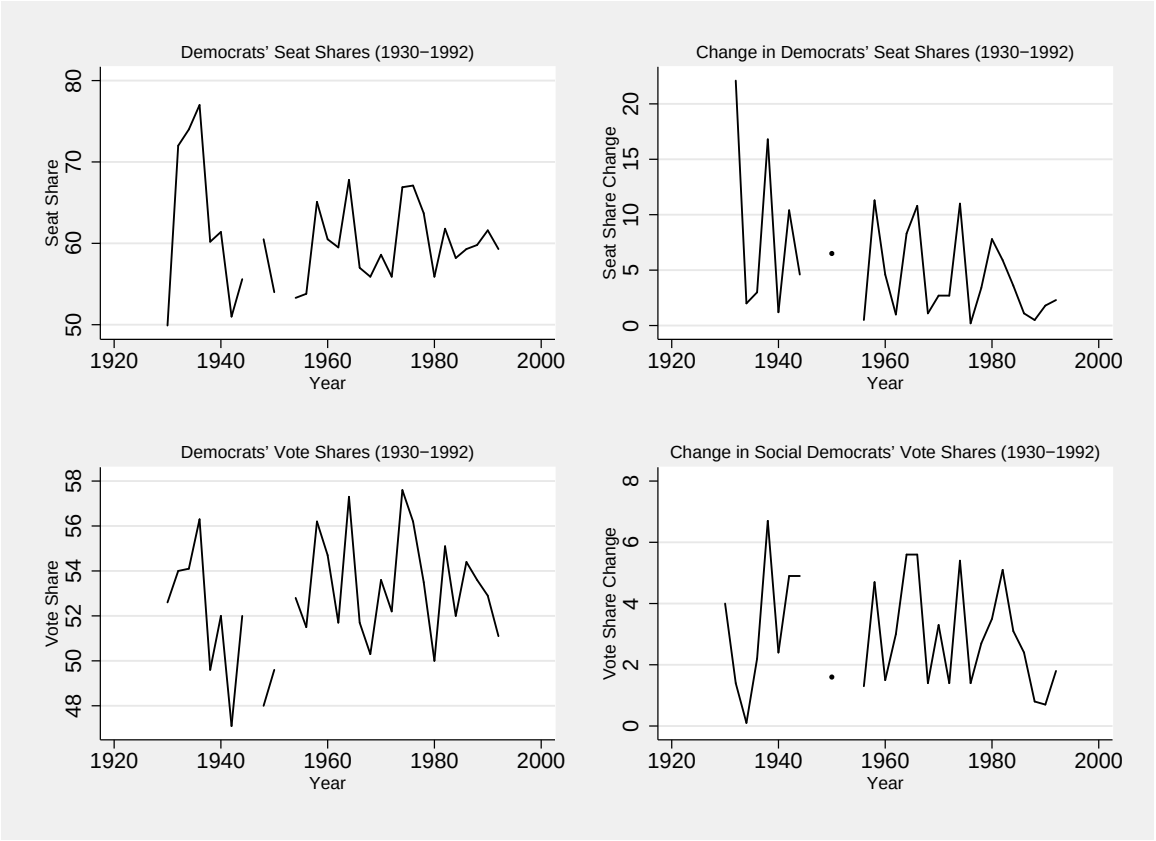

Figure 7.13: Democrat's Seat Shares and Vote Shares (1930 to 1992)

During this period, the seat shares of the Democratic Party fluctuated between just over fifty percent to almost eighty percent while the vote shares the party obtained ranged from just under forty-five percent to nearly sixty percent. During the uninterrupted years in power, on average, they won sixty percent of the seats and received fifty-three percent of the vote share. While the Great Depression was a crucial element of the Democrats wins in the early 1930s, it and the New Deal policies pushed through by President Roosevelt also had lasting effects on their electoral fortunes. For many years, the core of the Democrats support was in the south while the Republicans relied upon their stable support in the north. The Great Depression and the New Deal helped the Democrats maintain their strong base in the south and enabled them to compete against the Republicans for seats in the north (Ware, 2006).

To ensure they remained in power, the Democrats worked to build a coalition between their traditional southern supporters and the rapidly growing northern (and western) populations. Central to this coalition was the Democrats' focus on liberal, free-labor economic policies (Ware, 2006; Miller and Schofield, 2008). Furthermore, this period saw the rise of "big city Democrats" which worked to convert cities previous controlled by Republican political machines over to Democratic political machines. This strategy allowed the Democrats to compete in states which had previously been firmly held by Republicans.

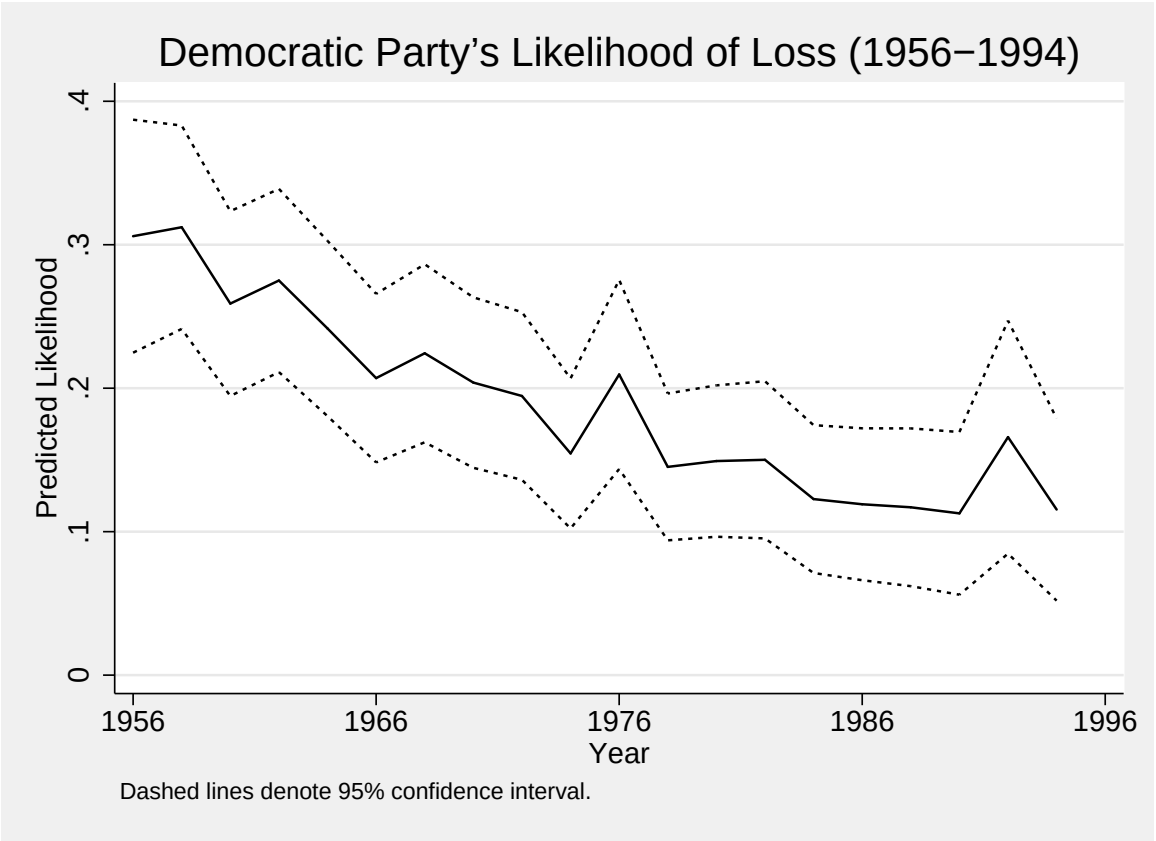

Figure 7.14: The Democratic Party's Likelihood of Losing an Election (1956 to 1994))

Between 1956 and 1994, the predicted likelihood that the Democratic Party would lose control of the House of Representatives declined from around 0.3 to just over 0.1. While there were occasional stretches where the predicted likelihood in-

creased, for instance in 1976, the variables considered in the analysis presented in Chapter 4 and 6 indicate that the party became more secure the longer it remained control of the United States' lower legislative chamber.

The United States saw its economy fluctuate from one year to the next, but rarely saw declining economic conditions during the years which the Democrats controlled the House. In fact, while the Democrats controlled the House, overall, the United States saw a large degree of growth in GDP per capita. Like many of the cases described previous, the Democratic Party survived the minor stretches of economic downturn. Furthermore, it was not economic conditions, but other factors which led to their loss in 1994.

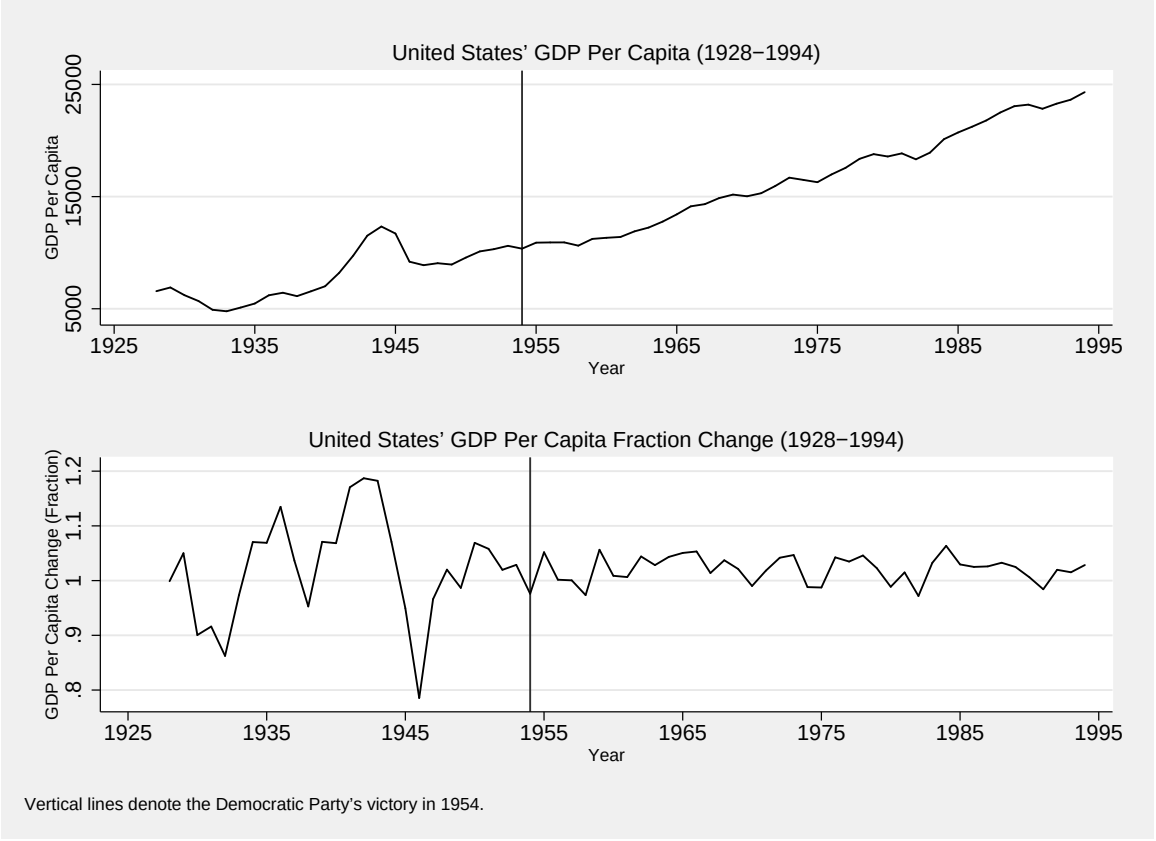

Figure 7.15: United States' GDP Per Capita (1930 to 1993)

During the 1950s and 1960s, the political strategies of Goldwater pushed conservative political activism in the south which helped to undermine support for Demo-

cratic presidential candidates in the southern states. However, while this shift did not immediately weaken the Democrats in Congress to the same extent, many have suggested that these strategies were crucial to the Republicans' eventual victories in the 1990s (Rae, 1994; Goldberg, 1995; Perlstein, 2009).

Furthermore, the successes of the Civil Rights Movement also worked to break southern support for the Democratic Party. Up until the 1960s, the continued and consistent support of southern states dictated the Democratic Party's position on both economic policies and civil rights issues. In fact, the success of Roosevelt's New Deal coalition has been attributed to its ability to focus on economic issues while suppressing social issues (Miller and Schofield, 2008). However, the passage of the Civil Rights Act in 1964 under a Democratic President and Congress worked to turn the south away from the Democrats and towards the Republicans (Rae, 1994; Starr, 1997; Ware, 2006; Miller and Schofield, 2008). This culminated near the end of the 1960s when Nixon, a Republican, won the presidency with strong support from the south. Over the next twenty years, while the Democrats continued the win House elections in the South, their support continued to wane, until they finally lost the House in 1994.

Like many of the cases described previously, the Democrats' rise to power arose from a crisis while their eventual loss resulted not from economic conditions, but other factors. The rise of conservative political activism and the opposition to the Civil Rights Movement combined to unseat the Democratic Party after forty years controlling the House. This shift continues to this day, with southern states staunchly supporting the Republican party and opposing the Democrats. It took the Democrats over ten years before they were able to once again take control of the House.

7.7 Conclusion

In summary, I have taken a closer look at five unique parties which controlled their national legislatures for extended periods of time. This chapter has served as a supplement to the empirical analysis presented in the previous chapters. The five unique cases discussed in this chapter offer a limited window to better understand party duration.

What's interesting is that the institutional structure of these countries is very diverse. These countries considered here represent parliamentary systems, presidential systems, and even hybrid systems. They incorporate different electoral rules and constituency types.

However, there are a number of important similarities. One of the most common elements shared between these parties are the circumstances which brought them into power. In four of the cases, the party's initial success can be attributed to either a major crisis or event. The INC won their first victory following India's independence; the DC came to power following the end of fascism in Italy; the LDP rose to prominence during the post World War II reconstruction in Japan; and the economic turmoil of the Great Depression was crucial to the Democrat's enormous victories in the 1930s.

Additionally, none of the parties showed major increases to either their seat share or vote share the longer they controlled the legislature. This comes as no surprise, given the discussion presented in Chapter 4 and Chapter 6 which showed that increasing party duration did not have a major effect on either variable. However, while some parties showed a general negative trend to the change in their seat share and vote share from one election to the next, this result was not consistent for each case. In the case of the INC, the party's seat share and vote share actually changed by greater values as they remained in power longer.

In Chapter 6, I argued that increasing the length of time that an incumbent party controlled the legislature could cushion a party from periods of economic turmoil. The analysis presented in that chapter showed that as party duration increased, the economic conditions must decline to worse and worse values for an incumbent party to lose an election. Congruent with those findings, none of the five parties considered in this chapter lost purely as a result of negative economic conditions. The SD lost as a result of shifting demographics and anti-immigration sentiments; the LDP's uninterrupted rule was broken by political scandals and internal conflict; the Democratic Party lost due to shifting allegiances and the Civil Rights Movement. While negative economic conditions partially explained the losses of the INC and DC, other factors also influenced their losses (unpopular legislation in the case of the INC and political scandals for the DC).

In fact, although most parties did not experience major periods of economic turmoil, some were able to weather economic storms. Scholars have previously noted that both the LDP and DC used their previous economic records to alleviate the concerns of voters. It is worth considering whether the long tenure of these parties influenced the positive economic conditions experienced during their long tenures.

While the cases considered here are interesting, there are many other parties which have also maintained long tenures in office. Although many of these parties can provide additional insights into understanding the effects of party duration on elections, it is beyond the scope of this project. However, the cases presented here offered a brief look at better understanding party duration.

CHAPTER 8
CONCLUSION

8.1 Dissertation Summary

For scholars interested in studying election outcomes, party duration, the length of time that an incumbent party controls the legislature, is a crucial element. I proposed that party duration not only affects the outcome of elections, but that it also affects the effect of other factors which scholars have theorized influence the outcome of elections – specifically, party duration conditions the effect of economic conditions on election outcomes. In this project, I have shown that increasing party duration decreases the likelihood that the incumbent party loses an elections and also that increasing party duration can insulate incumbent parties during periods of declining economic conditions.

In Chapter 3, I built upon the work done by numerous scholars and connected several different topics. In this chapter, I reviewed the relevant literature on political parties, electoral volatility and political stability, and the incumbent advantage. This chapter was primarily aimed at highlighting relevant works and laying the foundation for the analysis presented in subsequent chapters.

I then turned to the analysis of the effect of party duration on incumbent party loss. The first hypothesis I proposed was that incumbent parties would experience a decreasing hazard rate the longer they remained in power. In Chapter 4 and Chapter 6, I showed that increasing party duration decreases the likelihood that an incumbent party loses an election, controlling for various other factors. Incumbent parties were less likely to lose an election the longer they controlled the legislature, given they had not lost an election to that point. Figure 4.1, 6.1, and 6.2, all demonstrated the negative effect that increasing party duration has on the likelihood of incumbent party loss.

Additionally, I also proposed two mechanisms by which party duration can influence the likelihood an incumbent party loses an election in Chapter 3. The first was that increasing party duration would increase the seat share and vote share obtained by the winning party. The second mechanism proposed was that increasing party duration decreases the change in seat share and vote share from one election to the next. The evidence I presented demonstrated that incumbent parties do not become more secure the longer they control the legislature by increasing their seat shares or vote shares. Instead, I presented evidence that incumbent parties become more secure over time by better maintaining their seat shares and vote shares from one election to the next. As party duration increases, the seat share and vote share that the winning party obtains changes by less from one election to the next. While Figures 4.2, 4.4, 6.4, 6.5, 6.9 and 6.10 all provided evidence counter to the first proposed mechanism, Figures 4.3, 4.4, 6.7, 6.8, 6.11, and 6.12 supported the second mechanism.

While the empirical analysis presented in Chapter 4 accounted for the proposed relationship between party duration and the state of the economy, Chapter 5 and Chapter 6 took a more detailed look at this relationship. In Chapter 5, I reviewed various important aspects of economic voter theory. Scholars of economic voter theory have shown that as economic conditions decline, incumbent parties are more likely to lose an election, while they are less likely to lose during periods of economic prosperity. I also introduced two additional hypotheses in this chapter – that as party duration increases, incumbent parties will experience a decreased hazard rate during periods of economic turmoil; and that as party duration increases, economic conditions will have less of an effect on the outcome of elections.

Chapter 6 expanded on the analysis presented in Chapter 4 and examined the effect of the interaction between party duration and economic conditions, measured by the annual change in GDP per capita as a fraction of the previous year's GDP

per capita, on my independent variables. In Figures 6.1 and 6.2, I presented evidence that party duration conditions the effect of the economy on elections. Specifically, I showed for two parties facing identical economic circumstances, holding all other factors constant, the party which has controlled the legislature longer will be less likely to lose an election.

Furthermore, in Figure 6.3, I presented evidence of the insulating effect of increasing party duration through my economic threshold plots. I described the economic threshold as the point where the change from the previous year's economy must reach for the likelihood of incumbent party loss to equal the likelihood the incumbent party did not lose (the likelihood of incumbent party loss equals 0.5). Figure 6.3 showed that as party duration increases, economic growth from the previous year needs to reach smaller and smaller values for the likelihood of incumbent party loss to equal 0.5. This figure also showed that this effect is initially very steep, but gradually the slope declines.

Additionally, in Chapter 6, I took another look at the two proposed mechanisms by which party duration influences the likelihood that an incumbent party loses an election. While the evidence presented indicated that the change in winning party seat share and vote share better explained the decreased likelihood of incumbent party loss, for both mechanisms, I showed that party duration conditions the effect of the economy. Similar to the earlier analysis, for two parties facing identical economic conditions, the party which has controlled the legislature longer is predicted to secure a greater seat share and vote share, and is also predicted to experience smaller changes in both seat share and vote share from one election to the next.

Finally, in Chapter 7, I considered five distinct cases in which incumbent parties maintained long tenures in control of their respective legislatures. The cases considered were the Social Democrats in Denmark (the largest party in power from 1924 to 2001), the Indian National Congress Party (in control of the Lok Sabha from

1952 to 1977), the Christian Democratic Party of Italy (the majority party in the Chamber of Deputies from 1948 to 1992), Japan's Liberal Democratic Party (which controlled Japan's lower legislative chamberfrom 1958 to 1993), and the Democratic Party in the United States (which only lost control of the House of Representatives twice between 1930 and 1993). While these countries and parties were very diverse, they also shared a number of similar characteristics. Four of the parties initially rose to power during periods of crisis. Furthermore, in line with the findings presented in Chapter 6, none of the parties which I considered was removed from power purely due to declining economic conditions. In fact, two of the cases considered represented parties which scholars have noted used previous economic successes to remain in control of their respective legislatures during periods of economic turmoil.

8.2 Future Plans

Going forward, there are a number of ways I intend to expand on the analysis presented here. First and foremost, I plan to expand my dataset to include variables for divided government, control of the chief executive, the number of parties, and voter participation. Furthermore, I plan to extend the time frame of analysis for each country to the present. As a result of the time when each of the databooks used to compile the dataset were published, the election coverage for some regions is more current than others. For instance, there are over ten years of elections in Africa for which I do not have any election data. Expanding the the coverage and including more variables is the first step to expand this project.

Additionally, the analysis presented here only tells part of the story. While scholars of economic voter theory have shown how economic conditions influence election outcomes, numerous scholars have argued that election outcomes also influence economic conditions. For instance, Alesina and Rosenthal (1995) argued that maintaining the same party in government leads to smaller economic fluctuations and

more stable economies because economic policies and plans are known and consistent. Alesina et al. (1996) found, studying a cross-national sample of one-hundred-thirteen countries over thirty-two years, countries with higher levels of government instability experience lower economic growth. Similar results have been found regarding debt and external borrowing (Ozler and Tabellini, 1991) and inflation (Cukierman, Edwards and Tabellini, 1989).

I intend to build on this project and connect to the work done by these scholars by considering how increasing party duration influences a country's economic conditions. However, this approach requires connecting to the work done by economists who have studied factors which influence GDP growth rates. Furthermore, given the complex relationship and the multiple dependent variables, this empirical analysis will likely need to be framed as a structural model where party duration and other independent variables influence a country's economic conditions (the first dependent variable) and then party duration, the state of the economy, and other independent variables influence either the likelihood of incumbent party loss, or my other measures for the outcome of elections.

Furthermore, over the years, scholars have proposed a number of different variables which influence election outcomes. These include factors like the effective number of parties (Sartori, 1976), ethno-linguistic fractionalization (ELF) (Tavits, 2005), and diversionary uses of force (Mueller, 1970; Russett et al., 1990; Morgan and Bickers, 1992). In future projects, I plan to examine how party duration affects the effect of other important concepts to better understand the impact of party duration on election outcomes.

One of the most interesting elements which I intend to study lies at the intersection of the comparative politics subfield and the international relations subfield – the relationship between diversionary uses of force and party duration on the outcome of elections. Similar to the analysis of the relationship between party duration

and economic voting, I intend to examine whether another causal relationship exists between party duration and diversionary uses of force. Specifically, does the length of party duration affect the effect of diversionary uses of force on elections and the frequency of diversionary uses of force.

International relations scholars have established that diversionary uses of force are meant to distract the public from domestic turmoil to benefit the government. However, if, as many have suggested, politicians are primarily concerned with reelection, then the political leaders should be most inclined to utilize diversionary uses of force when they are worried about their chances of losing an election. Therefore, since increasing party duration decreases the likelihood of incumbent party loss, incumbent parties should feel more secure and become less likely to utilize diversionary uses of force as party duration increases. While studying the relationship between party duration and diversionary uses of force and various other factors is outside the scope of this project, going forward, this is one of the major questions I intend to tackle.

8.3 Greater Impact

While I have shown that party duration is a crucial variable for political scientists interested in elections to consider, there are two major implications for democratic elections around the world. The first builds on the idea that elections are widely held as a necessary element of democracy and serve as a means for the electorate to hold elected officials accountable. However, I have shown that increasing party duration can insulate incumbent parties from at least one factor which has been shown to affect incumbents detrimentally – periods of economic turmoil. In fact, one of the most shocking findings of this project is that the longer a party has controlled the legislature, the more accepting the electorate becomes of periods without economic growth. This revelation raises major questions regarding the behavior of the

electorate and the accountability of elected governments.

However, the second implication draws a more positive conclusion for political parties and political figures. While much of the literature on economic voting has found evidence that voters are largely myopic (Kietiet, 1983; Markus, 1988), the findings shown here suggest that incumbent parties are rewarded for years of service and prosperity. Rather than only looking at the most recent economic conditions, incumbent parties, as a result of their long tenures, and are given some degree of forgiveness for a sudden downturn. Given the work by scholars like Alesina and Rosenthal (1995) who have argued that maintaining the same party in power leads to predictable economic policies which can lead to positive economic growth, this is an important finding for countries which suddenly face unexpected economic downturns.

Of course, as I stated above, truly understanding the relationship between party duration, economic conditions, and election outcomes requires additional analysis which is outside the scope of this current project. While I have theorized and presented evidence that electorates behave as risk adverse agents, it is also possible that this effect is also influenced by a positive influence which increasing party duration might have on economic conditions.

While there is still much work which needs to be done to understand both the academic and global impacts of party duration, this project has served as an important step in that direction. The analysis and theory presented here and the data compiled for this project have highlighted the importance of party duration and have established a foundation for future projects.

APPENDIX A
SUPPLEMENTAL TABLES

A.1 Chapter 2

Table A1: Bivariate Logit Results for the Likelihood of Incumbent Party Election Loss

Variable	Coefficients
Party Duration	-0.028 ***
	(0.006)
Constant	-0.148 *
	(0.08)
Observations	1,196

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A2: Bivariate Logit Results for the Likelihood of Incumbent Party Election Loss - Over Time

Variable	1800-1942	1942-1974	1975-2012
Party Duration	-0.044 **	-0.044***	-0.027 ***
	(0.019)	(0.015)	(0.007)
Constant	-0.330 **	-0.312 *	0.170
	(0.164)	(0.179)	(0.113)
Observations	333	323	544

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A3: Bivariate Logit Results for the Likelihood of Incumbent Party Election Loss - Unicameral or Bicameral Legislature

Variable	Unicameral Legislature	Bicameral Legislature
Party Duration	-0.027 ***	-0.028 ***
	(0.009)	(0.008)
Constant	0.195	-0.317 ***
	(0.131)	(0.102)
Observations	376	820

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A4: Bivariate Logit Results for the Likelihood of Incumbent Party Election Loss - Presidential or Parliamentary

Variable	Presidential	Parliamentary	Mixed
Party Duration	-0.014	-0.037 ***	-0.024
	(0.011)	(0.009)	(0.017)
Constant	-0.394 ***	-0.086	0.159
	(0.142)	(0.110)	(0.215)
Observations	385	651	160

Variable	Presidential	Non-Presidential	Parliamentary	Non-Parliamentary
Party Duration	-0.018 **	-0.036 ***	-0.035 ***	-0.014
	(0.009)	(0.009)	(0.008)	(0.011)
Constant	-0.223 *	-0.086	-0.032	-0.394 ***
	(0.118)	(0.110)	(0.097)	(0.142)
Observations	545	651	881	385

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A5: Bivariate Logit Results for the Likelihood of Incumbent Party Election Loss - Electoral Rules

Variable	Plurality	Proportional Rep.	Both
Party Duration	-0.03 ***	-0.031 ***	0.001
	(0.012)	(0.008)	(0.018)
Constant	-0.267 **	-0.143	0.525 **
	(0.127)	(0.119)	(0.259)
Observations	530	551	92

Variable	Plurality	Non-Plurality	Proportional Rep.	Non-Prop. Rep.
Party Duration	-0.021 **	-0.031 ***	-0.027 ***	-0.03 ***
	(0.01)	(0.008)	(0.007)	(0.012)
Constant	-0.182	-0.143	-0.041	-0.267 **
	(0.111)	(0.119)	(0.106)	(0.127)
Observations	622	551	643	530

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A6: Bivariate Logit Results for the Likelihood of Incumbent Party Election Loss - Constituency Types

Variable	Single Member	Multi-Member	National List
Party Duration	-0.016	-0.045 ***	-0.014
	(0.013)	(0.009)	(0.047)
Constant	-0.526 ***	0.0138	-0.262
	(0.155)	(0.118)	(0.543)
Observations	385	573	27

Variable	Single & Multi	Single & National	Multi & National	All Types
Party Duration	0.022	0.047	-0.009	0.065
	(0.024)	(0.053)	(0.017)	(0.105)
Constant	0.01	0.516	-0.095	-0.002
	(0.271)	(0.416)	(0.286)	(0.846)
Observations	85	45	82	10

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A7: Bivariate Logit Results for the Likelihood of Incumbent Party Election Loss - Constituency Types (Alternative)

Variable	Single Member	Non-Single Member	Multi-Member
Party Duration	-0.007	-0.038 ***	-0.033 ***
	(0.01)	(0.008)	(0.007)
Constant	-0.357 ***	-0.029	-0.015
	(0.124)	(0.107)	(0.1)
Observations	505	672	730

Variable	Non-Multi-Member	National List	Non-National List
Party Duration	-0.013	-0.007	-0.032 ***
	(0.012)	(0.014)	(0.007)
Constant	-0.404 ***	0.097	-0.174 **
	(0.138)	(0.211)	(0.088)
Observations	447	114	1033

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A8: Bivariate Logit Results for the Likelihood of Incumbent Party Election Loss - Majority or Non-Majority Government

Variable	Majority Government	Non-Majority Government
Party Duration	-0.032 ***	-0.029 ***
	(0.011)	(0.007)
Constant	-0.412 ***	0.109
	(0.13)	(0.105)
Observations	520	654

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A9: Multivariate Logit Results for the Effect of Party Duration and Economic Conditions on Incumbent Party Loss

Variables	
Party Duration - Centered	-0.035 ***
	(0.007)
GDP Change (Fraction) - Centered	-4.386 ***
	(1.216)
Party Duration * GDP Change (Fraction)	-0.43 ***
	(0.142)
Constant	-0.401 ***
	(0.063)
Observations	1,104

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

APPENDIX B
SUPPLEMENTAL FIGURES

B.1 Chapter 2

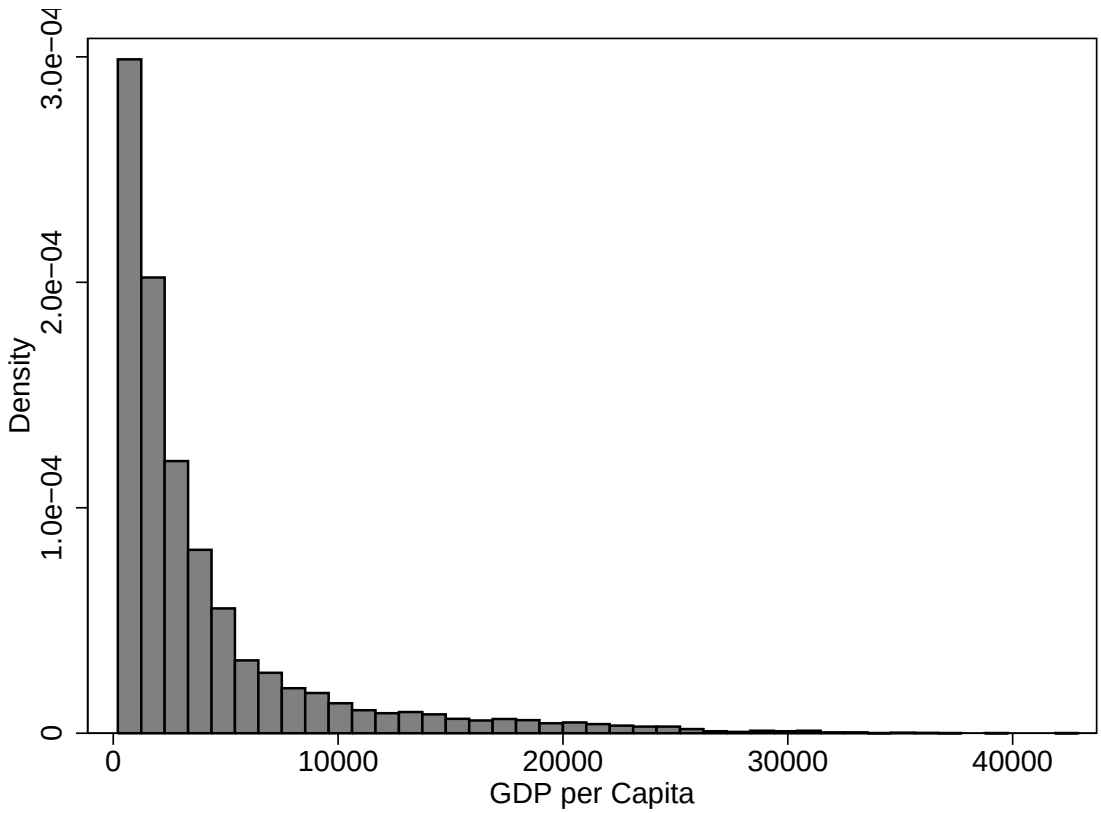

Figure B1: Histogram of GDP Per Capita.

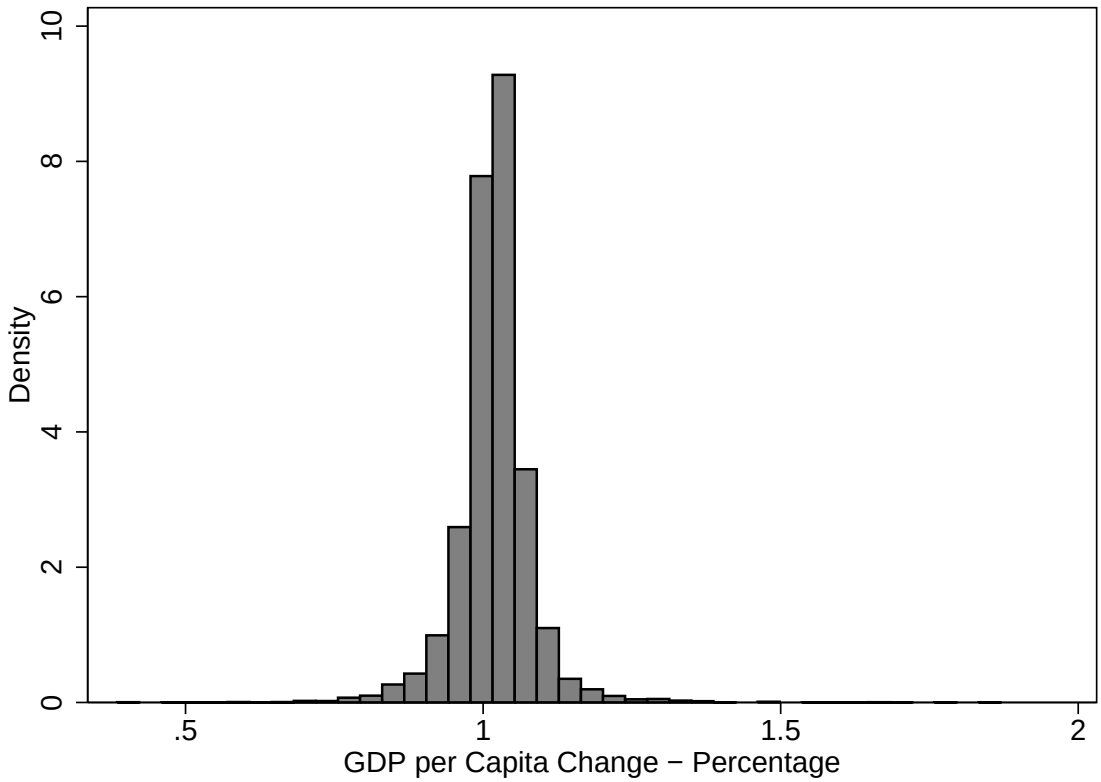

Figure B2: Histogram of GDP Per Capita Change - Fraction.

B.2 Chapter 4

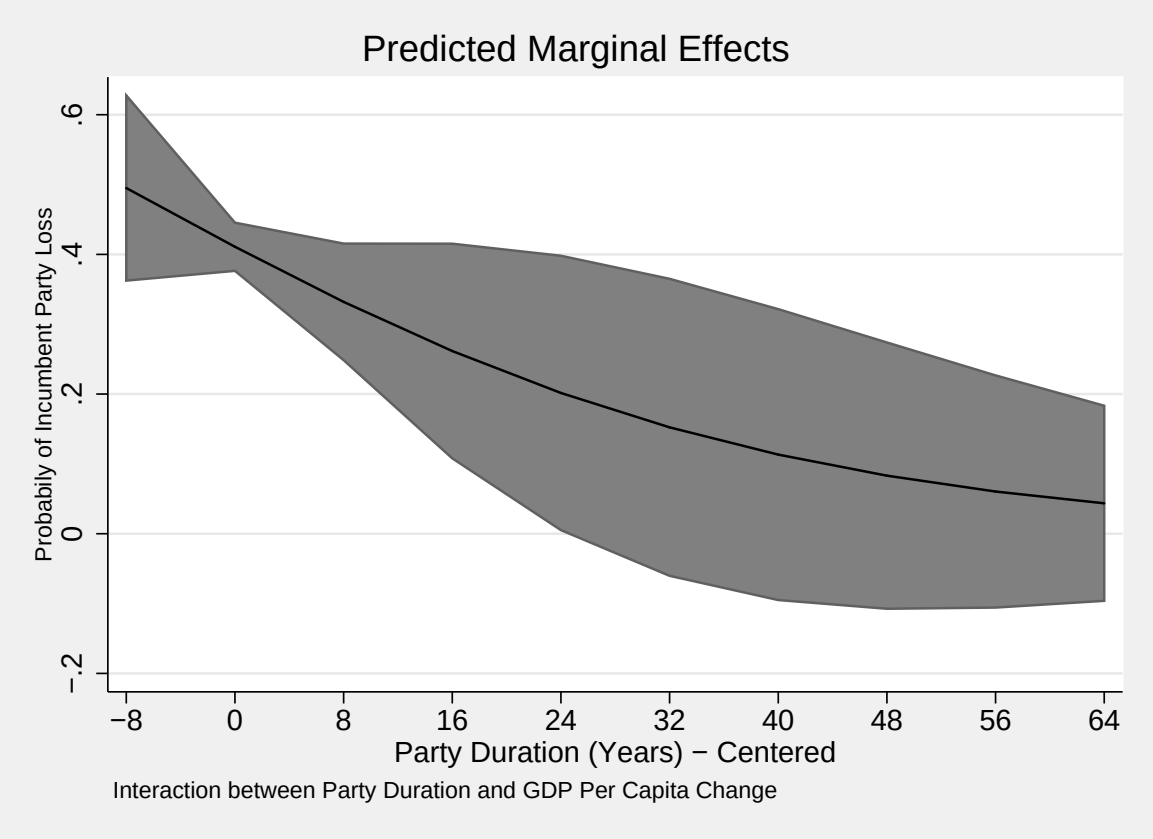

Figure B3: Predicted Marginal Effects (With 95% Confidence Intervals) - Full Sample.

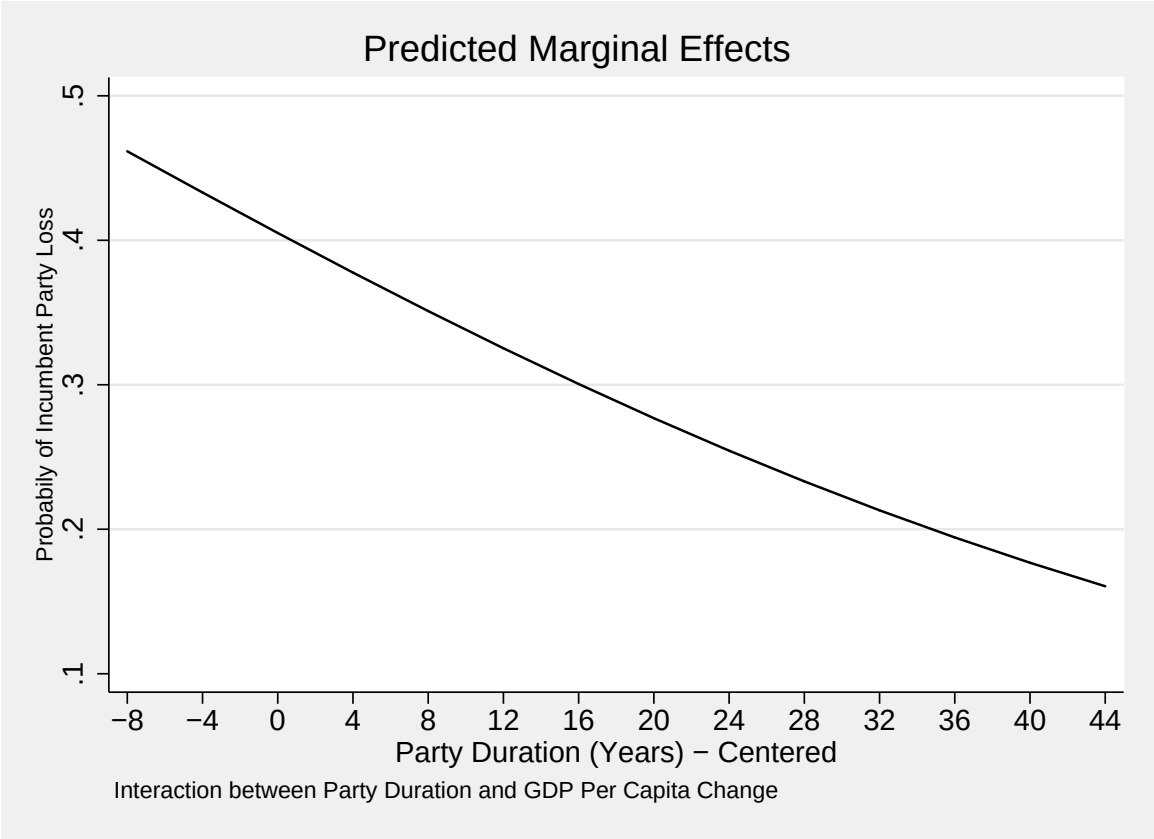

Figure B4: Predicted Marginal Effects - Party Duration <55 Years.

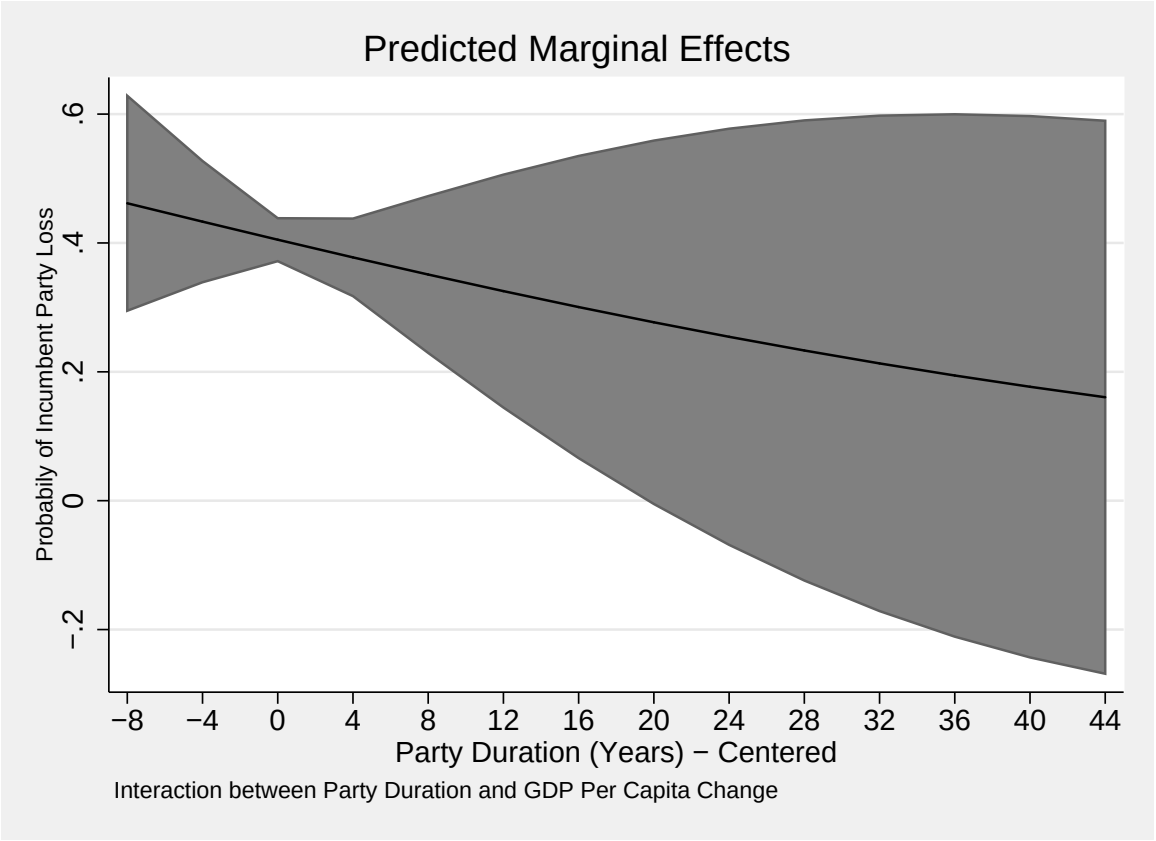

Figure B5: Predicted Marginal Effects (With 95% Confidence Intervals) - Party Duration <55 Years.

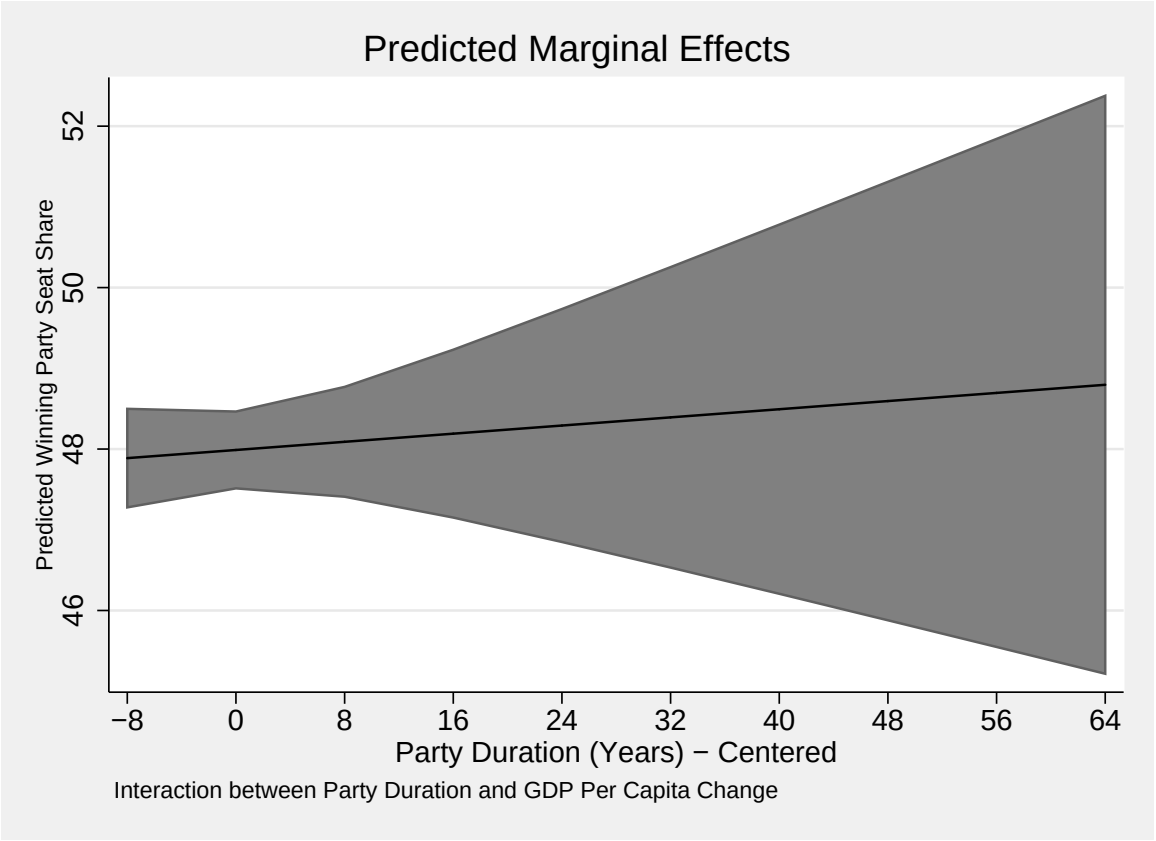

Figure B6: Predicted Marginal Effects (With 95% Confidence Intervals) - Full Sample.

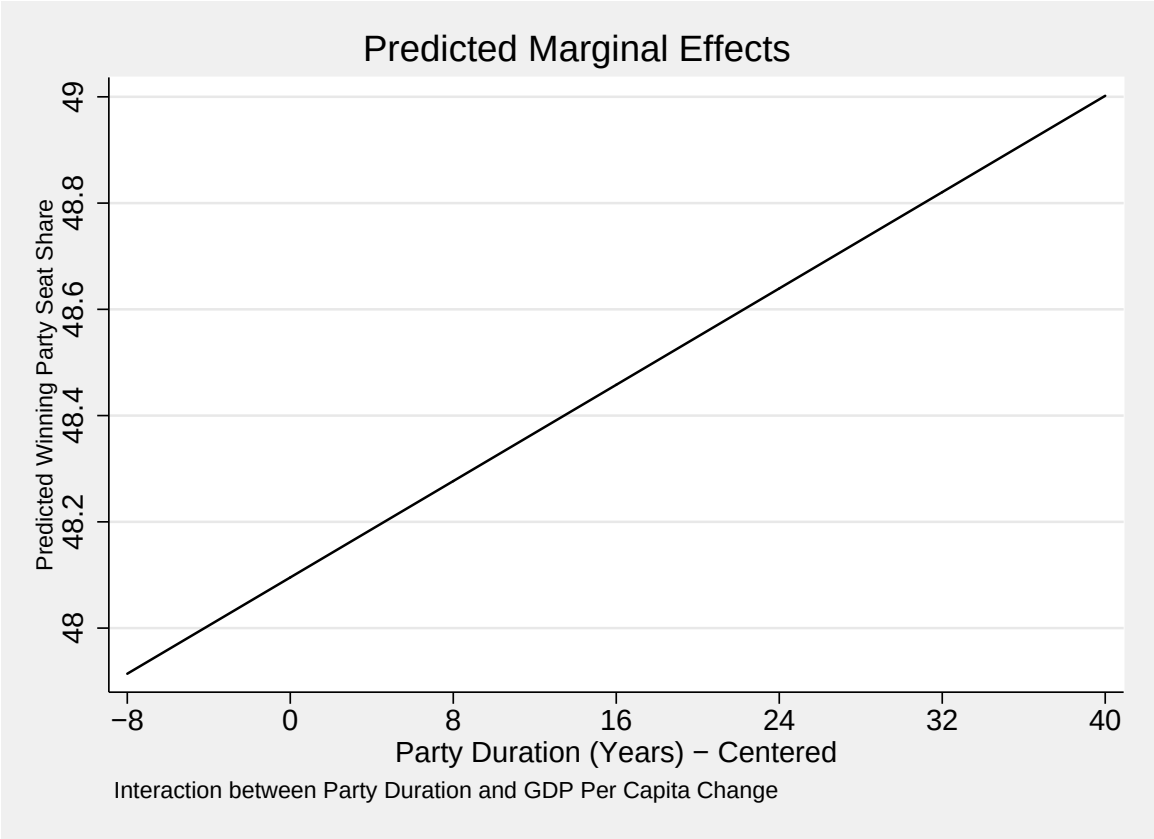

Figure B7: Predicted Marginal Effects - Party Duration <55 Years.

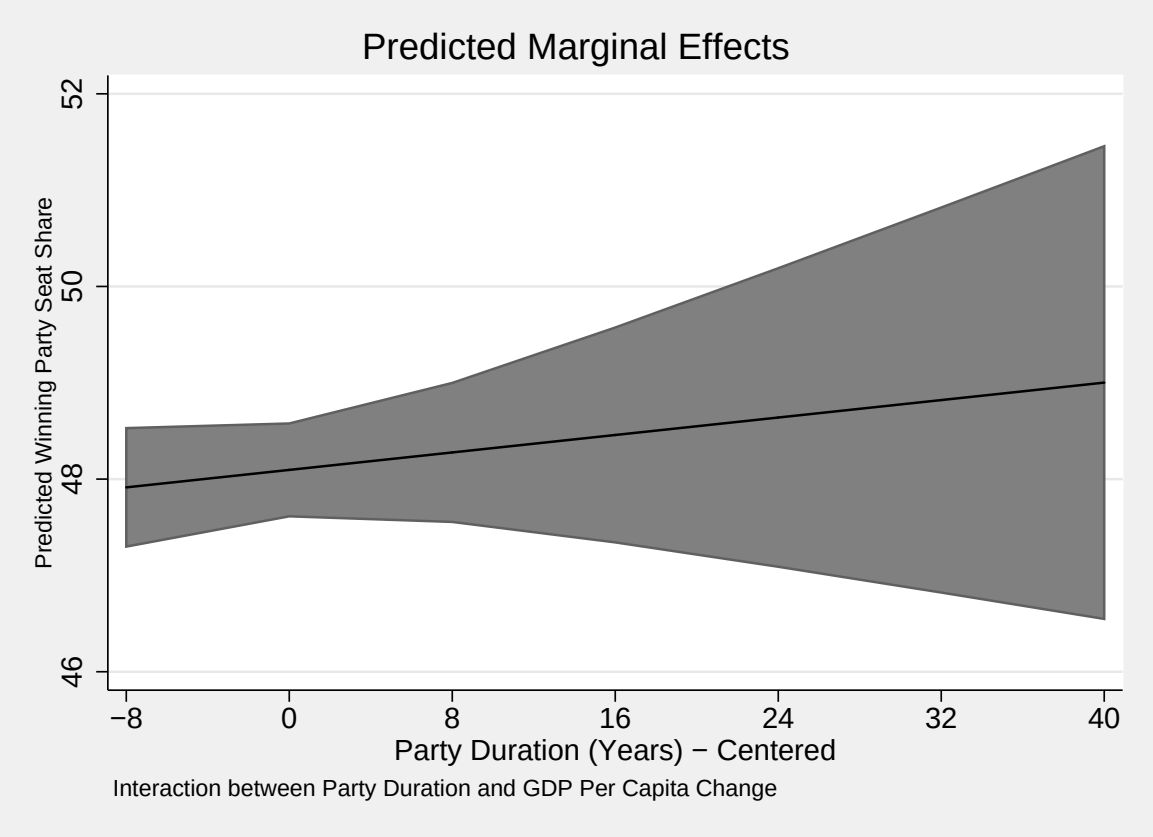

Figure B8: Predicted Marginal Effects (With 95% Confidence Intervals) - Party Duration <55 Years.

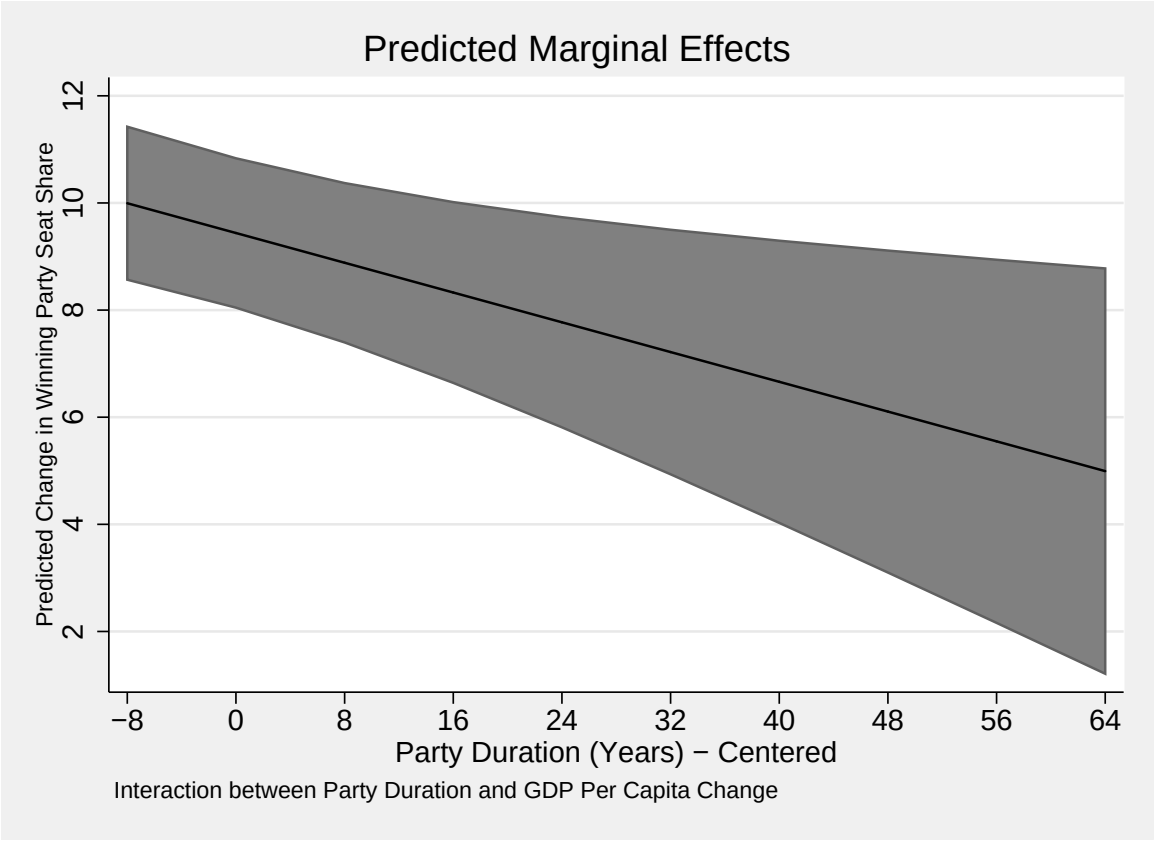

Figure B9: Predicted Marginal Effects (With 95% Confidence Intervals) - Full Sample.

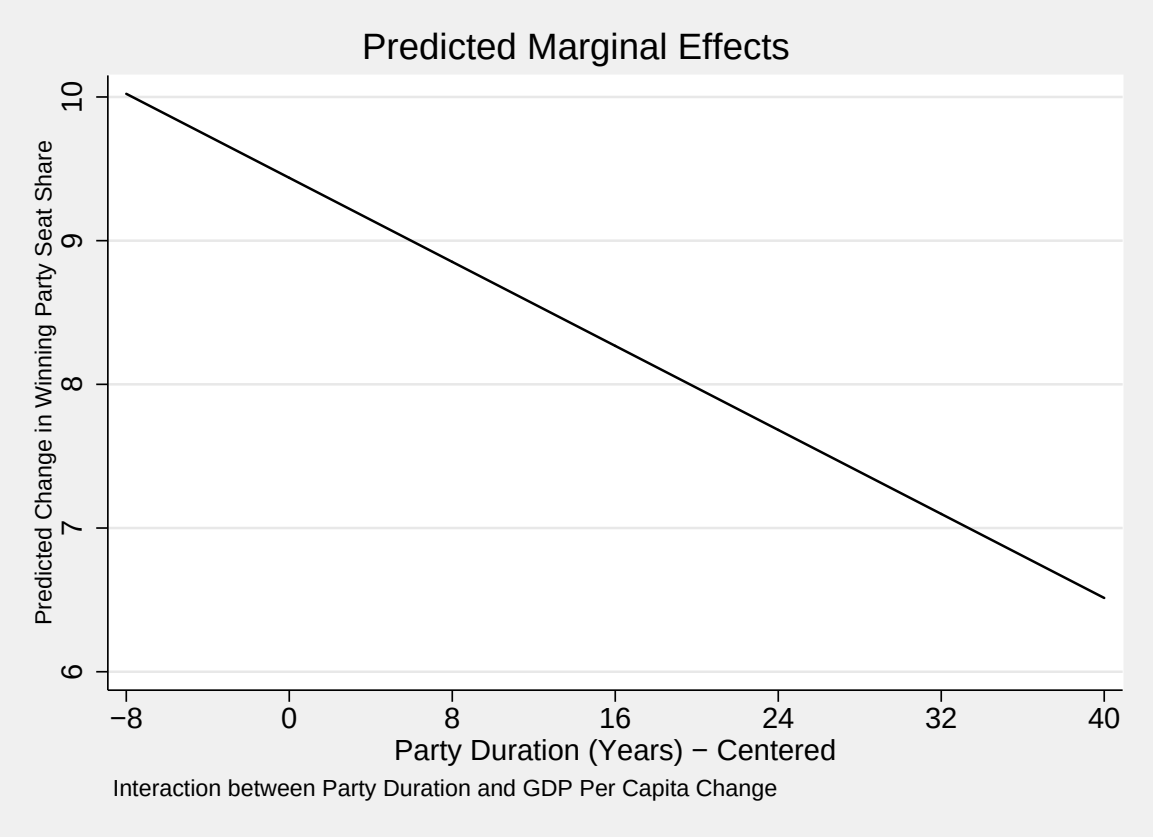

Figure B10: Predicted Marginal Effects - Party Duration <55 Years.

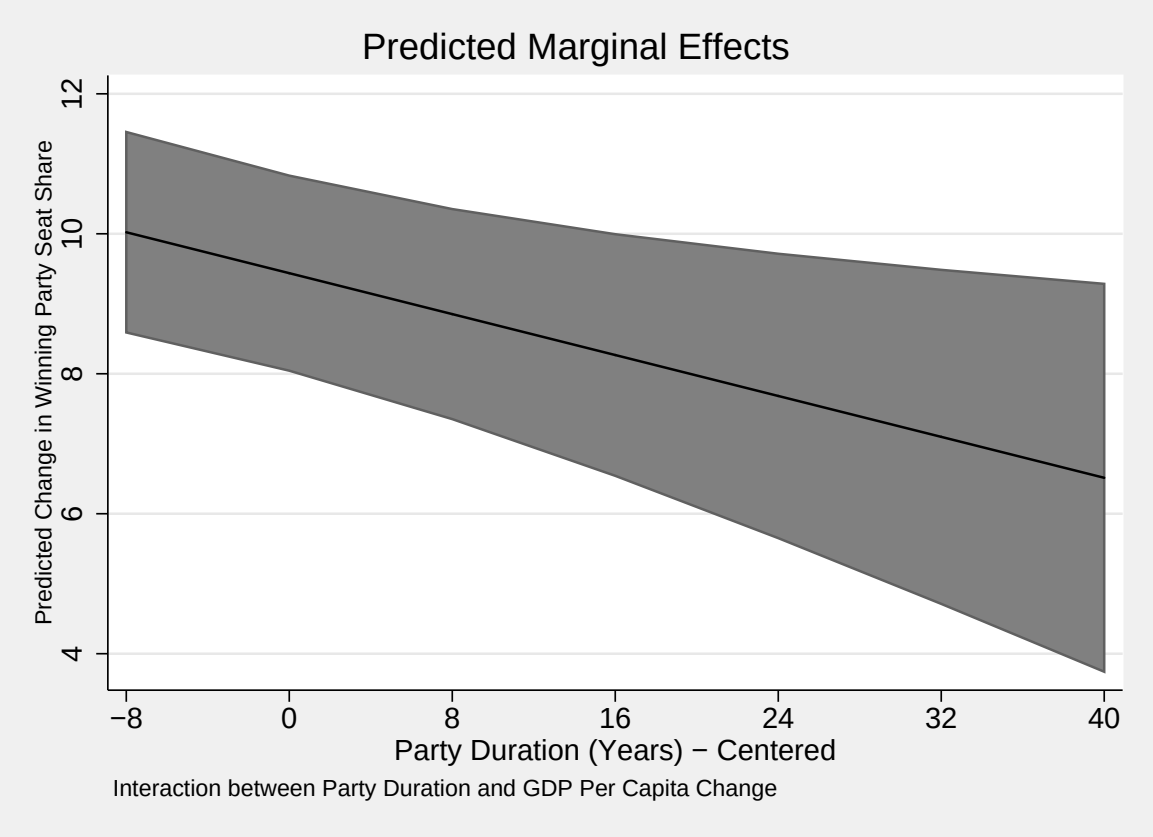

Figure B11: Predicted Marginal Effects (With 95% Confidence Intervals) - Party Duration <55 Years.

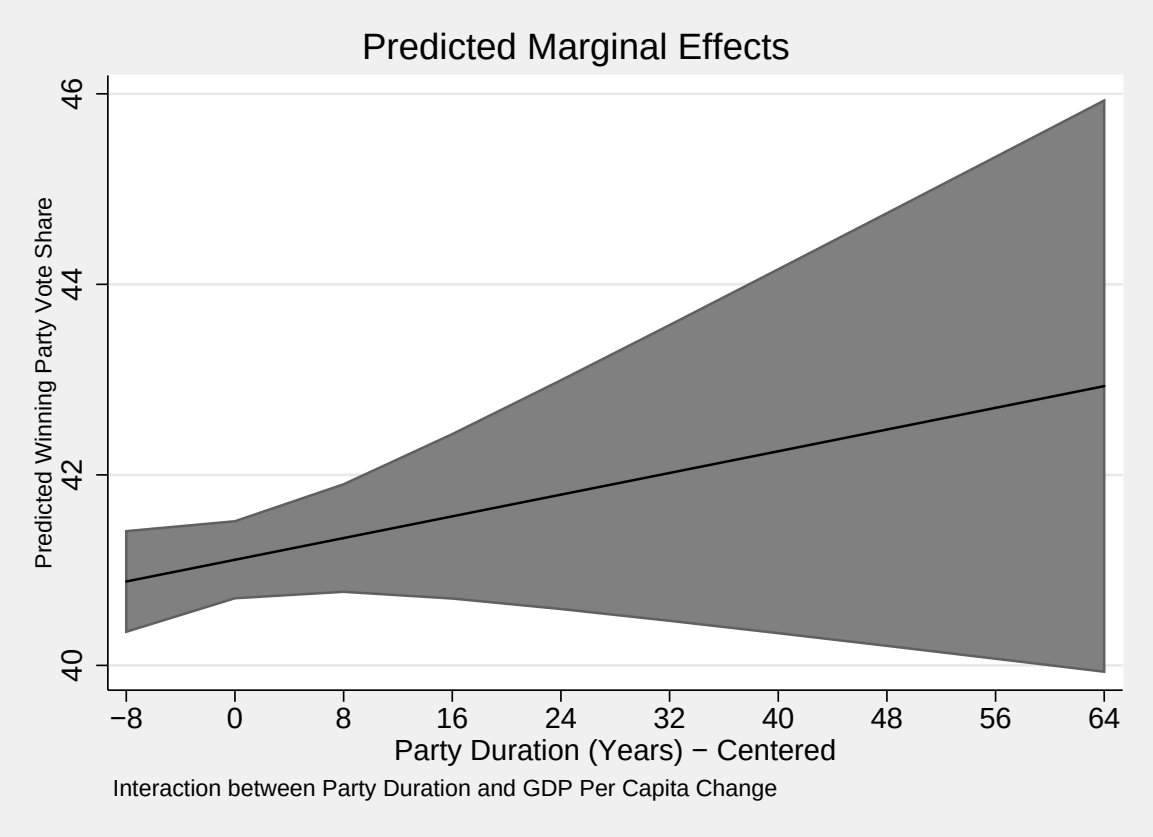

Figure B12: Predicted Marginal Effects (With 95% Confidence Intervals) - Full Sample.

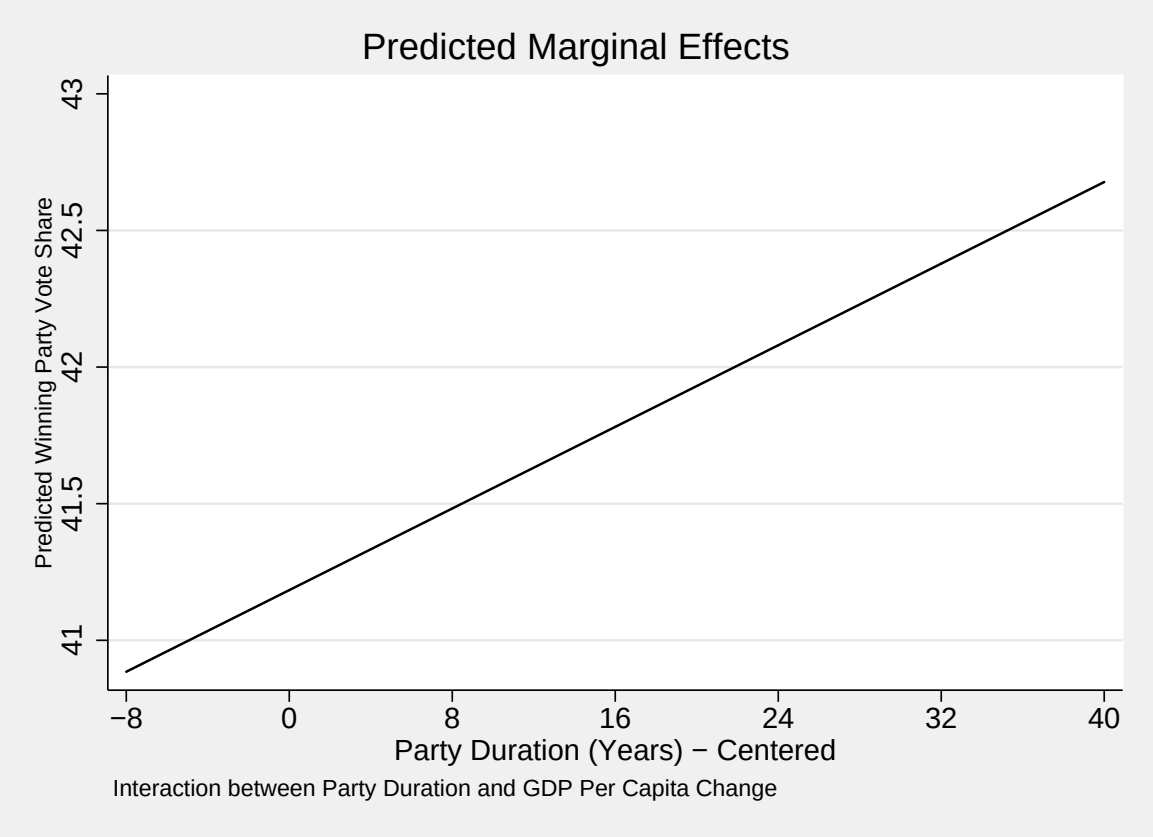

Figure B13: Predicted Marginal Effects - Party Duration <55 Years.

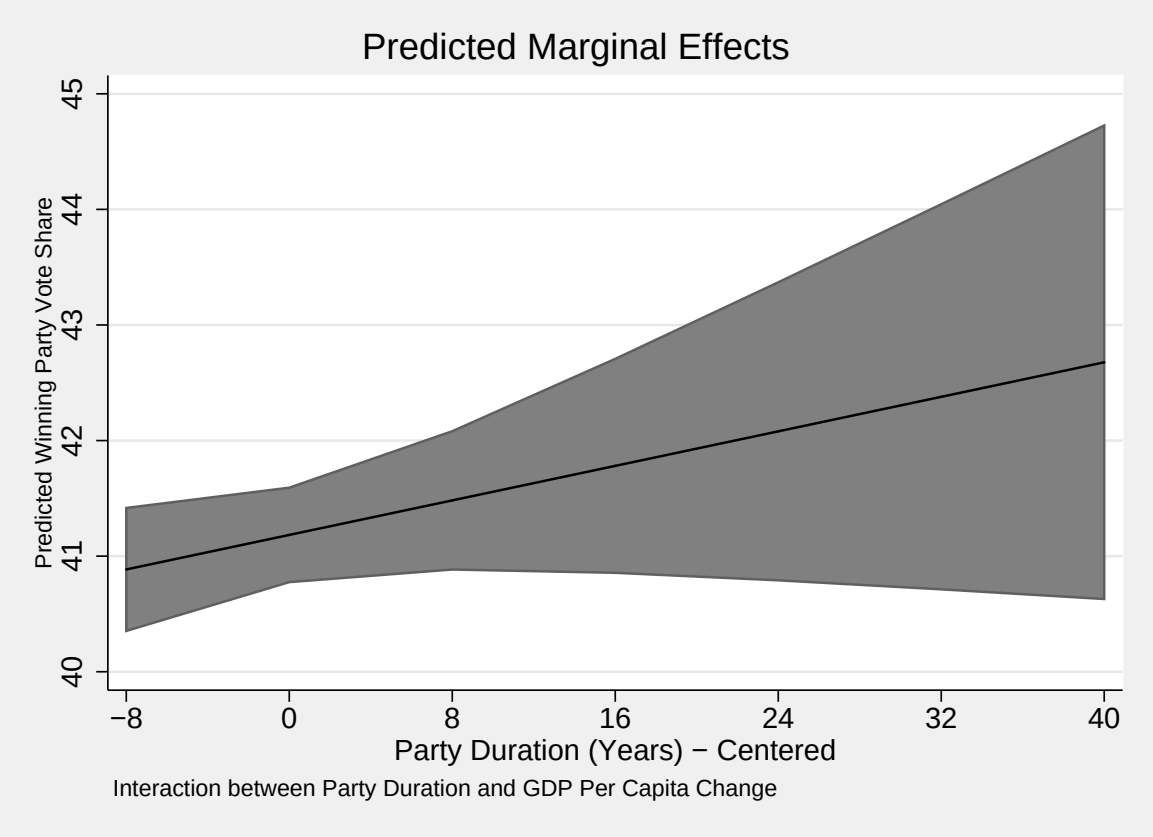

Figure B14: Predicted Marginal Effects (With 95% Confidence Intervals) - Party Duration <55 Years.

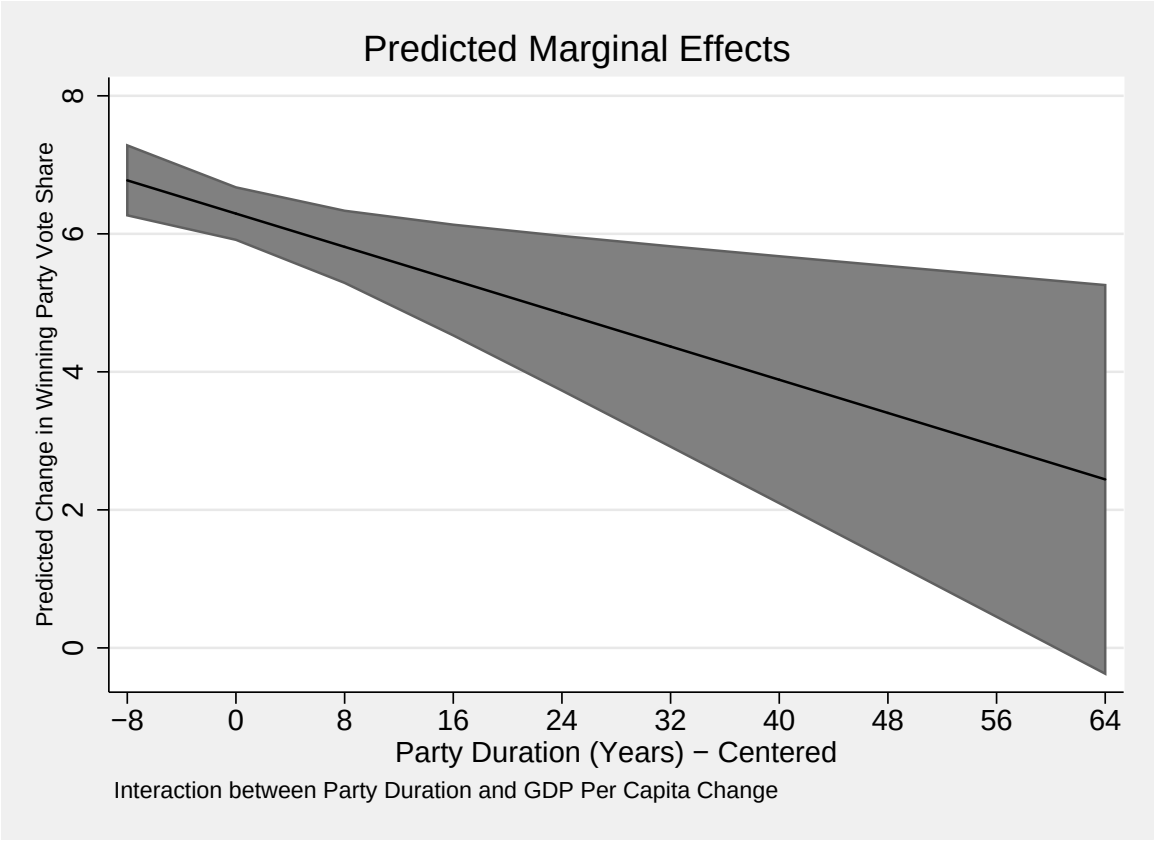

Figure B15: Predicted Marginal Effects (With 95% Confidence Intervals) - Full Sample.

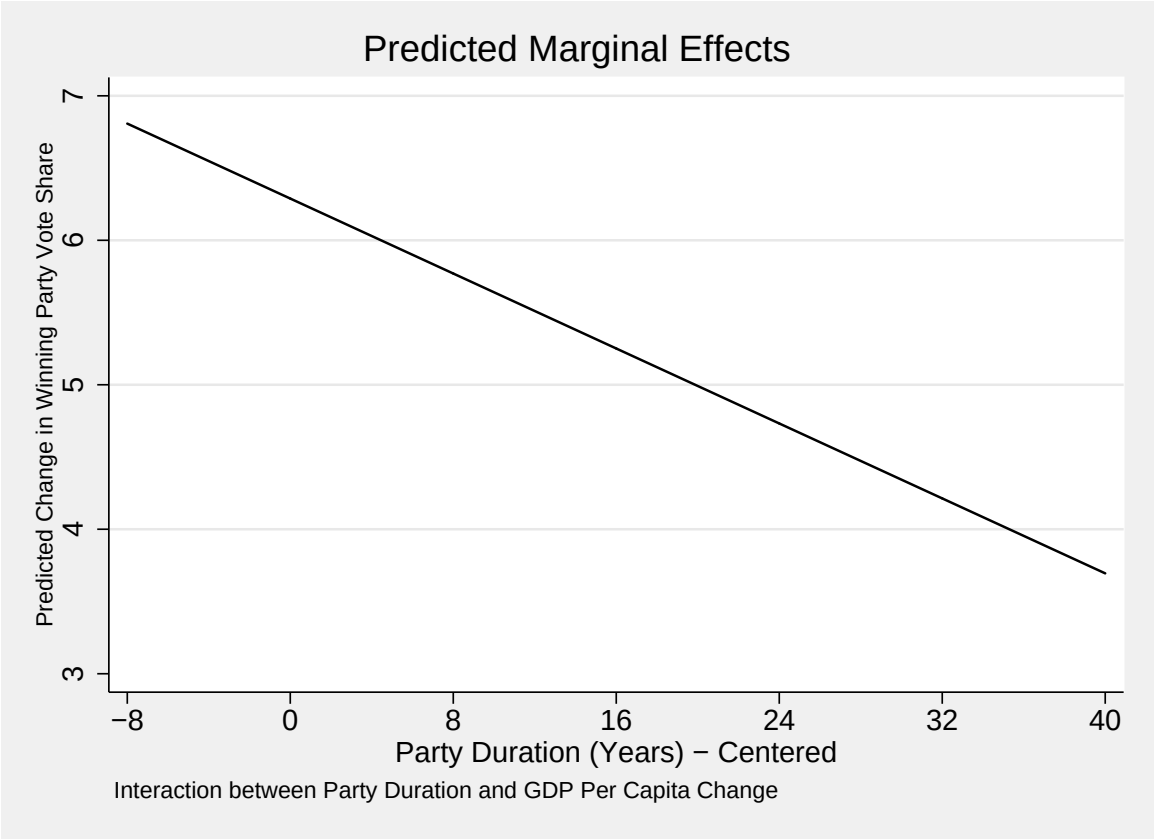

Figure B16: Predicted Marginal Effects - Party Duration <55 Years.

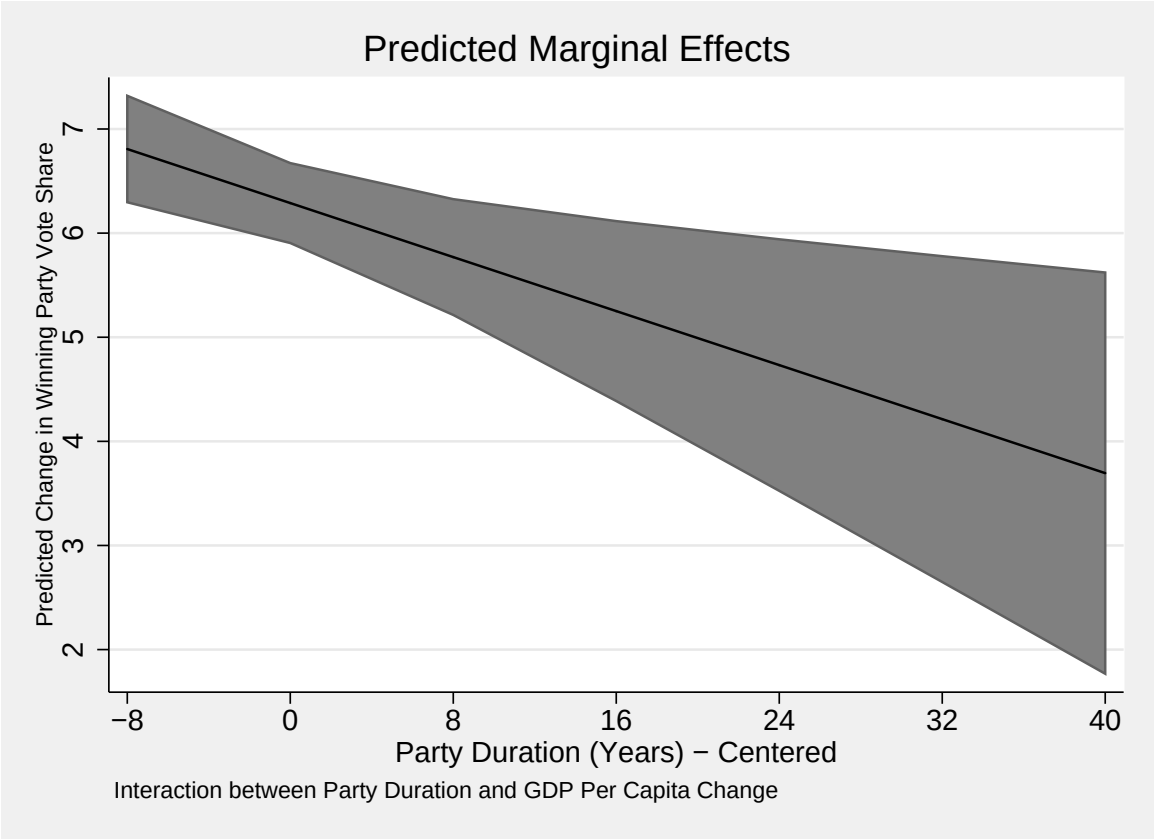

Figure B17: Predicted Marginal Effects (With 95% Confidence Intervals) - Party Duration <55 Years.

B.3 Chapter 6

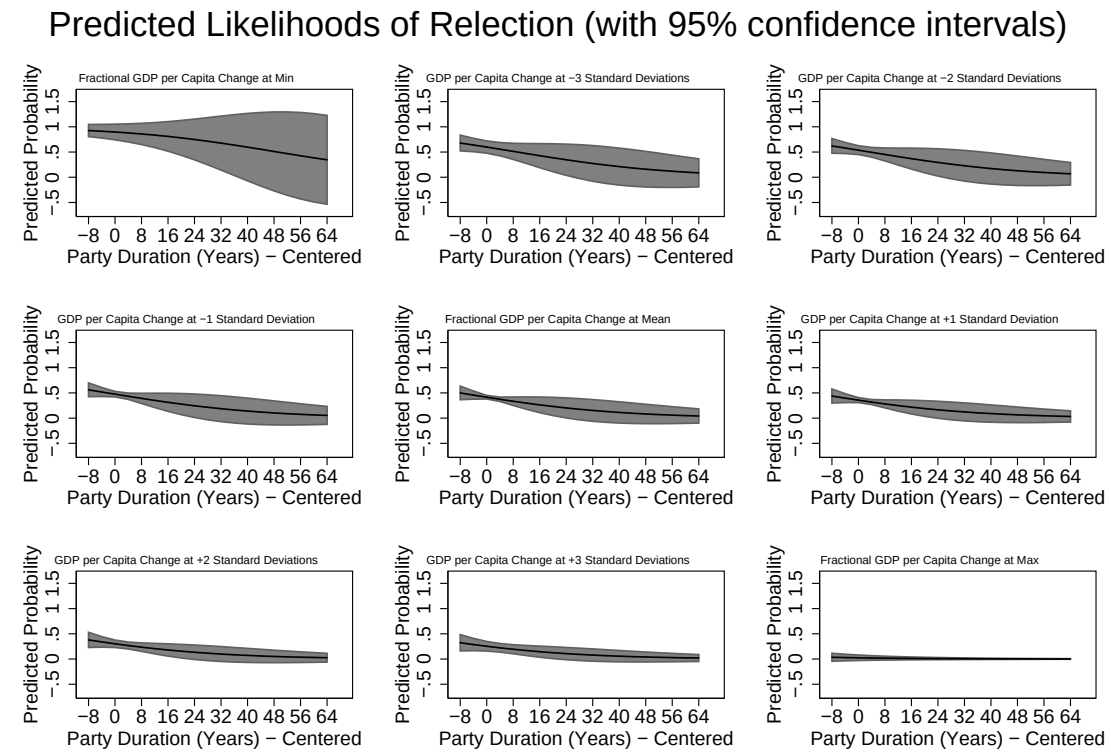

Figure B18: Predicted Marginal Effects - Full Sample

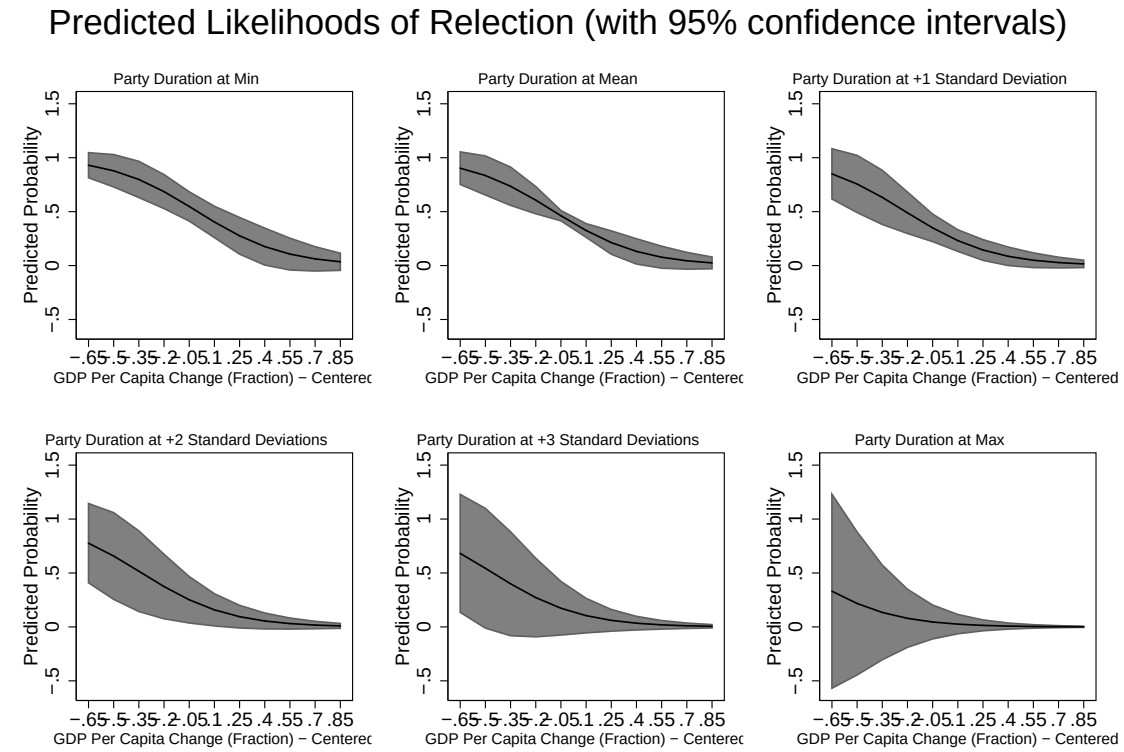

Figure B19: Predicted Marginal Effects - Full Sample

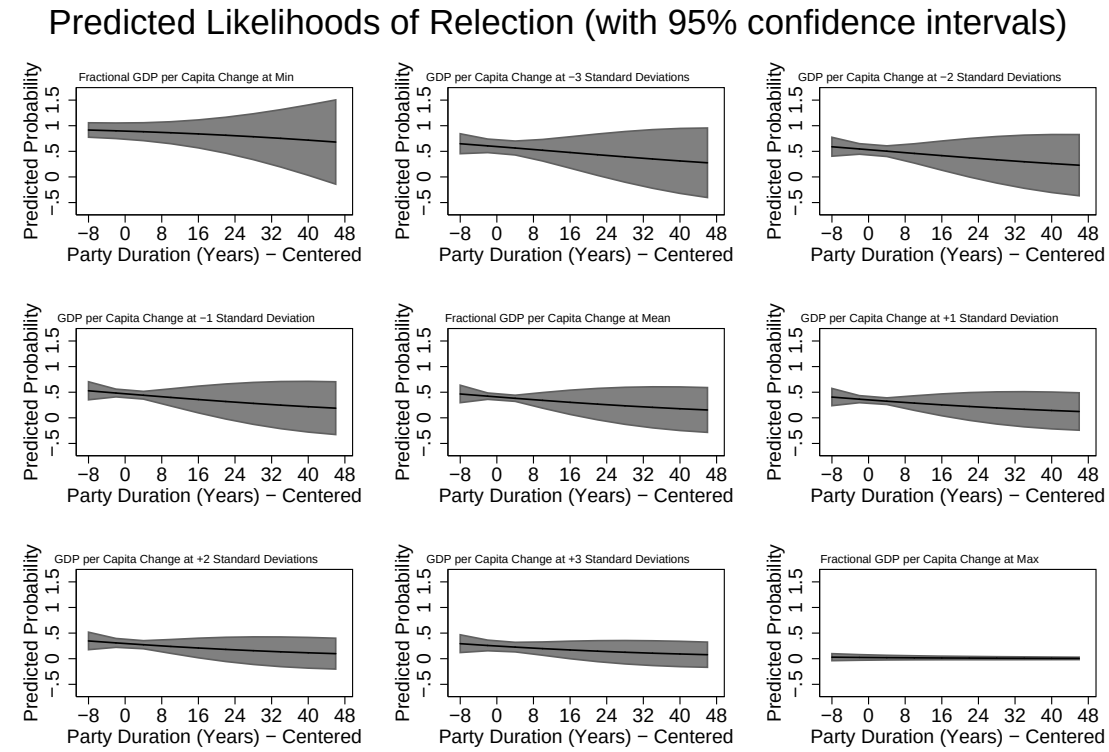

Figure B20: Predicted Marginal Effects - Party Duration <55 Years.

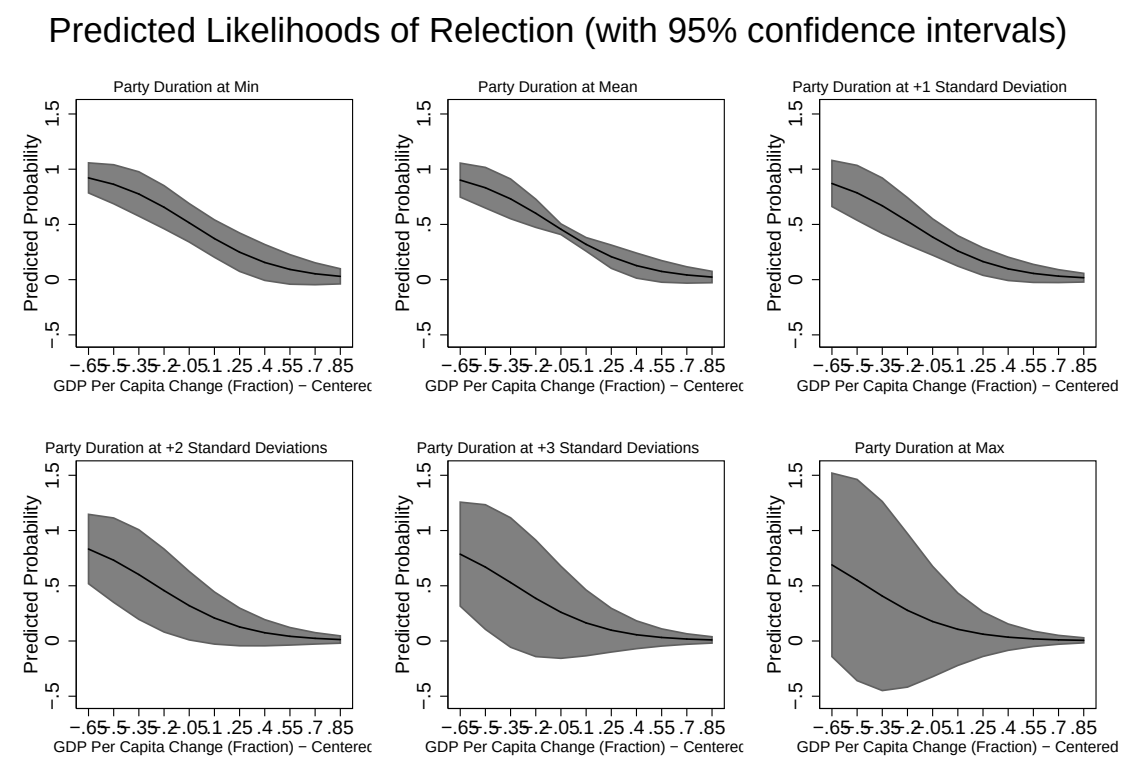

Figure B21: Predicted Marginal Effects - Party Duration <55 Years.

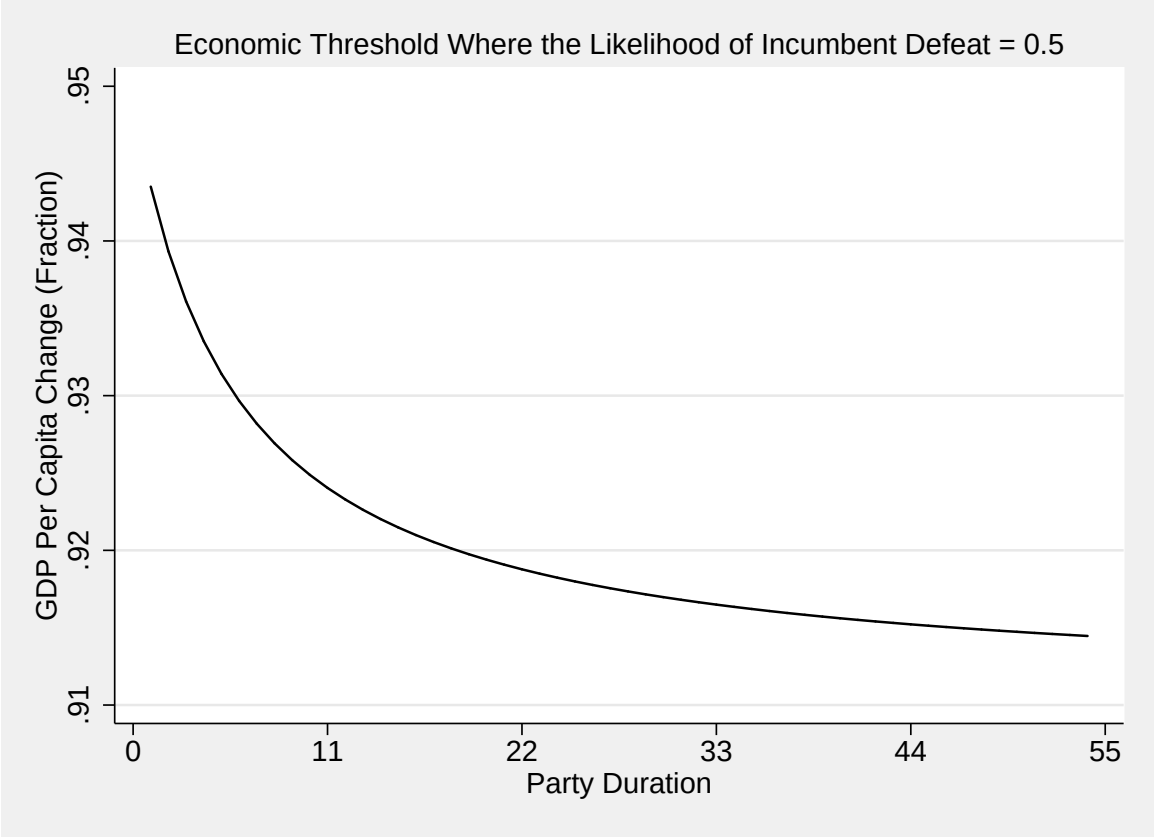

Figure B22: Calculated Threshold (Party Duration ¡55 Years) - GDP Per Capita Change (Fraction).

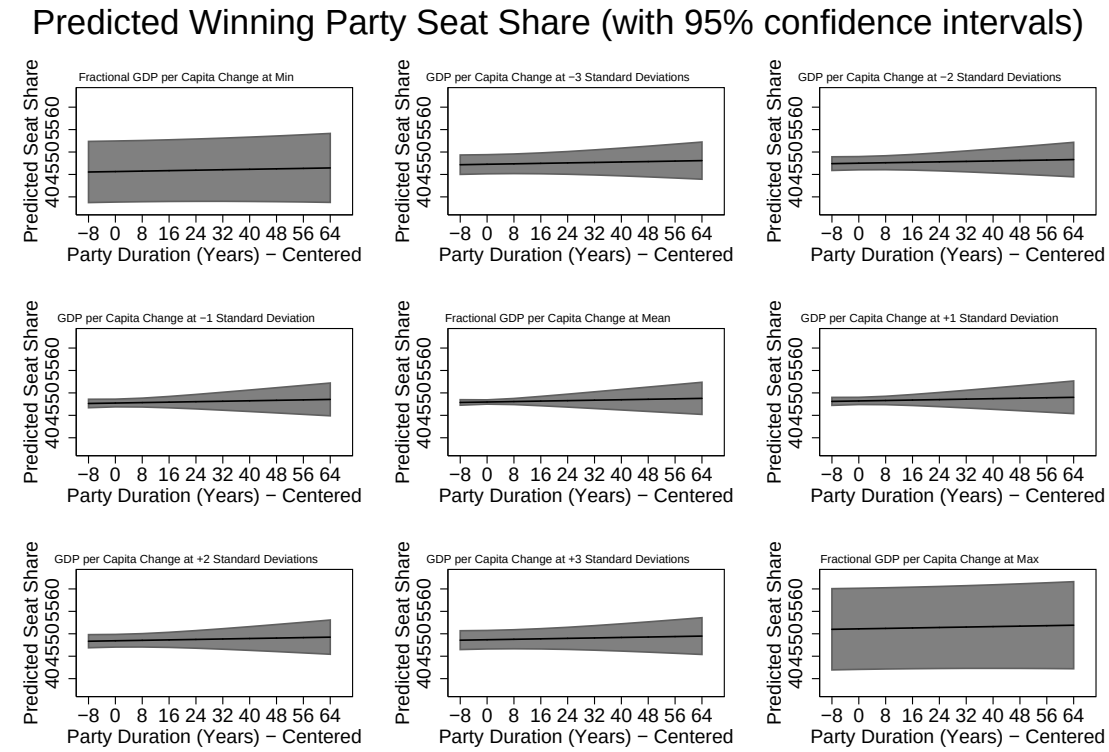

Figure B23: Predicted Winning Party Seat Share - Full Sample.

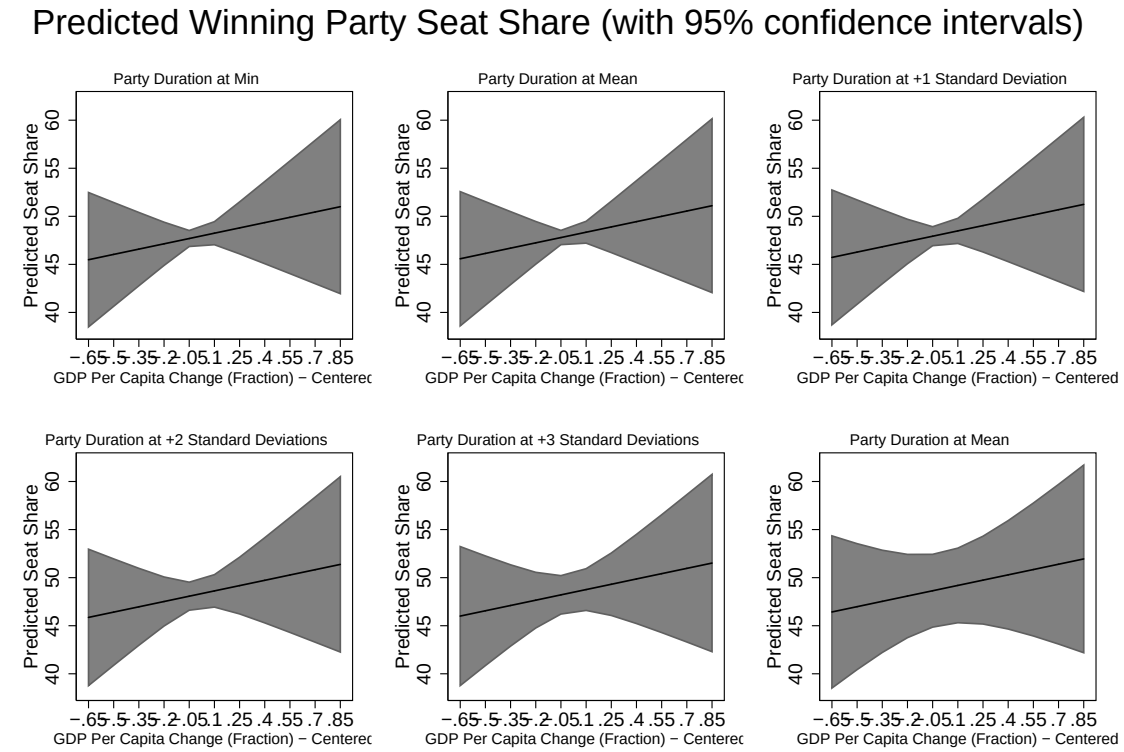

Figure B24: Predicted Winning Party Seat Share - Full Sample.

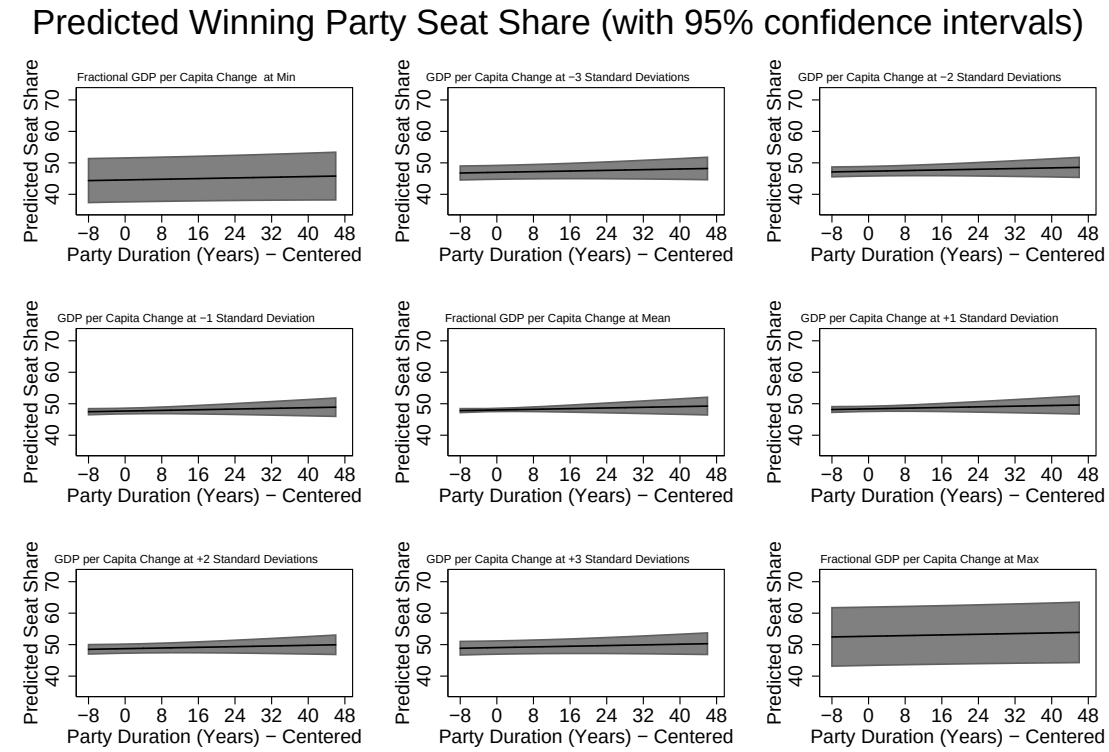

Figure B25: Predicted Winning Party Seat Share - Party Duration <55 Years.

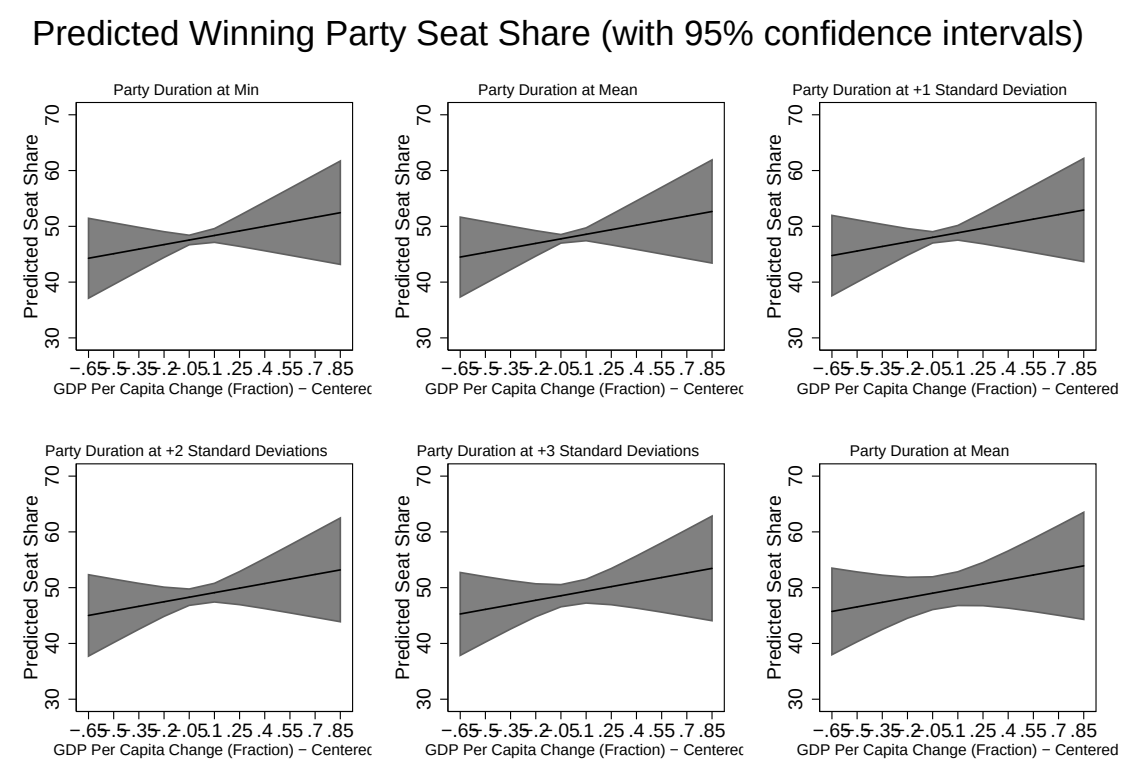

Figure B26: Predicted Winning Party Seat Share - Party Duration <55 Years.

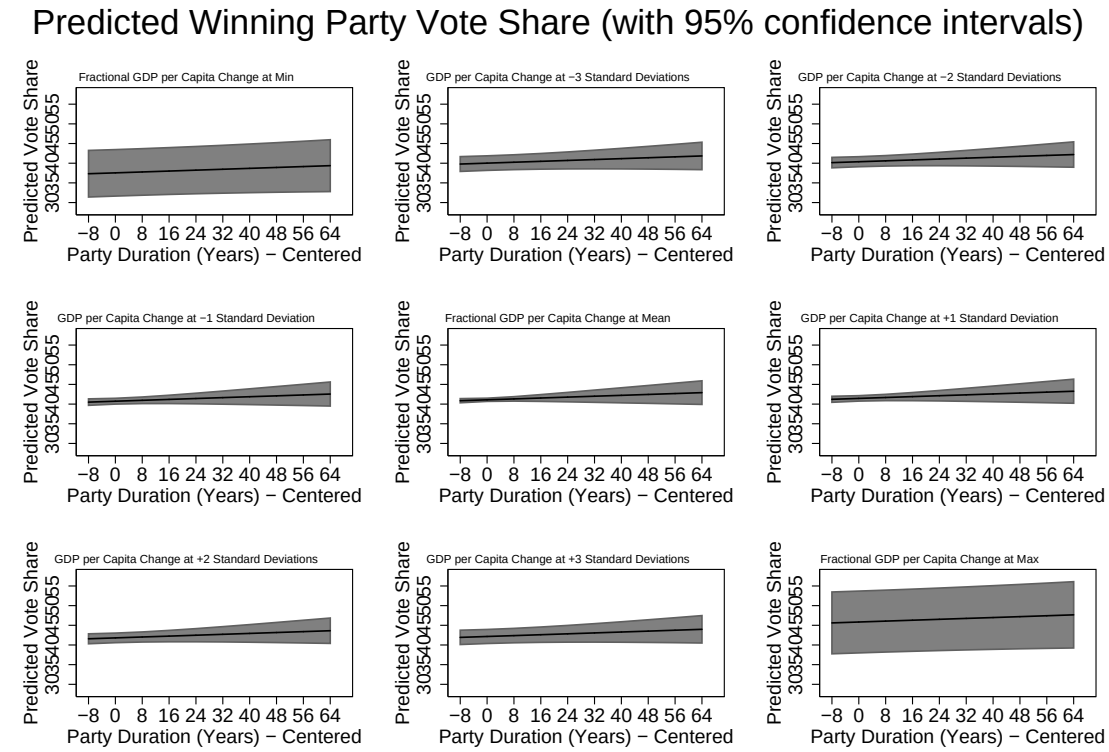

Figure B27: Predicted Winning Party Vote Share - Party Duration <55 Years.

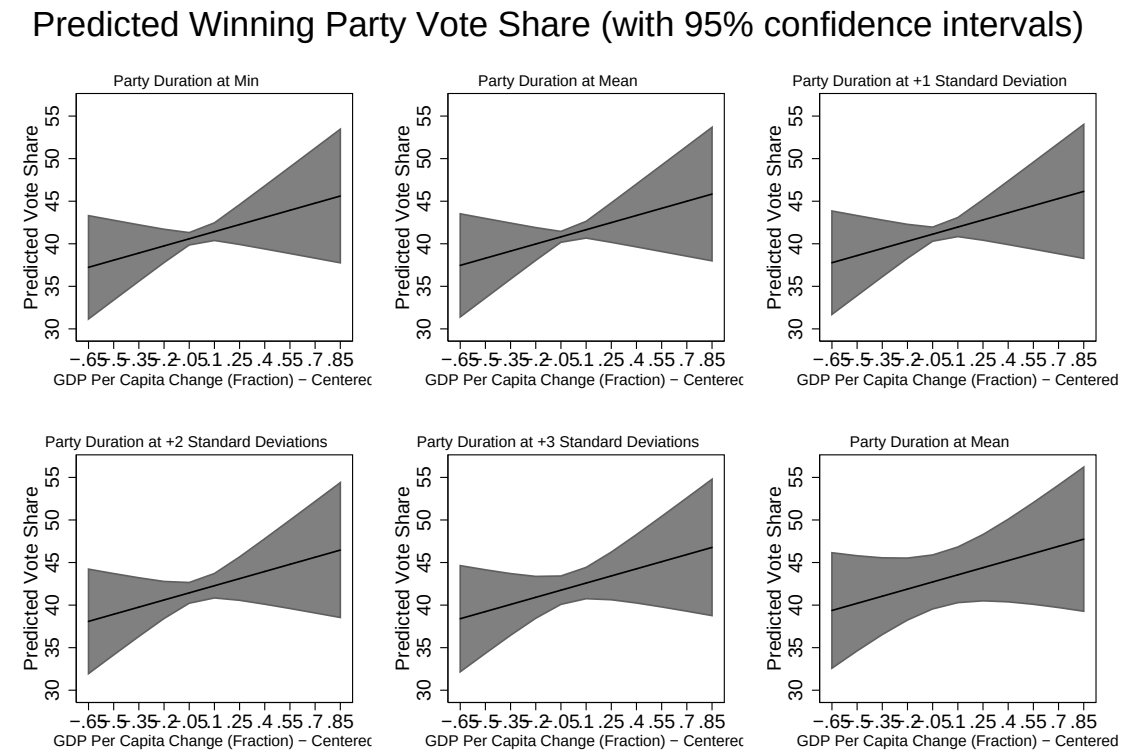

Figure B28: Predicted Winning Party Vote Share - Party Duration <55 Years.

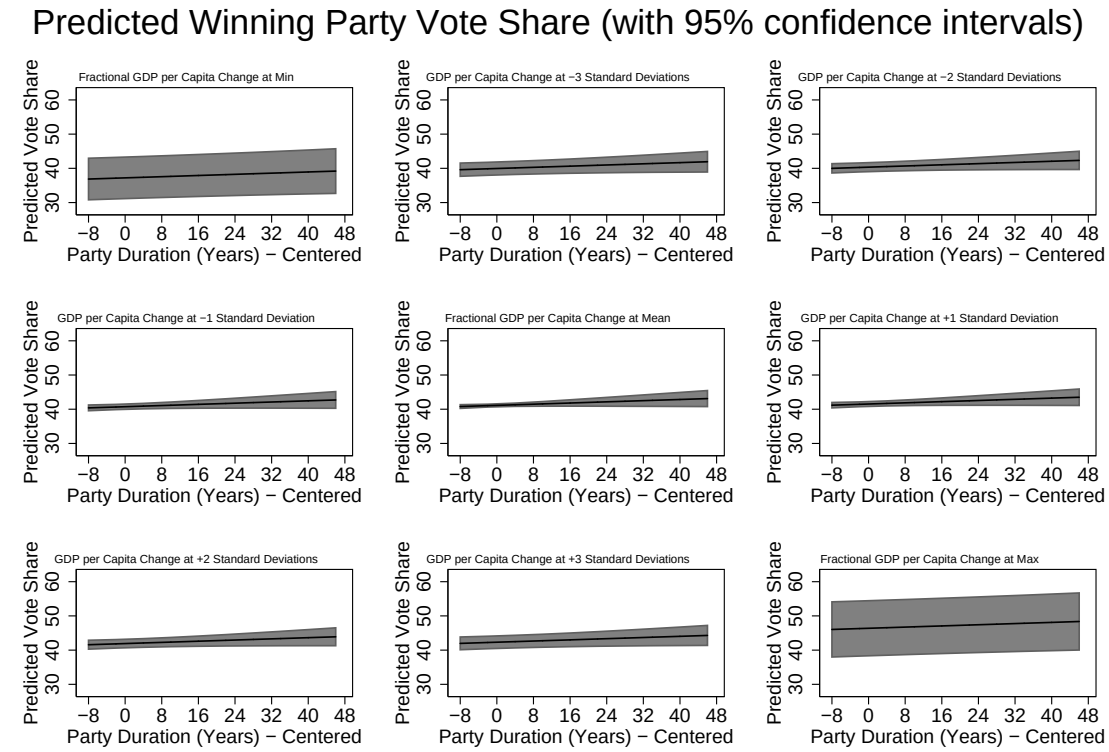

Figure B29: Predicted Winning Party Vote Share - Party Duration <55 Years.

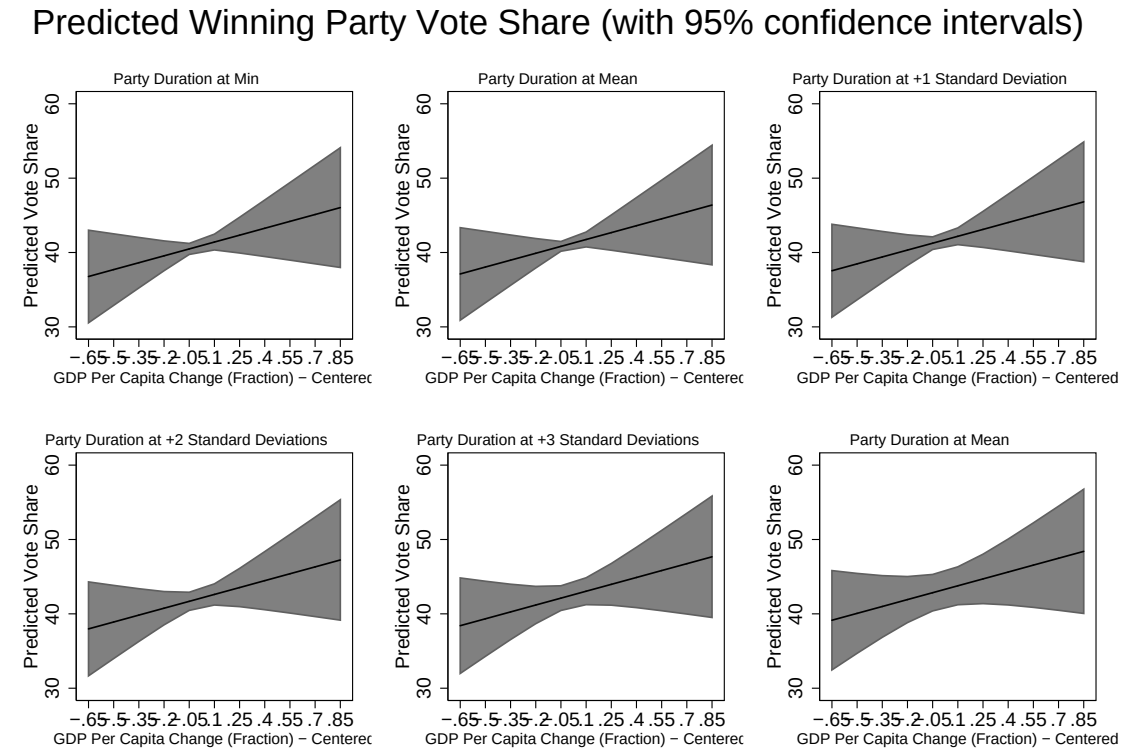

Figure B30: Predicted Winning Party Vote Share - Party Duration <55 Years.

APPENDIX C
MATHEMATICAL APPENDIX

C.1 Maximum Likelihood Estimation by Logit Regression

Consider the population of election outcomes denoted by P and a sample drawn from that population denoted by p comprised of n elections. To evaluate the probability that the incumbent wins an individual election in the full population, given that only a sample from the population is available, assume that there is a probability distribution function that determines the probability that an election is won by the incumbent or not. This function can be denoted as $f(y_i|)$ where is the population probability that the incumbent loses[1]. y_i is an indicator variable which takes on values of 1 when an incumbent loses and 0 when the incumbent does not lose. Or formally:

$$y_i = \begin{cases} 1 & \text{if the incumbent party loses an election} \\ 0 & \text{if the incumbent party does not lose an election} \end{cases} \tag{C.1}$$

Then, define the function $f(y_i|)$ as:

$$f(y_i|P) = P^{y_i}(1-P)^{1-y_i} \tag{C.2}$$

In cases when the incumbent party loses and $y_i = 1$, this function takes the form:

[1]Typically the population probability is unknown by the researcher.

$$f(1|P) = P^1(1-P)^0 = P \tag{C.3}$$

which is the population probability that the incumbent fails to be reelected. Similarly, in the cases where the incumbent does not lose an election, the function can be written:

$$f(0|P) = P^0(1-P)^1 = 1-P \tag{C.4}$$

which is the corresponding probability that an individual election is not lost by the incumbent party. In both cases, the function $f(\cdot)$ provides the probability that the specific election outcome is obtained, given the full population.

When looking at the sample of n observations, the probability density function can be defined as $f(y_1, y_2, y_n|)$ which can be expanded to:

$$^{y_1}(1-y_1) * ^{y_2}(1-y_2) * ... * ^{y_n}(1-P)^{1-y_n} \tag{C.5}$$

This product can be rewritten as:

$$\prod_{i=1}^{n} P^{y_i}(1-P)^{1-y_i} \tag{C.6}$$

This product is the probability that the random election y_1 actually took on that value, multiplied by the probability that the random election y_2 took on that value, all the way to election y_n. Or formally, $Pr(y_1 = y_1, y_2 = y_2, ..., y_n = y_n)$. This

is joint probability that the sample arose, given the population, which is known as the likelihood $\mathcal{L}$. In a discrete case such as this one, this can be thought of as the probability that all the election observations in the sample were observed, given there is a probability that the incumbent fails to win reelection.

Unfortunately, the population probability is usually unknown. Therefore, the goal is to maximize the probability of drawing this particular sample of observations over a choice of probabilities, ρ. The idea is to choose the probability that maximizes the likelihood that this particular sample was drawn.

In order to do this requires differentiating the likelihood function $\mathcal{L}$ with respect to and setting it equal to zero which produces the maximum likelihood estimator $\hat{\rho}$. However, rather than differentiating a complicated product, the solution is to take the log of the likelihood function, creating a simpler equation to derive and giving the log likelihood ℓ which can then be set equal to zero. Taking the log of the above likelihood, rewritten in respect to $\hat{\rho}$ gives:

$$log\Bigg(\prod_{i=1}^{n}\hat{\rho}^{y_i}(1-\hat{\rho})^{1-y_i}\Bigg) \tag{C.7}$$

which can be rewritten as:

$$\sum_{i=1}^{n}\left[log\hat{\rho}^{y_i}(1-\hat{\rho})^{1-y_i}\right] \tag{C.8}$$

which gives:

$$\sum_{i=1}^{n}\left[y_i log\hat{\rho} + (1-y_i)log(1-\hat{\rho})\right] \tag{C.9}$$

Treating the $log\hat{\rho}$ and $log(1-\hat{\rho})$ as constants and simplifying the remaining sum

yields:

$$logP * n(\bar{y}) + log(1 - P) * n(1 - \bar{y}) \tag{C.10}$$

It is now possible to differentiate the log likelihood with respect to $\hat{\rho}$ and set it equal to zero:

$$\frac{\partial \ell}{\partial \hat{\rho}} = \frac{n\bar{y}}{\hat{\rho}} - \frac{n(1 - \hat{y})}{1 - \hat{\rho}} = 0 \tag{C.11}$$

By canceling out terms, this equation can be written:

$$\hat{\rho} = \bar{y} \tag{C.12}$$

which means that the maximum likelihood estimator for the population parameter P is the fraction of observations in the sample where the incumbent party lost the election.

Adding in the independent variable, length of party incumbency, leads to the probability that the incumbent party loses the election given by:

$$Pr(y_i = 1|x_i) \tag{C.13}$$

where the dependent variable y_i is still a dichotomous variable which equals 0 if the incumbent loses and 1 if the incumbent does not lose, and x_i is a count of the number of years the incumbent party has been in power. Since probabilities are constrained to fall between zero and one, a linear regression model is inappropriate. A link function, $F(\cdot)$, transforms the linear combination of variables to output values that fall between

zero and one. This leads to the equation:

$$Pr(y_i = 1|x_i) = F(\alpha + \beta x + \varepsilon) \tag{C.14}$$

In this form, as the linear combination of variables approaches $-\infty$, the function $F(\cdot)$ is more likely to output zero. Conversely, $F(\cdot)$ is more likely to output one as the linear combination of variables approaches ∞. Therefore, the function $F(\cdot)$ has outputs limited to range between zero and one.

There are two common maximum likelihood models employed when analyzing binary dependent variables: either a logit regression model or a probit regression model, both with different link functions. The logit link function takes the form

$$F(z) = \frac{exp(z)}{1 + exp(z)} = \Lambda(z) \tag{C.15}$$

When z approaches $-\infty$, this equation outputs a value which approaches zero. On the other hand, when z approaches ∞, the equation gets closer to one. Therefore, this function satisfies the necessary behavior for the link function, given linear combinations of the variables.

The probit regression model is similar to the logit model and its link function also yields similar results. The probit link function can be written:

$$F(z) = \int_{-\infty}^{z} \phi(u)du \tag{C.16}$$

In this form, as z takes smaller and smaller values, closer to $-\infty$, the area under the graph becomes smaller and smaller. However, since the area under the graph is by definition equal to one, if z becomes larger and approaches ∞, then the area under the graph becomes closer to one. Both these criteria again satisfy the requisite behavior for the link function.

When the linear combination of variables equal zero, leading the link function to take the form $F(0)$, both models behave similarly. In both cases, $F(0) = .5$. This means that the probability that the incumbent party fails to win reelection, $(Pr(y_i = 1|x_i) = .5)$, is just as likely as the probability that the incumbent does fail to win reelection $(Pr(y_i = 0|x_i) = 1 - (Pr(y_i = 1|x_i) = .5))$.

While they are different, estimation of both models follows the same approach. The two outcomes of interest can be written:

$$Pr(y = 1|x) = F(\alpha + \beta x + \varepsilon) \tag{C.17}$$

$$Pr(y = 0|x) = 1 - F(\alpha + \beta x + \varepsilon) \tag{C.18}$$

where $y = 1$ if the incumbent party loses the election and y=0 when the incumbent does not lose the election. These probabilities can be used to construct a likelihood function.

$$\mathcal{L}(y_1) = Pr(y = y_i|x) = [F(\alpha + \beta x)]^{y_i}[1 - F(\alpha + \beta x)]^{1-y_i} \tag{C.19}$$

In this equation, when $y_i = 1$, the first term on the right is simply the probability that $y_i = 1$ given x while the second term becomes one, leaving only the first probability. Conversely, when $y_i = 0$, the first term becomes one, leaving the second term which is the probability that $y_i = 0$ given x.

Given n observations, the likelihood, assuming the observations are independent from each other, is written:

$$\mathcal{L} = \prod_{i=1}^{n}[F(\alpha + \beta x)]^{y_i}[1 - F(\alpha + \beta x)]^{1-y_i} \tag{C.20}$$

Or, more concisely,

$$\mathcal{L} = \mathcal{L}(y_1) * \mathcal{L}(y_2) * ... * \mathcal{L}(y_N) = \prod_{i=1}^{n} \mathcal{L}(y_i) \tag{C.21}$$

Again, it is necessary to differentiate this equation which is easier after taking the log:

$$\ell = \sum_{i=1}^{n} y_i * ln[F(\alpha + \beta x)] + (1 - y_i) * ln[1 - F(\alpha + \beta x)] \tag{C.22}$$

It is now possible to differentiate the log likelihood in respect to α and any parameters, β, and set it equal to zero to calculate the effect of the independent variables of interest.

C.2 Multiplicative Interaction

An interaction term is the product of two or more explanatory variables included in the linear regression equation. The effect of one variable depends on the other. Therefore, it is impossible to discuss the effect of one variable without accounting for the effect of the other. In its simplest form, the interaction can be expressed as:

$$Y_i = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i1} X_{i2} + \varepsilon_i \tag{C.23}$$

Consider a model where the change in Y corresponds to a change in X_j dependent on X_k. If the mean value of the dependent variable is a function of two non-stochastic explanatory variables X_1 and X_2, then:

$$Yi = f(X_{i1}, X_{i2}) \tag{C.24}$$

so that

$$\frac{\partial Y_i}{\partial X_{i1}} = g(X_{i2}) \tag{C.25}$$

and

$$\frac{\partial Y_i}{\partial X_{i2}} = h(X_{i1}) \tag{C.26}$$

where $g(X_2)$ and $h(X_1)$ are functions which must be specified a priori. In the simple model specified above, these can be written:

$$\frac{\partial Y_i}{\partial X_{i1}} = \beta_1 + \beta_3 X_{i2} \tag{C.27}$$

and

$$\frac{\partial Y_i}{\partial X_{i2}} = \beta_2 + \beta_3 X_{i1} \tag{C.28}$$

In this format, both $g(X_2)$ and $h(X_1)$ are linear functions of their variables with a common slope, β_3. Its important to note that in the form above, both independent variables are now represented by two coefficients (β_1 and β_3 for X_{i1} and β_2 and β_3 for X_{i2}). If one of these variables does not affect $E(Y)$, then both coefficients must equal zero (Kmenta, 1971; Jaccard and Turrisi, 2003).

Consider the case where Y_i and X_{i1} are both continuous variables, X_{i2} is a dichotomous variable, and the effect of X_{i1} on Y_i is a positive effect that is only present when $X_{i2} = 1$. When $X_{i2} = 0$, the equation can be written:

$$Y_i = \alpha + \beta_1 X_{i1} + \varepsilon_i \tag{C.29}$$

whereas when $X_{i2} = 1$, it can be written:

$$Y_i = (\alpha + \beta_2) + (\beta_1 + \beta_3) X_{i1} + \varepsilon_i \tag{C.30}$$

Given these two equations, it is expected that β_1 equals zero and subsequently that β_3 is positive.

If the individual X_{i2} term is excluded from the model and only the interaction term is included, the specified model takes the form:

$$Y_i = \hat{\alpha} + \hat{\beta}_1 X_{i1} + \hat{\beta}_3 X_{i1} X_{i2} + \hat{\varepsilon}_i \tag{C.31}$$

Omitting X_{i2} results in omitted variable bias and causes the estimates of α, β_1, and β_3 to be biased (Brambor, Clark and Golder, 2006).

The previous discussion highlights the importance of including all constitutive elements of an interaction term in the full model. However, there are a number of other concerns when utilizing interaction models. Interpretation of the estimated coefficients is not as simple as examining the reported coefficients and the marginal effects and standard errors require additional calculation.

In the basic linear regression model, the coefficient β_1 is interpreted as the average effect of X_{i1} on Y_i. However, in the model specified above, β_1 is only the effect of X_{i1} on Y_i when X_{i2} equals zero. Therefore, the reported coefficients cannot be used to determine significance or the direction of the effect of the individual independent variables. In the case where X_{i2} is a dichotomous variable, calculating the effect of X_{i1} on Y_i requires taking into account the calculated coefficients of β_1 and β_3 as well as the proportion of cases where X_{i2} is zero and where it is one.

For the example above, calculation of the marginal effect of X_{i1} is given by equation (33) above. This equation highlights the fact that to understand the effect of X_{i1} on Y_i requires taking into account X_{i2} and its value. In the case of a dichotomous variable like the example above, the effect changes depending on whether X_{i2} is present or not. However, if X_{i2} is a continuous variable or ordinal variable, the effect can be drastically different. In fact, Brambor, Clark and Golder (2006) recommend scholars do not rely on tables to report the effects of interactions, but instead plot the effects and confidence intervals across the range of the interacted term.

When using regression models which incorporate an interaction between two continuous variables, methodologists recommend centering the two constituent predictor variables by subtracting their mean from all observations. First, interacting two variables in a regression model creates multicollinearity. Centering the variables can avoid strong correlation between the interaction term and the two variables from which it is calculated. Second, scholars have argued that it is easier to interpret the results if the interacted independent variables are centered since the estimated

intercept is independent of the slope and a linear transformation of variables does not alter the calculated slopes (Arnold and Evans, 1979; Fürst and Ghisletta, 2009; Afshartous and Preston, 2011).

C.3 Modeling Binary Time-Series Cross-Sectional Data

This dataset is an unbalanced cross sectional time-series dataset. Variables vary by country, denoted by i, and by time, denoted by t. A single observation can be given by $y_{it}, x_{it} : i = 1, 2, ..., N; t = 1, 2, ..., T$. While observations are measured annually, the timing of elections varies by country. Therefore, election outcomes in different countries are not observed in all periods or the same periods. Elections in each country are assumed to be independent of elections in other countries, but not independent of other elections within the same country. It is also assumed that within country observations are affected by temporal dynamics.

With cross sectional time-series data, independent variables can be fall under three categories: varying regressors, time-invariant regressors, and individual-invariant regressors. Time-invariant regressors, denoted x_i, do not change within the data over time. For example, a regional indicator variable which identifies that a country is part of Europe would be a time-invariant regressor. Individual-invariant regressors, denoted as x_t, change with time, but not individuals. An indicator variable for a world-wide event experienced by every country, such as a world war or world-wide economic crisis, would be an example of an individual-invariant regressor. Varying regressors vary by both individual and time. Variables like economic growth fall under the varying regressor category.

There are also a number of important concepts related to cross sectional time-series data. These include individual mean, overall mean, overall variance, between variance, and within variance. The individual mean is the mean value for a variable for a specific individual. It is given by:

$$\bar{x}_t = \frac{1}{T} \sum_t x_{it} \tag{C.32}$$

On the other hand, the overall mean is the mean for a variable across all individuals

over time and is given by:

$$\bar{\bar{x}} = \frac{1}{NT} \sum_i \sum_t x_{it} \tag{C.33}$$

In the same vein, overall variation is the variation over time for all individuals. Between variation gives the variation between individuals at the same time while within variation measures the variation within an individual over time. The overall variance is given by:

$$s_O^2 = \frac{1}{NT-1} \sum_i \sum_t (x_{it} - \bar{\bar{x}})^2 \tag{C.34}$$

while the between variance is written:

$$s_B^2 = \frac{1}{N-1} \sum_i (\bar{x}_t - \bar{\bar{x}})^2 \tag{C.35}$$

and the within variance is calculated by:

$$s_W^2 = \frac{1}{NT-1} \sum_i \sum_t (x_{it} - \bar{x}_i)^2 = \frac{1}{NT-1} \sum_i \sum_t (x_{it} - \bar{x}_i + \bar{\bar{x}})^2 \tag{C.36}$$

Additionally, the overall variance can be expressed in relation to the between and within variation:

$$s_O^2 \approx s_B^2 + s_W^2 \tag{C.37}$$

Time-invariant regressors have zero within variation while individual-invariant regressors have zero between variation (Lütkepohl, 2007).

To understand the effects of ignoring temporal aspects of the data, consider the Ordinary Least Squares estimator β of a bivariate regression. In the bivariate

regression model given by:

$$Y_t = \alpha + \beta X_t + \varepsilon_t \tag{C.38}$$

the effect of the independent variable X_t on the dependent variable Y_t is given by the slope coefficient estimated by:

$$\hat{\beta} = \frac{\sum(x_t - \bar{x})(y_t - \bar{y})}{\sum(x_t - \bar{x})^2} \tag{C.39}$$

If the previous realization of the dependent variable enters into the model, however, and the true regression model is instead given by:

$$Y_t = \alpha + \beta_1 X_t + \beta_2 Y_{t-1} + \varepsilon_t \tag{C.40}$$

and the actual marginal effect of X_t on Y_t should instead be calculated as:

$$\hat{\beta}_1^* = \frac{\sum(x_t - \bar{x})(y_t - \bar{y})\sum(y_{t-1} - \bar{y}_{t-1})^2 - \sum(y_{t-1} - \bar{y}_{t-1})(y_t - \bar{y})\sum(x_t - \bar{x})(y_{t-1} - \bar{y}_{t-1})}{\sum(x_t - \bar{x})^2\sum(y_{t-1} - \bar{y}_{t-1}) - \sum(x_t - \bar{x})(y_{t-1} - \bar{y}_{t-1})} \tag{C.41}$$

Therefore, the bias of the estimate $\hat{\beta}_1$ is calculated as the difference between $\hat{\beta}_1 - \hat{\beta}_1^*$.

Furthermore, the estimator is no longer efficient. In the bivariate regression model, the variance of the estimated slope coefficient is given by:

$$var(\hat{\beta}) = \frac{\sigma^2}{\sum(x_t - \bar{x})^2} \tag{C.42}$$

However, when previous realizations of the dependent variable affect the current re-

alization of the dependent variable, the variance is instead calculated by:

$$var(\hat{\beta}_1)^* = \frac{\sigma^2}{\sum(x_t - \bar{x})^2}\big[1 + 2\rho\frac{\sum(x_t - \bar{x})(x_{t-1} - \bar{x})}{\sum(x_t - \bar{x})^2} + 2\rho^{n-1}\frac{\sum(x_t - \bar{x})(x_n - \bar{x})}{\sum(x_t - \bar{x})^2}\big] \tag{C.43}$$

where ρ is the coefficient of covariance. This refers to the coefficient of autocorrelation at lag 1. In cases where ρ equals zero, $var(\hat{\beta})$ and $var(\hat{\beta}_1)^*$ will be equal. In all other cases, the estimator will not be efficient (Gujarati and Porter, 1978).

When examining time series data with serially correlated errors, Poirier and Ruud (1988) show that the standard errors generated by a probit model are incorrect. Alt, King and Signorino (2001) also show that when examining disaggregated count data, if the data generating process is temporally dependent, then using a logit model with only a linear $x\beta$ specification is problematic since it implies a constant hazard.

Political methodologists examining binary time series cross-sectional data have drawn from event history analysis and developed estimation techniques that were inspired by discrete time duration models. Event history analysis examines the length of time that subjects or units spend in a state before experiencing an event of interest. Analysts are interested in the relationship between independent variables and the time till an individual experiences the event (Box-Steffensmeier and Jones, 2004).

Event history analysis can also be thought of as survival analysis. Researchers are interested in how long a subject survives until it fails. This analysis is built around the concept of risk. The analyst begins with a population and then must construct a risk set of the subjects which are eligible to fail at a period t. Researchers are interested in the duration of time spent in the initial state and the transition to the second state. Event history analysis can be conducted through continuous duration models or discrete duration models. With continuous duration models, analysts are able to identify the exact moment a subject fails. Conversely, researchers using

discrete duration models aggregate time into fixed intervals. Subjects are coded for whether or not they fail during a specific interval, but the more detailed information about the specific time is unknown. The structure of my election data is aggregated to the annual level, resulting in a discrete event history analysis.

The first step in duration analysis is to identify the point when subjects enter the risk set, also known as the time of entry. This is a baseline point from which subsequent points can be compared against and a point from which to observe the subsequent history. With election outcomes, the obvious starting point is the year that the party took office or formed a government. While the data covers over two-hundred years leading to different calendar times when incumbent parties took office, the clock time begins with the year a new party takes office and begins counting from that time. Therefore, every party begins at the same relative position upon taking office.

As mentioned previously, the dependent variable is a dichotomous measure which can be denoted y_{it} where i identifies the observation and t identifies the period. The next step is to examine the first year and identify which subjects experience the event (losing an election) and fail that year. These subjects are coded as ones while subjects that do not fail are coded as zeroes. The process then repeats at the second year. This continues till either all observations fail, or the data reaches the last observation time. If a subject reaches the last observation time and does not fail, it is considered as a right censored data point. Censoring refers to objects where either the start or end period are unknown. When the period that a subject enters the risk set is unknown, the subject is left censored. Conversely, if it is unknown when a subject experiences failure, the subject is right censored.

Three central elements of discrete event history analysis are the probability mass function, survival function, and the hazard rate. Let T denote the time that a subject experiences the event and fails and t_i denote discretely defined periods. The

probability mass function for a discrete random variable is given by:

$$f(t) = Pr(T = t_i) \tag{C.44}$$

which denotes the probability that the event occurs at period t_i. The survival function gives the probability that the survival time T for an observation is greater than or equal to time t_i and is denoted as:

$$S(t) = Pr(T \geq t_i) = \sum_{j \geq i} f(t_j) \tag{C.45}$$

where j is used to denote a failure time. The survival function can also be used to denote the proportion of units which survive beyond a period t. When $t = 0$, all units survive and are eligible to fail, leading the proportion to take on a value of 1 ($S(0) = 1$). As time progresses and t increases, the number of units which have not failed decreases, leading to a smaller proportion and a decreasing function. Conversely, the hazard rate, denoted as:

$$h(t) = \frac{f(t)}{S(t)} \tag{C.46}$$

captures the relationship between failure and survival. The hazard rate gives the rate at which subjects fail by period t given that the subject has survived until period t. The hazard can be thought of as a ratio of the probability of failure to the probability of survival. The hazard probability for can be expressed as:

$$h(t) = Pr(T = t_i | T \geq t_i) \tag{C.47}$$

The conditional probability of survival, the probability that the failure time T is greater than some period t_i given the subject has survived to period t_i can also

be expressed in relation to the hazard function:

$$Pr(T > t_i | T \geq t_i) = 1 - h(t) \tag{C.48}$$

This can then be used to calculate the probability of failure, denoted earlier as $f(t)$:

$$Pr(T = t_i) = Pr(T = t_i | T \geq t_i) * Pr(T > t_{i-1} | T \geq t_{i-1}) * ... * Pr(t > t_1 | T \geq t_1) \tag{C.49}$$

Expressing this equation through the hazard probability and survival probability gives:

$$f(t) = h(t_i) * (1 - h(t_{i-1})) * ... * (1 - h(t_1)) = h(t_1) \prod_{i=1}^{t-1} (1 - h(t_i)) \tag{C.50}$$

Therefore, the probability mass function can be expressed as the product of the conditional survival function multiplied by the hazard probability.

The probability of surviving beyond time t_i can also be expressed as the conditional probability of surviving through the previous periods. Given that $f(t) = S(t) * h(t)$, the survivor function can be written as:

$$Pr(T > t_i) = (1 - h(t)) * (1 - h(t_{i-1})) * ... * (1 - h(t_1)) = \prod_{i=1}^{t} (1 - h(t_i)) \tag{C.51}$$

A dataset of n observations over t periods where observations are coded one in periods when they fail and zero otherwise has a likelihood that is given as:

$$\mathcal{L} = \prod_{i}^{n} \left[h(t_i) \prod_{i=1}^{t-1} (1 - h(t_i)) \right]^{y_{it}} \left[\prod_{i=1}^{t} (1 - h(t_i)) \right]^{1 - y_{it}} \tag{C.52}$$

which can also be written:

$$\mathcal{L} = \prod_{i=1}^{n} [f(t)]^{y_{it}} [S(t)]^{1-y_{it}} \tag{C.53}$$

The impact of censored observations is very different in discrete duration models compared to continuous time models. With discrete data, the dependent variable is an implicit indicator of right censoring. Since the dependent variable is a series of zeroes and ones, only subjects which experience failure contribute to the probability of failure, $f(t)$. Subjects that never experience a failure event only contribute information to the probability of survival, $S(t)$. Conversely, with continuous time duration models, it is necessary to utilize an indicator variable for right censored observations.

The purpose of discrete event history analysis is to model the probability that the event will occur. The hazard probability captures this notion of risk. Beck, Katz and Tucker (1998) developed an estimation technique for cross-sectional data with a binary dependent variable to account for the temporal dynamics based on the discrete duration model derived from a continuous time Cox proportional hazard model. They suggested scholars utilize either time dummies or cubic splines to properly model this data. However, after reviewing the work done since Beck Katz and Tucker's study, Carter and Signorino (2010) suggested the use of cubic polynomials which produce similar results and is both easier to implement and for scholars to interpret.

Both Beck, Katz, and Tucker and Carter and Signorino approached estimation for cross-sectional data with a binary dependent variable to account for the temporal dynamics by starting with discrete duration model derived from a continuous time Cox proportional hazard model. With event history analysis, researchers are studying the time that passes till an event or failure occurs. A subject is considered at risk or has survived until failure occurs. The hazard rate for individual i at time t indicates how likely that unit is to fail at time t, given the unit has survived until that time. In

the case of a binary dependent variable affected by time, the probability that $y_{i,t} = 1$ can be expressed:

$$Pr(y_{i,t} = 1) = f(x_{i,t}, y_{i,t}, ..., y_{i,t-1}, x_{i,1}, ..., x_{i,t-1}), i = 1, ..., N; t = 1, ...T \quad \text{(C.54)}$$

where the function $f(\cdot)$ limits the output to the range $[0, 1]$.

While event history analysis can be used to study continuous time, binary time series cross-sectional data resembles the discrete time counterpart. With discrete time observations of failure are reported at fixed intervals which can be months, quarters, years, or any other fixed period. In the case of the election data I use in this project, the binary cross-sectional time-series data can be thought of as discrete duration data with an observation interval of one year. The outcome of elections and the independent variables are measured annually.

To estimate binary time series cross-sectional data Beck, Katz, and Tucker turned to the Cox proportional hazard model (Cox, 1972, 1975). In the Cox model, the hazard rate for the ith individual is given as:

$$h(t|x_i) = h_0(t)exp(x_i, \beta) \quad \text{(C.55)}$$

where the baseline hazard function is given by $h_0(t)$, the covariates and regression parameters are denoted by x_i, β, and x_i is a $1 * k$ row vector of k independent variables at time t. The hazard ratio can be expressed as:

$$\frac{h_i(t)}{h_0(t)} = exp(\beta(x_i - x_j)) \quad \text{(C.56)}$$

which indicates that the ratio is a fixed proportion across time. Unlike other proportional hazard models, the baseline hazard, $h_0(t)$, is assumed to be unknown, allowing it to vary for each individual (Box-Steffensmeier and Jones, 2004).

With the Cox model, the survival function, the probability of surviving beyond period t, is given by:

$$S(t) = exp\bigg(- \int_0^t h(\tau)d\tau \bigg) \tag{C.57}$$

where τ is the mean survival time. Given that the data only has annual observations, observation only identify whether an event occurred between time $t-1$ and t. The probability that an event occurred is given as

$$Pr(y_i = 1|t) \tag{C.58}$$

which is equal to one minus the probability of surviving beyond period t given the subject has survived up to period $t-1$. Assuming no prior failures, the probability of failure at period t can be written:

$$\begin{aligned} Pr(y_i = 1|x_i, \kappa_i) &= 1 - exp\bigg(\int_{t-1}^t h_i(\tau)d\tau \bigg) \\ &= 1 - exp\bigg(\int_{t-1}^t exp(x_i\beta)h_0(\tau)d\tau \bigg) \\ &= 1 - exp\bigg(exp(x_i\beta) \int_{t-1}^t h_0(\tau)d\tau \bigg) \end{aligned} \tag{C.59}$$

where κ_i denotes a $1*T$ row vector of time dummy variables $[\kappa_{1i}, \kappa_{2i}, ..., \kappa_{Ti}]$ which can also be thought of as duration specific fixed effects where each time dummy represents a particular duration $t \in 1, 2, 3, ..., T$. There is a κ_t for each value of t in the data. If the data is annual and covers ten years, there will be ten time dummies; if it is fifty years, there must be fifty time dummies. If the data exhibits temporal dependence, ignoring its effects can lead to omitted variable bias Carter and Signorino (2010).

However, Carter and Signorino identified two major weaknesses that arise from estimating binary time series cross-sectional data with time dummies. Time

dummies are an inefficient estimation tool. With datasets that cover many time periods, there are many parameters which must be estimated. Second, they stated that the deceasing hazards associated with very long, but rare, durations can lead to separation problems in binary data when utilizing time dummies. With binary data, separation occurs when regressors are able to perfectly predict y_i. When the data generating process produces a few long durations, the presence of these long, unique durations often lead to separation.

Beck, Katz, and Tucker also proposed that scholars utilize splines to model temporal effects in binary time series cross-sectional data. Spines are useful for researchers wanting a smooth hazard function. Splines allow the researcher to identify specific points, or knots, where the relationship between y and the independent variables (or time) changes.

The use of splines, also known as piecewise modeling uses polynomial segments which are connected a specific values of x, known as knots, and are used to smooth a function. The idea behind this approach is approximating the function using several low order polynomial functions which are each defined over different regions of the function (De Boor, 1978; Friedman, 1991; Eilers and Marx, 1996). One of the greatest challenges with utilizing splines is deciding on the placement of knots. Should knots be theoretically motivated, or motivated by the shape of the data? How many knots should be incorporated? Scholars who utilize too few knots under-fit the data whereas scholars who use too many produce the opposite result, over-fitting the data. Some scholars have gone so far as to suggest methods which automatically determine the number and placement of splines based on the data (Friedman, 1991).

Unfortunately, the vast majority of scholars fail to discuss either knot selection or interpretation. With a continuous variable, it is possible to plot the dependent variable and visually approximate the specific points where the relationship changes. With a binary variable, this is not possible. For scholars who decide to utilize knots,

Carter and Signorino suggest they rely on theory and model fit, through a sequence of diagnostic tests, to determine the best knot placement.

However, Carter and Signorino (2010) suggest that utilizing cubic polynomials to account for temporal effects in binary time series cross-sectional data is both simpler to implement and to interpret. They suggest that including t, t^2, and t^3 in the logit or probit regression. A logit regression that utilizes a cubic polynomial to account for temporal dependence takes the form:

$$Pr(y_i = 1|x_i, t) = \frac{1}{1 + exp[-x_i\beta + \alpha_1 t_i + \alpha_2 t_i^2 + \alpha_3 t_i^3} \tag{C.60}$$

where $s(t_i) = \alpha_1 t_i + \alpha_2 t_i^2 + \alpha_3 t_i^3$ is a cubic polynomial approximation of the hazard.

Carter and Signorino recommend the cubic polynomial because it is capable of capturing any shape of the hazard that is estimated by typical parametric and semi-parametric duration models. However, they also state that higher order polynomials can be utilized, but warn that they tend to overfit the data. They also warn scholars to refrain from using even-order polynomials as odd-order polynomials produce smaller mean-squared errors (Fox, 2000).

One of the major advantages of the cubic polynomial approach is that scholars can interpret the effects of time in the same way they would interpret other quadratic or cubic variables: by plotting the fitted $Pr(y_i = 1|x_i, t)$. After estimating the model, the researcher creates a time vector $\tilde{t} = \{1, 2, 3, ..., max(T)\}$ and both its squared ($\tilde{t}^2$) and cubed ($\tilde{t}^3$) terms. Then calculate the fitted values of $Pr(y_i = 1|x_i, \tilde{t})$ by inserting these terms into the estimated regression equation while holding all other variables constant. Usually these variables are held at either their mean or modal values. It is then possible to plot the estimated $Pr(y_i = 1|x_i, \tilde{t})$ against $\tilde{t}$.

While their approach is straightforward, Carter and Signorino warn of two potential concerns. First, the time polynomial terms, t, t^2, and t^3, are highly cor-

related. Researchers concerned with multicollinearity are recommended to demean t before generating t^2 and t^3 to reduce collinearity. However, they note that this is not a major concern when working with large datasets and furthermore, they failed to find evidence that it impacted any estimated models.

Their second concern is related to numerical instability. Specifically, they state that numerical instability is always a concern when working with maximum likelihood estimation, but especially when one of the variables is three to four orders larger than the others. When working with datasets with large periods t, the cubic term can become much larger than the other variables. To resolve this issue, they recommend scholars examine the range of all the variables, as well as the time polynomial terms. If the size of t^3 is a concern, it is possible to rescale it by dividing by some multiplier of ten. They recommend either $t/100$ and its square and cubic polynomials, or t, t^2, and $t^3/1000$. Given the structure of my data, I opt to follow the approach devised by Carter and Signorino and utilize time polynomials in my logit regression.

C.4 Modeling Cross-Sectional Time-Series Data with a Continuous Dependent Variable

Thirty years ago, Stimson (1985) was one of the first political scientists to address the effects of space and time in regression analysis. Stimson noted that political scientists rarely examined data across both space and time at once. He focused on the analysis of continuous dependent variables measured over time and space and discussed four estimators - ordinary least squares, least squares with dummy variables, error components, and Box-Jenkins ARMA models.

Over the years, several models have been developed to estimate cross sectional time-series data with a continuous dependent variable beyond the four approaches discussed by Stimson. These models fall into three categories: pooled models, fixed effects models, and random effects models. Pooled models are the most restrictive type of models. These models take the form:

$$y_{it} = \alpha + \beta x_{it} + u_{it} \tag{C.61}$$

where the coefficients are held constant. The coefficients are not allowed to vary across time or across individuals. In effect, this approach estimates the data using basic OLS and ignores that cross sectional and time-series nature of the data.

Both the fixed effects models and random effects models fall into the category of individual-specific effects models. These models assume there is unobserved heterogeneity across individuals, captured by the variable α_i. For instance, an incumbent party might have an especially charismatic leader who is able to secure votes, something that is not captured by the data. The question that arises is whether the individual specific effects are correlated with the regressors. If they are correlated, the fixed effects model is most appropriate. Conversely, if they are not correlated, the random effects model is the more appropriate model.

The fixed effects model allows the individual specific effects, α_i, to be correlated with the independent variables x. Therefore, α_i is included as an intercept where each individual has a different intercept, but the same slope parameters. The model can therefore be specified as:

$$y_{it} = \alpha_i + \beta x_{it} + u_{it} \tag{C.62}$$

where α_i is subscripted by the individual. Another way to think of these individual specific effects is that they are leftover variation in the dependent variable that cannot be explained by the independent variables. The individual specific effects can be recovered after estimation as:

$$\hat{\alpha}_i = \bar{y}_i - \hat{\beta}\bar{x}_i \tag{C.63}$$

On the other hand, the random effects model assumes the individual specific effects, α_i, are distributed independently of the regressors. Therefore, α_i is included in the error term. In the random effects model, each individual has the same slope parameters and a composite error term given as:

$$\varepsilon_{it} = \alpha_{it} + e_{it} \tag{C.64}$$

The model therefore can be written:

$$y_{it} = \beta x_{it} + (\alpha_i + e_{it}) \tag{C.65}$$

In this model, the variance of ε_{it} is given by:

$$var(\varepsilon_{it}) = \sigma_\alpha^2 + \sigma_e^2 \tag{C.66}$$

while the covariance between two time periods can be given by:

$$cov(\varepsilon_{it_1}, \varepsilon_{it_2}) = \sigma_\alpha^2 \tag{C.67}$$

The correlation between the errors of two time periods for an individual, ε_{it_1} and ε_{it_2} is written:

$$\rho_\varepsilon = cor(\varepsilon_{it_1}, \varepsilon_{it_2}) = \frac{\sigma_\alpha^2}{\sigma_\alpha^2 + \sigma_e^2} \tag{C.68}$$

where ρ is the interclass correlation. This is the faction of variance in the error that is due to the individual specific effects. As it approaches one, the individual effect dominates the error and it is possible to attribute the variation to the individual.

A number of models have been developed to estimate cross-sectional time series data. These range from pooled OLS estimators, between estimators, first differenced estimators, and models for both random effects and fixed effects. I focus on two approaches for my analysis: the fixed effects and random effects models.

The fixed effect estimator is also known as the within estimator, named due to its focus on the within variation (over time). This approach uses time demeaned variables, the individual specific deviations of the variables from their time averaged values. Consider an incumbent party whose seat share in three elections are given by $\{.33, .48, .51\}$. The resulting time demeaned values would be $\{-.11, .4, .7\}$. Using OLS to estimate the model with the time demeaned variables gives the equation:

$$y_{it} - \bar{y}_i = (x_{it} - \bar{x}_i)'\beta + (e_{it} - \bar{e}_i) \tag{C.69}$$

It is important to note that the individual effects, α_i, drop out in this model. Since the individual effects are constant over time, subtracting the average individual effects equals zero ($\alpha_i - \bar{\alpha}_i = 0$) and cancel out. It is assumed that the time-invariant char-

acteristics are unique to each subject and therefore not correlated with any other subject's characteristics. A major limitation of within estimation is that time-invariant variables are dropped from the model and their coefficients are not identified. However, an advantage of this approach is that no observations are lost and the number of observations from this model equals $N * T$ (Kohler and Kreuter, 2005).

The random effects model is known as an estimation of the transformed model which can be written:

$$y_{it} - \lambda \bar{y}_i = (1 - \lambda)\mu + (x_{it} - \lambda \bar{x}_i)'\beta + v_{it} \tag{C.70}$$

where v_{it} is the error term and is given by:

$$v_{it} = (1 - \lambda)\alpha_i + (e_{it} - \lambda \bar{e}_i) \tag{C.71}$$

and λ is the random effects estimator which is not known, but can be estimated as:

$$\lambda = 1 - \sigma_e / \sqrt{\sigma_e^2 + T\sigma_\alpha^2} \tag{C.72}$$

which falls between zero and one. Unlike the fixed effects model, a major advantage of the random effects is that time-invariant variables can be included. This model does not sacrifice observations and the number of observations is equals $N * T$. The individual specific effects are contained within the error term. The random effects estimates can be thought of as a weighted average of the between and within estimates (Cameron and Trivedi, 2005; Greene, 2008; Wooldridge, 2012).

There are two key diagnostic measures that are useful in determining whether fixed effects or random effects are more appropriate. They are the Breusch-Pagan test and the Hausman test. The Breusch-Pagan test examines the OLS residual of the random effects model. This test examines whether σ_u^2 or $cor(u_{it_1}, u_{it_2})$ are significantly

different from zero. If the test is significant, the random effects model should be used instead of the basic OLS model. The Hausman test examines whether the estimates produced by the random effects model are more efficient than the fixed effects model. The Hausman test considers whether there is a significant difference between the fixed effects and random effects estimators. The test follows the chi-squared distribution where the degrees of freedom are equal to the number of parameters for the time varying regressors. If the result produced by the Hausman test is significant, the random effects model will produce inconsistent results and the fixed effects model should be used. If the test is not significant, the random effects model should be used (Wooldridge, 2010).

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