House Price Inequality and Political Polarization: Evidence from Korea

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This dissertation examines how district-level wealth inequality affects individual representatives. Polarization, where parties continue to grow apart and move away from the median voter, has been associated with inequality such that the wealthy voters are disproportionately represented in politics. However, we know little about if individual members also polarize (or diverge), moving from their own median voter and their rivals by representing only the affluent of their own district. I theorize that when a district is highly unequal, welfare-related issues become more salient in such a district, leading reelection-motivated representatives to focus on the preferences of their median voter strategically. Unlike commonly studied income inequality to measure constituency preferences, I use wealth inequality based on my fine-grained housing price data available at the district-level due to its increasing role in inequality and politics. I specifically investigate two main questions: (1) in the legislature, why do some politicians follow their party leaders while others do not?, and (2) during campaigns, why do some candidates behave similarly to their rivals while others diverge from them? I use the case of Korea, which experienced both rising wealth inequality and party polarization. I find that the incumbent representatives deviate from their leaders in the legislative voting when their district wealth inequality is high using roll-call votes. Analysis based on campaign brochures also reveals that in unequal districts candidates present similar campaign strategies, promising targeted benefits as much as their rivals. Detailed case studies on two congressional districts also generally support the theory. This dissertation contributes to our understanding of wealth inequality and representation in several ways. Drawing on the Korean case, I provide implications for other countries with a single-member district system on how individual representatives behave under high inequality. Also importantly, this dissertation serves as an example of how to use housing price data to measure districtlevel inequality. Lastly, it advances our understanding of candidate-level responsiveness and preferences using campaign brochures that I analyze using a text-as-data approach.

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1.0 Introduction

Political polarization has been found to be correlated with rising inequality such that the interests of the rich are disproportionately represented in politics (McCarty, Poole, and Rosenthal, 2006; Bartels, 2008; Garand, 2010, etc.). Although scholars have shown that party polarization, in terms of growing ideological distance between the major parties moving away from the median voter, is associated with inequality in many advanced industrial democracies, we know relatively little about whether individual representatives parallel their parties, representing only the wealthy, rather than their median voter, in their own district.

This dissertation seeks to examine several important questions on how representatives respond to their constituency depending on different levels of inequality. Under growing partisanship, will individual representatives target only the rich voters in their district if their party represents them? Can individual representatives ignore the majority voters who are not rich? To answer these questions, I build on the idea that individual representatives motivated for reelection will pursue to "affect their own percentages" with whatever resources available to them (Mayhew, 1974, p.32) and employ district-level analysis by considering different constituency conditions that could shape the individual members' decisions, whether they behave in the same way as their party or not.

I propose a theory on individual representatives' responsive behavior relying on the classical models of electoral competition: the Downsian model that predicts convergence of parties and the Directional model that expects polarizing or diverging parties. The two models, however, have generated mixed evidence since existing research has been so concerned with which model is right or which one has better explanatory power that it has overlooked the possibility of both models at working. Moreover, applying the two models to candidate-level analysis has been difficult because of the lack of data to measure campaign documents of the candidates who lost elections.

This dissertation contributes to the literature by offering a combined theory that provides the conditions under which individual representatives take a Downsian stance over the Directional approach or vice versa. This argument, which I will discuss in more detail in Chapter 2, posits that individual members have their own incentives to choose one of either competition strategies even though it is different from their party's metrics. I further argue that district-level inequality affects their decisions. In brief, representatives will converge in districts where inequality is high, whereas they diverge in districts with low levels of inequality. This dissertation contributes to the literature of electoral competition by offering insights into electoral incentives faced by individual representatives, which might also allow us to understand why existing work produced mixed evidence.

Alongside this overarching theory, the dissertation further contributes to the literature of legislative studies by setting forward two different contexts in which this theory for individual members could be applied to explaining representatives' behavior – in the legislature and during election campaigns – which are further developed in Chapter 4 and Chapter 5, respectively. As I develop this dissertation theoretically and empirically, I assume that representatives will always be mindful of their constituency conditions in both contexts. Nevertheless, parties play an important role in constraining the members. Chapter 4 explores how the overarching theory works through intra-party dynamics in the legislature, wherein individual representatives, as elected incumbents, are concerned about both party's legislative agenda and constituency interests by investigating how they vote on important bills. On the other hand, Chapter 5 pertains to inter-party competition during elections in which candidates should regard their party as an electoral machine but their rival candidates from an opposing party as well. The quantitative analyses in both Chapters substantiate the importance of district conditions for the behavior of individual representatives (both incumbents and candidates).

Much of the scholarship on polarization and representation using inequality as a main explanatory factor has focused on income inequality, although rising inequality is largely driven by increased housing prices in many advanced economies. Soaring wealth inequality is weakening the middle class, whose role is critical for democratic stability by mediating the conflicts between rich and poor and by influencing economic growth. However, we recently witnessed that larger groups of voters increasingly support populism as some middle-class voters have started to slide into relative poverty under rising wealth inequality around the globe. Wealth inequality also generates polarizing parties that fuel the left vs. right divide. Yet, little attention has been paid to the impact of wealth inequality on the responsiveness of individual representatives. Therefore, this dissertation project fills this gap by focusing on wealth inequality, considering it as voters' aggregate preferences. I also provide some novel insights into inequality by considering different structures of wealth inequality that could be thought of at the district-level. The idea of different structures of inequality allows us to expect different incentives for individual representatives.

The current dissertation also makes several methodological contributions. First, it exploits diverse sources and methods to understand individual representatives' behavior. In Chapter 4, examining if the incumbent legislators vote in line with their party, I use roll-call votes over three congressional terms based on the Item Response Theory. Unlike commonly used NOMINATE scores for estimating representatives' positions, the IRT approach is helpful in studying the voting behavior of representatives with only a handful of bills and over different terms. Moreover, Chapter 5 focuses on the electoral competition between candidates from the opposing parties relying on campaign brochures using the text-analysis method. The attention to candidates' campaign documents can be useful to broaden our understanding of responsive politicians in the electoral environment. Furthermore, it helps to refine our understanding by including the rival candidates, whereas much of the existing work relies only on incumbent representatives, which prevents us from understanding how the competitive nature of elections affects individual members. Investigating campaign brochures from Korean general elections using the structural topic modeling allows us to compare specific policy pledges made by both parties' candidates for all districts. Secondly, I build district-level wealth inequality data to consider varying district conditions, which, I argue, are determined by housing price distribution. By leveraging the publicly available housing prices data from Korea that are not easily obtainable in other countries, I built district-level housing price inequality data covering nearly one-third of Korean households between 2000 and 2016. This fine-grained housing price data allows us to test the theory at the level of individual representatives.

1.1 Puzzle

Dahl believed that "a key characteristic of a democracy is the continued responsiveness of the government to the preference of its citizens, considered as political equals (Dahl 1971, p.1)." However, scholars recently have shown that not everyone's preference is equally represented. As parties are polarizing, some scholars suggest that the governments reflect policy preferences of the rich, rather than those of relatively poor voters (Bartels, 2008). As I discuss in Chapter 2, according to Meltzer and Richard (1981, 1983), the decisive voters are those who earn the median income. Because there are more people earning less than the median income, it is puzzling that parties polarize, moving away from the median voter, rather than targeting those numerous voters under the median income. This national level story becomes even more puzzling if we consider individual politicians of each district.

Seeking for re-election, politicians take policy positions to please their constituents (Mayhew, 1974). Incumbent representatives may vote for bills in the Congress in a way that their constituents would agree with, because voters evaluate their representatives' legislative voting records and punish them if the representatives do not reflect the constituents' interests (e.g. Ansolabehere and Jones, 2010). Another way to please constituents is by informing them policy positions of individual candidates during election campaign, using campaign websites (Xenos and Foot, 2005), television advertisements (Kaplan, Park, and Ridout, 2006), or candidates' election flyers or campaign statements (Catalinac, 2018; Pereira, 2019). These campaign communication tools provide individual candidates with chances to appeal to their own constituency, sometimes promising specific policy plans. In short, both incumbent representatives and general election candidates will need to calculate their behavior strategically based on their constituency interests.

This dissertation departs from the insight that individual politicians may pursue different strategies because they face different electoral conditions such as different housing price distribution. In Chapter 2, I seek to theorize under what conditions some representatives follow their party's central position while others do not and why some candidates behave similar to their rivals, while others differentiate from them. Briefly, I contend that constituency inequality matters for representatives' behavior, whether they diverge or converge. I further argue that representatives from unequal district will care about the district's median voter, because economic inequality and redistributive issues will be salient in such a district.

In this chapter, I start with discussing a research puzzle that this dissertation seeks to solve and introducing my argument in brief. Then, I discuss why this dissertation relies on the case of Korea. Lastly, this chapter concludes by outlining the organization of this dissertation.

1.2 The Korean Case

This dissertation uses the case of Korea to understand how district-level wealth inequality affects policy preferences of the majority of voters and then those of representatives. The Korean case, especially for the period analyzed in this dissertation project (2000-2016), provides a useful opportunity for the analysis of how wealth inequality at the district-level influences the representatives' behavior.

First, Korea experienced both rising inequality and political polarization in a short period. The country's middle class, who once led to the country's democratization and sharp economic growth, has been shrinking recently. While two-thirds of Korean considered themselves middle class in the 1980s, today's Korea typifies the case of soaring wealth inequality and emergent class conflicts as an Oscar-winning film "Parasite" and a Netflix hit "Squid Game" showcase. At the same time, parties are polarizing, too. The long-time ruling conservative party, has been losing its political dominance and while the progressive left party has been gaining increasing support from Korean people.

Secondly, the Korean economy is characterized by continuous changes in housing prices seen all over the country. The Korean government's strategic policy on property tax and its impact on housing prices is also felt by the Korean citizens, and these are as much important as income. While many scholars have pointed out the importance of wealth and wealth inequality, including housing prices inequality, we have little knowledge about how district-level wealth inequality affects the preferences of voters and representatives. At least one reason for this is that because most of the existing studies rely on income data from a survey with only some representative samples, it is difficult to build a measure of inequality at the district-level with the small number of respondents per district. Korea is an ideal case because, on the one hand, since the housing market and housing prices are critical for most Korean citizens and important election issues, inequality in housing price distribution can be an alternative to income inequality. On the other hand, changes in housing prices are experienced across most of the electoral districts, allowing us to compare representatives of different constituency conditions. Therefore, I leverage the district-level housing prices data covering one-third of Korea's households. This approach improves the existing literature that commonly uses income data based on a survey with few respondents per electoral district.

Lastly, the Korean case allows us to exploit different methods to measure individual politicians' preferences and positions. First, most legislative voters are recorded as roll calls, providing a large amount of voting data to estimate the positions of individual legislative members. In Chapter 4, I draw on roll call votes cast during the three terms of the Korean National Assembly. Although roll call votes are studied mainly in the context of the U.S. (McCarty, Poole, and Rosenthal, 2006; Bartels, 2008; Garand, 2010, etc.) and European countries (e.g., Hix, Noury, and Roland, 2005) in studying the relationship between inequality and legislators ideology, we have seen no studies on Korea or Asian democratic countries examining the relationship between inequality and individual representatives.

In addition, in Chapter 5, I creatively use campaign brochures from the Korean general election for the National Assembly. Campaign brochures provide rich resources of policy preferences made by individual candidates unlike other campaign materials such as TV or campaign fliers used in the US. In addition, we can benefit from this unique data of campaign brochures because the process of distributing campaign brochures is centralized by the National Election Commission, allowing us to control for many other factors that might influence the delivery of candidate information to voters. All candidates running in the legislative election circulate their own election agenda within a 12-page brochure, which is delivered to every household by the National Election Commission, and thus campaign brochures can be useful for estimating the positions of individual candidates who are not elected. In this way, I fill the gap in the existing literature that relies only on roll-call votes that are limited to the incumbents.

1.3 Overview of the Chapters

Chapter 2 presents a novel theoretical framework for conditions under which representatives converge or diverge (polarize). I argue that politicians' policy preferences will depend on the types of issues that become salient in their district, which is determined by housing price inequality. Paying attention to different structures of inequality, I argue that when the structure of distribution is highly skewed such that a majority of the people is located around a certain low level of housing prices, economic issues become more salient in this district. This, in turn, will lead incumbents to focus on their districts' preferences rather than the party's central preferences. During campaigns in such a district, candidates will converge, taking similar campaign strategies to each other by appealing to the relatively poor voters.

Chapter 3 discusses why housing prices inequality needs to be considered when studying voters' preferences. In Chapter 3, I also describe how I constructed a fine-grained data set of housing prices in Korea between 2000 and 2016, covering one-third of households in Korea, and how the distributional patterns changed over the period.

Chapters 4 and 5 test the theory in different ways. First, Chapter 4 tests my theory in the context of incumbents. Relying on roll-call votes between 2000 and 2012, I find that the more unequal the housing price distribution of a district is, the more likely its representative is to deviate from their party's position. Chapter 5 then tests the theory focusing on how candidates represent their districts' interests during campaigns. I use the campaign brochures of over 400 candidates for the 2016 Korean General Election, which provides us with a unique opportunity to study the specific policy promises of both losers and winners. Using the structural topic modeling, I find that candidates from both left and right parties use similar strategies, using similar topics and similar number of words promising welfare-related targeted policies when housing prices distribution is highly unequal in the district.

Chapter 6 presents a qualitative case study that explicates the theory by focusing on how changes in a district's structure of housing price inequality over time are politically represented throughout different congressional terms. It provides detailed narration comparing two congressional districts that experienced political polarization and sharp changes in housing price distribution. To do this, I explore many resources, such as interviews, speeches, and written documents, to examine changes in the representatives' behavior over time.

Chapter 7 finally presents a conclusion by summarizing the dissertation's major argument and findings, addressing the dissertation's contribution, and proposing future research agenda extended from the dissertation.

2.0 A Theoretical Framework

2.1 Introduction

In this chapter, I theorize how the level of wealth inequality affects the representatives' responsive behavior. At its core, I contend that district conditions are determined by the wealth distribution of each district and that these varying district conditions influence the degree to which inequality-related economic issues become salient in each district. When wealth inequality is severe within a district, there will be more voters who consider inequality-related issues important, and representatives will have incentives to differentiate themselves from their party in legislative votes if the party's position is not aligned with the representative's constituency interests. Meanwhile, when a district's wealth inequality is high, I argue that candidates will behave similarly to their rivals, converging with them in terms of campaign strategies if doing so helps them attract more voters.

The remaining of this chapter proceeds as follows. In Section 2.2, I review the literature on theories of party competition, mainly focusing on the Downsian (proximity) model and directional model that will offer insights that can be applied to building my theory and analysis at the individual candidate level. Section 2.3 discusses the importance of the structure or patterns of inequality, rather than levels of inequality in measuring constituencies' policy preferences in order to better understand representation in reality. Then, in Section 2.4, I suggest a theoretical framework of wealth inequality and representative behavior combining different traditional theories of electoral competition to apply to individual level. Finally, Section 2.5 concludes this chapter by summarizing the theory and briefly introducing how the theory will be tested in the following empirical chapters using a unique set of the finegrained housing prices data at district-level.

2.2 Prior Literature on Models of Party Competition

As Fenno rightly put, we cannot think that "the act of representing can be separated from the act of getting elected (Fenno, 1978, p. 233)." Accordingly, a vast literature on representation and responsiveness, explaining the link between parties (or candidates) and voters, has been focusing on how parties and politicians compete to attract voters in elections.

Among a wide range of prior theories of competition, the two opposing models, the Downsian proximity model (Downs, 1957) and the directional model pioneered by Rabinowitz and Macdonald (1989), have been most influential, generating numerous empirical tests. However, most empirical evidence suggests mixed results. This dissertation joins the discussion on the competing theories of proximity and directional models, in part seeking to understand why the existing models yield mixed evidence and to solve this problem by providing a theory of under what conditions the Downsian proximity model holds or not. In doing so, I first consider the structure of inequality in the following Section 2.3 to argue that the structure of inequality matters for which issues become salient and then for which competition models take place.

In this section, I first review two theories of competition before I discuss different conditions for the Downsian proximity model to hold and finally suggest my theory.

First, the most classic explanation is the proximity model, which is based on the Downsian spatial theory of electoral competition. According to Downs (1957), voters in a given district can be put on an ideological spectrum from most liberal on the left side to most conservative on the right side. The *spatial* distribution of voters on this left-right ideological spectrum will be uni-modal, such that most voters are located in the center of the spectrum because, Downs assumes, most voters in our society are ideologically central and tend to prefer moderate policies. The Downsian theory further assumes that voters want to maximize their utility by choosing parties and candidates whose ideological distance or *proximity* on the same spectrum is closest to them. For example, centrist voters vote for centrist parties or candidates, rather than conservative ones who are farther from the center of the spectrum. It further predicts that, under a two-party system, office-seeking parties and candidates will take their positions converging to the ideological position and policy preferences of the median voter in order to attract as many voters as possible (Downs, 1957; Enelow and Hinich, 1984).

This view of spatial proximity which holds that voters and parties/candidates calculate the distance of ideological positions between them has been tested by many scholars (e.g. Cox, 1990; Calvo and Hellwig, 2011; Westholm, 1997; Fazekas and Méder, 2013; Lachat, 2008). Cox (1990) focuses on the effects of different electoral rules on policy positions of parties and candidates. For example, he theorized that low district magnitude creates centripetal incentives for parties and candidates to cluster on the centrist position while high district magnitude generates centrifugal incentives for them to ideologically diverge taking extreme positions. Calvo and Hellwig (2011) testing the theory of Cox (1990) argue that the effects of electoral rules depend on the size of political parties. Using survey data of the Comparative Study of Electoral Systems, Calvo and Hellwig (2011) show that non-proportional rules, which could discourage small parties, result in extreme policy positions of these small parties, whereas large parties may focus on the centrist policy position in non-proportional electoral system.

Meanwhile, many empirical studies have also shown that the Downsian model's predictions are not reflective of reality. For example, Lachat (2008)'s cross-national study on European countries shows that the proximity model works better in countries with higher party system polarization, whereas a recent study on European countries presents an opposite conclusion - the proximity theory is less powerful in countries with more polarized party system (Fazekas and Méder, 2013). With regard to these inconsistent conclusions, Grofman (2004) states that the Downsian prediction of convergence for a two-party system will not hold if some changes from the original strict assumptions were made in an analysis such as including multi-party system instead of two-party system. Also, while the proximity view implies that candidates running in general elections will locate themselves near the center of the voter distribution, empirical evidences are weak such that there have been candidates and parties in many elections that do not locate at the center of voters distribution. Most notably, Stokes (1963) was against the central assumption of the proximity model that the electorate can accurately perceive a party's ideological location and theirs, stating that "many of the issues that agitate our politics do not involve even a shriveled set of two alternatives of government actions (Stokes, 1963, p.372)."

The other conventional theory of competition is Rabinowitz and Macdonald (1989)'s "directional" theory. Challenging against the proximity model pointing out that empirical evidences are not consistent with the theory, Rabinowitz and Macdonald (1989) argued that voters have a "diffuse" sense of direction with respect to issues and voters and candidates choose one of the two sides of an issue, not based on the calculated distance between voters and candidates. Refusing the proximity theorists' perspectives that voters have clearly ordered policy alternatives on issues and can use them to estimate the distance, they argue that voters calculate their utility when they vote for a candidate (or a party) based on whether or not their preferences are on the same side and how strong the candidates' commitment to that preference (which is also called "intensity") is.

One of the benefits of this view is that, we can incorporate it into a theory of competition of, for example, how parties or candidates strategically control issues. Especially considering election campaigns in which different issues could become salient depending economic or social circumstances, parties or candidates could differentiate the level of emphasis on one issue over the other in a certain election (Rabinowitz and Macdonald, 1989). Although the directional theory of voting involves fundamentally different ways of thinking about competition and vote choice, it could also be considered as a spatial model because a voter's utility for a candidate or a party is based on the distance in this model, too.

It is worth noting the "discounting" model developed by Grofman (1985). Believing in the idea that voters can generally conduct checks-and-balances about performance of political parties and representatives, Grofman emphasizes the role of policy status-quo in voters' decision-making process, and argues that voters consider not only the currently suggested policy positions of parties or candidates, but also can calculate how successful those suggested policies will be when winning in consideration of the status-quo policies (Grofman, 1985). For example, currently having a very conservative representative, a centrist voter who supports moderate economic policies will vote for a leftist candidate because of possible barriers to modifying the status-quo conservative policy. In other words, voters take into account not only the distance between them and parties, but also potential changes from the present policy in the direction they want to change (e.g. Grofman, 1985; Lacy and Paolino, 1998;

Merrill and Grofman, 1999).

The introduction of the directional theory (and also discounting theory) challenging the classical Downsian view has generated a heated discussion about the effectiveness of both models, leading many scholars to compare these two different models and to provide support for the discounting/directional model.¹ For example, Adams, Bishin, and Dow (2004) studied the 1988 US Senate Elections to examine predictions made by both the proximity model and discounting/directional model. Their results support the later, that voters choose candidates who take liberal or conservative positions on the side of the issue reflecting their constituency's preferences, rather than candidates who take centrist positions targeting moderate voters. Other empirical studies on elections in some European countries have also lent support to the directional theory. For instance, in the case of Norway, MacDonald, Listhaug, and Rabinowitz (1991) show that voters do not support parties that take centrist issue positions and parties can garner votes only when they offer a strong stance on issues. Iversen (1994) also reveals that voters react to parties and party leaders with strong positions in seven European countries.

As discussed above, a heated debate over the two models has spawned numerous articles comparing the two, but leaving mixed empirical results. Lewis and King (1999) went so far as to state that none of the theories is a winner nor a loser to some extent. According to Lewis and King, "the data are not sufficiently rich to allow an appropriate test that can distinguish the opposing assumptions...(Lewis and King, 1999, p.22)." They also contend that the explanatory power of each theory depends on which assumptions are taken into analysis. Other scholars also joined this criticism. Tomz and van Houweling (2008) asserted that the measurement problems in testing competing models have led to inconsistent evidence, pointing out that other elements of candidates that are difficult to be measured (e.g. charisma or competence) could go into voters' assessment. In other words, voters could simply consider only these non-quantifiable elements of candidates without even taking into account any issue position. Tomz and van Houweling furthermore point out that the Grofman (1985)'s discounting theory could face measurement problems due to the difficulty of locating where

¹ I agree with some scholars who categorize the discounting and directional models into one category (e.g. Adams, Bishin, and Dow, 2004), because Grofman in his discounting model also theorizes competition based on "the directionality and magnitude of expected shifts from the status-quo" (Grofman, 1985, p.230).

the status-quo positions of policies are.

Many scholars have employed new methodological approaches in order to solve the problems in testing the proximity and directional theories against each other. For example, some scholars have developed formal models in which sets of conditions necessary to predict voting behavior under different theories are provided (e.g. Lewis and King, 1999; Tomz and van Houweling, 2008). Experimental approaches have also been increasingly employed by many scholars because they allow us to avoid endogeneity problems and measurement issues (e.g. Knight, Li, and Woodworth, 2017; Tomz and van Houweling, 2008; Claassen, 2007; Kropko and Banda, 2018, etc.). Using survey experiments, Tomz and van Houweling (2008) test three major theories of voting choice (the proximity, discounting, and directional theory) and show that more than half their respondents behaved under proximity rule. Kropko and Banda (2018), who also rely on a survey experiment, support for the directional model especially when the issues are represented in terms of degrees of intensity. However, their study also supports for the proximity model if an issue scale is represented as a range of policies. Claassen (2007) takes advantage of the experimental approach by asking subjects to locate their ideological position by themselves on a left-right spectrum and then by having the computer decide two fictional candidates' locations based on the subjects' location so that problems such as people who tend to consider the candidate similar to them moderate can be avoided.

This dissertation joins the discussion on the competing theories of proximity and directional models, in part seeking to understand why the existing models yield mixed evidences. In doing so, I first consider the structure of inequality in the following Section 2.3 to argue that the structure of inequality matters for which issues become salient and then for which competition models take place. As I discussed in Chapter 1, I focus on how individual representatives - elected officials and candidates - behave, keeping electoral competition in their minds and seek to predict conditions under which they take whether proximity or directional approaches at the district-level.

As Snyder (1994) stated, "parties are not monolithic, but collections of self-motivated officeholders." Therefore, even if parties converge as the proximity model predicts or diverge as the directional model claims, individual party members have their own incentives to choose

one of either competition strategies. In other words, even for the same party members, it is possible for some members to be Downsian and for some others to be directional, depending on the incentives with which their constituency provides them. This dissertation contributes to the literature of electoral competition by offering insights into electoral incentives faced by individual representatives, which might also allow us to understand why mixed evidence exists in the literature.

Next, in Section 2.3, I further argue that individual members' electoral incentives are shaped by aggregate constituency preferences. Following the literature using inequality in a national income distribution as a measure aggregate preferences for national redistribution, I consider district-level inequality as a critical determinant of constituency policy preferences.

Unlike the existing work, however, I provide some novel insight into inequality, which I will discuss in the following section thoroughly. In brief, I first consider wealth inequality, rather than income inequality, as a constituency' aggregate preferences. Additionally, I conceive of different structures of wealth inequality at the district-level in an effort to provide a conceptual grip on the different incentives for individual representatives to choose between the two competition models. Then in Section 2.4, this dissertation further contributes to the literature by offering a combined theory that politicians converge in districts where wealth inequality is high whereas they diverge in districts with low levels of wealth inequality, which is corroborated by empirical tests in the following chapters using a unique set of fine-grained housing prices data at district-level.

2.3 Variant Structures of Inequality

In the previous section, I reviewed conventional models of electoral competition that explain the link between parties (or representatives/ candidates) and voters. Electoral competitions necessarily involves attracting as many votes as possible by addressing what voters want. Accordingly, the representation scholarship has measured what voters want, or voters' preferences, and how these are in line with policy positions of parties or representatives. Thus, measuring voters' preferences is the first step in examining if politicians reflect them well or not, which in turn help how competitions occur.

Because the focus of this dissertation is how wealth inequality affects representatives' behavior, I discuss the scholarship using inequality as aggregate preferences of voters. While this section discusses voters preferences, I will discuss later measures of legislative behavior (Chapter 4) and candidates (Chapter 5) will be discussed in each chapter. However, I note that there are different ways through which voters' preferences are measured, such as public opinion survey, public attitude survey, etc., however, in this dissertation I focus on measures of inequality. (see, for example, Canes-Wrone (2015) for a detailed review of the literature using public opinion survey.)

In the following, I review the extant literature on representation relying on income distribution inequality to proxy for preferences of voters and representatives. Then I discuss the limitations of simply using income inequality to explaining politicians behavior and voters' choice, and then suggest different structures of inequality we can conceive of and the implication of each inequality structure. Then I introduce housing price inequality as a novel useful measure of voters' preferences.

2.3.1 Income Inequality as Preferences in the Previous Literature

A vast scholarship explaining representation relies on levels of inequality in income distribution to proxy for voters' policy preferences (e.g. McCarty, Poole, and Rosenthal, 2006; Bartels, 2008; Garand, 2010; Tausanovitch, 2016; Tavits and Potter, 2015). Recently, many scholars studying unequal responsiveness in the U.S. found several implications of income inequality, suggesting that elected officials do not represent what the majority of voters want. For example, Bartels (2008)'s seminal study show that the rich have more influence on politicians and policies are more responsive to the needs of rich income groups (Bartels, 2008). Similarly, McCarty, Poole, and Rosenthal (2006) presents that the Republican and the Democrat have been further apart in terms of parties' ideology, showing that constituencies of more ideologically conservative representatives have higher levels of median income. In short, inequality has been used as a measure of voters' aggregate preferences.

As we have discussed in the previous section, the median voter theorem by Downs (1957)

assumes that the major parties or candidates under two-party systems try to attract the median voter, who are located in the middle of the voters' ideological distribution and support moderate policies, to win elections. Following the logic of Downs (1957) and building on their previously developed model of the size of government (Meltzer and Richard, 1981), Meltzer and Richard (1983) argued that the demand for redistribution for public goods rely on the decisive voter, who is the median voter in a two-party system and built a model as following:

"Following Downs (1957), many models of the demand for government services rely on a representative voter who makes the decisive choice (or choices) for society. Roberts (1977) shows that with universal suffrage and majority rule, the median voter is the decisive voter in a specific kind of single issue election. In our previous work (Meltzer and Richard, 1981), building on Robert's result, we develop a general equilibrium model in which the share of income taken in taxes rises with the difference between mean income and the income of the decisive voter. Franchise extensions and changes in relative productivity alter mean income relative to the income of the decisive voter and change the tax share. Changes in the proportion of the population receiving social security benefits, not subject to tax, increase votes for higher taxes and redistribution. All voters recognize both the costs and the benefits of changes in the size of government; the decisive voter chooses the optimum size (Meltzer and Richard, 1983, p.404)."



Figure 1: Distribution of Wealth (income/housing prices etc.) of a Country

Note: Adopted from Meltzer and Richard (1983).

According to Meltzer and Richard (1983), the gap between the median income and mean income ('d' in Figure 1) is most important to determining redistributive policies such as tax rates. They explicitly adopt the notion that, in a society where everyone can vote, the median voter in the Downsian sense (i.g. ideologically central or moderate) earns the median income and this median voter is decisive in determining the size of government. Voters below the income of the decisive voter (who earns the median income) choose parties or candidates who favor higher taxes for more redistribution while voters above the income of the decisive voter want to lower taxes and favor less redistribution. Income distribution of a country usually resembles Figure 1, which is a right-skewed (or positivelyskewed) distribution with a long right tail, because there exist more people at lower levels of income at the national level in general. In short, the Meltzer and Richard model implies that the level of inequality of a country, which depends on 'd' in Figure 1 determines the tax rate preferred by the median voter and that parties in a two-party system will converge on that median voter's favored tax rate.

Even though there is a vast literature using levels of income inequality (the Gini-coefficient being the most commonly used measurement) as a proxy for voters' preferences for general economic policies such as redistributive spending (e.g. Bartels, 2008; McCarty, Poole, and Rosenthal, 2006; Garand, 2010; Tavits and Potter, 2015, etc.), empirical evidence challenge the Meltzer and Richard's model showing that poor voters who are numerous are not well represented in the politics (e.g. Bartels, 2008; Hayes, 2012). The model also leads to the question of why we observe increasingly intense political polarization in which the major two parties growing ideologically further apart (e.g. McCarty, Poole, and Rosenthal, 2006; Anderson and Beramendi, 2008; Garand, 2010, etc.)? Empirical evidence from these works further raise several theoretically important questions. Is the traditional model by Meltzer and Richard (1983) on redistribution which argues that the median voter decides levels of redistribution fundamentally wrong? Barnes (2013) studying the 50 states of the U.S. shows that both the income of the median voter or the income gap such as 'd' in Figure 1 do not matter for the redistribution level measured with the public welfare spending.

An alternative question would be whether there is any certain circumstances under which the relationship between income inequality and preferences for redistribution to be politically important and addressed by their representatives? Aldrich (1983) found that two parties deviate from the median voter's position when they need to appeal to core constituencies to satisfy campaign activists and also to boost turnout, especially in the primary election in the United States. Iversen and Goplerud (2018) argue that issue salience and the distribution of preferences affect redistribution and can explain the phenomenon that two parties abandon the median voter's position. They also pointed out in the context of multidimensional model that in "a three-class world" where the middle class matters redistribution will be affected by how strong preferences for a second dimension issue the middle class has (Iversen and Goplerud, 2018, p.307), which is pertinent to Lupu and Pontusson (2011)'s argument and also to my theory that considers the distance between the voter with mean level housing price and the poor and the distance between this voter and the rich.

As parties or candidates want to win an election, why would they be not responsive to the median voter who tends to favor more redistributive policies? To solve this question, I carefully consider different structures of inequality in wealth distribution. In doing so, I also call attention to a district-level inequality when measuring voters' policy preferences to understand politicians' responsiveness better. I argue that district-level consideration will help solve the limitations of existing work. For example, the extant literature does not provide answers to theoretically important questions such as why polarization occurs or whether the median voter theory works, which are caused by limited data to test the theories. My dissertation provides an opportunity to test these theories by overcoming the limited data problem with constituency-level inequality data by using fine-grained housing prices data to test the theories at the constituency level. The main benefits of my data, to which I will return to discuss in detail later, is that it allows us to consider different distributional patters of inequality, and to test the theories for individual representatives with matched constituency level data of inequality. In addition, I use housing prices data instead of income data, which help us understand voters' preferences aggregated at the electoral district level.

In the next section, I introduce the concept of "structure (or patterns) of inequality," or "skewness of wealth distribution," conceive of different structures of inequality, and then build my theory incorporating different patterns into explaining conditions under which different models hold.

2.3.2 Considering Variant Structures of Inequality

In this section, I conceive multiple patterns of inequality at the district-level distribution building on Lupu and Pontusson (2011). Unlike other scholars simply using levels of income inequality, Lupu and Pontusson argue that what matters is not the level of inequality, but the structure of inequality.² They claim that the latter helps us explain why different countries have different social preferences for distribution even though almost all countries have more poor citizens than the rich. Instead of simply looking at the distance between the median and mean income like Meltzer and Richard (1981, 1983), Lupu and Pontusson (2011) focus on the location of the middle income voters in a society relative to the rich or the poor. Following Iversen and Soskice (2006) who emphasized the significant roll of middle-income class in determining a society's preferences of redistribution, Lupu and Pontusson (2011) contend that "middle-income voters will be inclined to ally with low-income voters and support redistributive policies when the distance between the middle and the poor is small relative to the distance between the middle and the rich (Lupu and Pontusson, 2011, p.316)." To be clear, Lupu and Pontusson treat the preferences of the median voter and the preferences of middle-income voters in the same way as I discussed earlier regarding the theory of Meltzer and Richard (1983). Furthermore, building on the social affinity theory (e.g. Shayo, 2009) that people tend to identify with a social group that bears similar characteristics such as class or race, they argue that if middle-income voters are relatively closer to low-income voters than to high-income voters, the level of support for redistribution increases as they share more similarities with low-income voters.

Although the argument of Lupu and Pontusson (2011) is based on a cross-national analysis which examines the effect of the structure of income inequality on governments' redistributive policies, we can use these insights into the role of the structure of inequality in wealth distribution to district-level analysis, too. I draw upon their theoretical framework in order to argue that individual representatives will respond to their constituency preferences considering the structure of inequality of their own constituency. Again, considering district-level distribution of income or wealth is important, because in this way we can reflect alternative realities such that there are many rich people in a district unlike the universally right-skewed distribution that we can observe at the national level.

Lupu and Pontusson (2011) conceptualize the structure of inequality using "separate

²To note, Lupu and Pontusson (2011) is not the only work using income inequality structure to examine the social effects of inequality. They build on Kristov, Lindert, and McClelland (1992) who study the relationship between conditions of 'social affinity' measured as skewness of income distribution and group formation.

measures of income differentials in the two halves of the income distribution (2011, p.319)." They look at the 90/50 income ratio (the income earned by individuals at the 90th percentile compared to the incomes of those at the 50th percentile, which is the middle-income) and the 50/10 income ratio (the income earned by individuals at the 50th percentile compared to the incomes of those at the 10th percentile). Then they argue that the larger the 90/50 income ratio, the more support for redistribution and that the larger the 50/10 ratio, the less support for redistribution. Their measure of the structure of inequality, which they also refer to as "skew" of distribution, is "the 90/50 ratio divided by the 50/10 ratio (Lupu and Pontusson, 2011, p.319)" and is designed to reflect the importance of the middle-income voters' relative location to the poor or to the rich.

While taking both the role of middle-income voters (Iversen and Soskice, 2006) and the insights of Lupu and Pontusson (2011) on the importance of the structure of inequality seriously, I further suggest several more potential structures of inequality that we can think of at electoral district level, which are illustrated below. I use "structures" of inequality and "patterns" throughout the dissertation.

There are at least four possible patterns of distribution: 1) A positively skewed distribution, 2) a negatively skewed distribution, 3) a normal distribution and 4) a bimodal distribution. Figure 2 illustrates these four possible patterns of inequality for hypothetical electoral districts within a country. Most of these patterns may not be seen at the nationallevel. To be clear, I do not necessarily differentiate, for example, District A and A' (or District B and B'), because I conceive of the two districts as the same pattern, a rightward skewed distribution(or leftward skewed distribution in B and B'). District A' (and District B') is illustrated for the purpose of providing the idea about the role of skewness of wealth distribution.



Figure 2: Potential Patterns of Distribution of Wealth (income or asset)

Note: The X axis represents income/wealth and the Y axis represents population.

First, a hypothetical District A in Figure 2 represents a common pattern of wealth distribution that we usually observe at the national level. This distribution of District A

is positively skewed with a right tail such that there are a greater number of poor people than the rich at the national level as in the cases of most of the countries in the world. A hypothetical District A' resembles District A, however, it is more skewed with a longer right tail and farther distance between the median-wealth level and the mean-wealth level than in District A. This suggests that District A' has many more poor people than the rich, accordingly, more *unequally poor* than District A.

On the other hand, District B shows a negatively skewed distribution with a left tail, such that the district has a greater number of rich people than the poor. This pattern is uncommon at the national level, but it is possible to conceive of a congressional district where in most of the people are rich. In a similar logic to District A', a District B' resembles District B, but it is just more skewed with a longer left tail. It also illustrates a farther distance between the median-wealth level and the mean-wealth level than in District B, although now we have more people above median wealth level unlike District A'. This suggests that District B' has many more rich people than the poor, accordingly, more *unequally rich* than District B.

Then, there could be a district with a normal distribution such as a hypothetical District C in Figure 2, in which the distribution is not skewed rightward nor leftward. In District C, many people are located around the mean-level of wealth, which overlaps with the median-wealth level, of the district. Finally, we can also think of a district with a bimodal distribution as featured in District D, where many people live either at relatively low wealth levels or relatively high wealth levels. This district, too, is not skewed and people at both mean and median wealth levels overlap like District C. In other words, there is an equal number of poor and rich people in both districts.

These illustrated patterns and comparing them help us more clearly understand the framework of Lupu and Pontusson (2011) on the structure of inequality as well as the role of median-wealth voters (or median-income voters), whether they ally with the rich. Comparing District A and A', the median-wealth voters in District A' are more likely to support redistributive policies than those in District A, because the distance between the median-wealth voters and the rich voters are narrower in A than in A'. According to the logic of Lupu and Pontusson (2011), voters at the median wealth level are more likely to ally with the rich in District A than in A'. This could also mean that, because the median voters are close to the

rich, legislators would be able to focus on the rich as it is less likely for them to be punished by the numerous median wealth voter in this case. Similarly, voters at the median wealth level in District B' are less likely to support redistributive policies than those in District B. District C and D have different patterns of wealth distribution. However, both distributions are not skewed and they are represented with the voters with the median-level wealth who are equally distant to the poor and to the rich.

The consideration and comparison of different patterns of wealth distribution helps us conjecture why levels of support for redistributive policies differ across districts, as it does for the cross-country comparison in Lupu and Pontusson (2011), by looking the relative location of the voters of the median wealth. Furthermore, this will influence how parties and candidates in a two-party system represent voters' preferences and calibrate their strategies in electoral competition. In short, not all districts in a given country are the same. In the next section, I build my theoretical framework and predictions based on the above discussions.

2.4 A New Theoretical Framework

Having considered different patterns of inequality, this section builds a *combined theory* of competition drawing on the insights of conventional models of electoral competition I discussed earlier: proximity and directional models. In the previous section, I showed that the existing research has been developed mainly under the two competing models that are based on different assumptions. As I develop a *combined theory of competition*, I first suggest accepting assumptions about behaviors of voters and parties taken in both the proximity and directional models. Second, I focus on the conditions under which voters, representatives and election candidates make decisions based on the proximity or directional metrics. The core intuition of my theory is that when a district's level of inequality is high, such that the district's distribution is right-skewed with many poor voters, economic issues such as redistributive policies become more salient than other issues and voters will favor politicians who suggest redistributive policies that are closest to the constituency's preferences for redistribution. On the other hand, when a constituency is less skewed, economic issues
become less salient, and voters and candidates may focus on issues of social dimensions. I then introduce the main testable hypothesis for the following chapters and concludes this section by summarizing my theory.

To develop my theory combining the proximity and directional models, I accept the assumptions about voters suggested in both models. That is, I accept the Downsian assumption in the proximity theory that voters have a set of clearly ordered policy preferences (Downs, 1957) as well as the assumption of the Rabinowitz and Macdonald (1989)'s directional theory that voters have diffuse preferences over the set of salient political issues, and that voting is decided based on which party (or candidate) proposes policies in the same side. While the assumption of each model about voting choice has its own merit, it is also possible to assume that voters latently have both voting choice metrics, rather than holding only one of either metrics as assumed by many scholars studying as if the two models are competing with each other (e.g. MacDonald, Listhaug, and Rabinowitz, 1991; Westholm, 1997, etc.). This effort of integrating the two theories of voting is in part based on the insight of Adams and Merrill III (1999), who rightly point out that "the proximity and directional components alone are insufficient" (1999, p.765) to explain the reality where in we observe diverging policy programs and representatives who are more extreme than their constituencies' general policy preferences. Adams and Merrill III (1999) contend that considering voters' non-policy motivations such as socio-demographic features and partial partial to explain the above mentioned phenomenon and suggest combining the directional and proximity theories. Merrill (1993), also contrasting the proximity and the directional models of voting using elections with more than two candidates, argues that mixed proximity and directional models may provide more plausible descriptions of voter behavior than either pure model. Morris and Rabinowitz (1997) also argue for "the coexistence of directional and proximity voters" and suppose a constituency in which some voters follow the proximity model while others behave based on the directional model depending on the the homogeneity of an electorate. In addition, Kropko and Banda (2018) claim that an electorate can be presented with both proximity and directional ways of voting and the choice is affected by how issue positions of candidates are understood by voters determine which model becomes more prevalent.

While accepting the assumptions of both theories, I contend that the two perspectives on

competition may turn to different types of issues. On the one hand, the proximity model's assumption about voters' clearly ordered policy preference will be more relevant to economic issues concerning redistribution, social spending, and unemployment compensation, etc., rather than non-material issues such as religion, abortion and so on. As I mentioned earlier, how issues can be understood affects which models are chosen (Kropko and Banda, 2018). If issues are presented with a specific scale of its policy implication, such as potential material benefits of a government's economic policies, voters will follow the proximity model because policy implication to individual voters tends to be relatively clear and visible. For instance, an unemployed voter could calculate how much they would earn from the government if unemployment compensation program increases the amount of compensation. On the other hand, the directional model's assumption that voters have "diffuse" preferences and direction over political issues will be relatively more pertinent to non-material issues such as abortion and religion, etc. It is because it could be difficult for voters to calculate tangible material benefits from policies related to these non-material issues. Rather, for example, a voter who is against same-sex marriage cannot calculate the benefits, but they can express in a directional way: how strongly they agree or disagree with same-sex marriage (Kropko and Banda, 2018). Therefore, the two theories, I argue, can be applied to different circumstances (different types of issues: e.g. material vs non-material issues) according to what types of issues are more salient at the time of election.

Although voters and parties may have both the proximity and directional metrics latently, which choice becomes more prevailing could differ across different elections (Adams and Merrill III, 1999; Tomz and van Houweling, 2008). It is because different issues are politicized by strategic parties and candidates depending on the economic and social circumstances facing different elections (e.g. Budge, Robertson, and Hearl, 1987; Tavits and Potter, 2015, etc.). Some parties and candidates choose to politicize the first dimension issues such as economic policies while others choose to politicize the second dimension regarding value-based issues (Tavits and Letki, 2014). According to the "salience theory," parties "compete by accentuating issues on which they have an undoubted advantage, rather than by putting forward contrasting policies on the same issues (Budge, Robertson, and Hearl, 1987, p.391)." Many political scientists view economic circumstances such as income inequality and wealth

distribution affect which type of issues become salient during elections. For example, leftist parties have an incentive to use economic interests of the poor when levels of inequality are high (Tavits and Letki, 2014). Tavits and Potter argue that, because a higher level of income inequality means that there are more people with leftist economic preferences, leftist parties will gain more votes by politicizing leftist economic policies, for example, higher levels of redistribution and social spending (Tavits and Potter, 2015, p.745). According to Singer (2011), the importance of economic issues to voters differ across elections as well as across districts. He finds that poor voters will consider economic issues more important facing elections than other wealthier voters. Accordingly, leftist parties will politicize economic issues by highlighting a high level of inequality and the need for more redistribution in order to maximize their electoral success. On the other hand, rightest parties will emphasize valuebased issues such as religiosity and ethnicity since the wealthy, who are not numerous in an unequal society, could try to build a coalition where they could attract more voters (Tavits and Letki, 2014; Kitschelt, 1992). In sum, a high level of inequality leads leftist parties to emphasize economic issues while right parties have to strategically resort to noneconomic issues.

I now build a new theory based upon the insights of Tavits and Letki (2014) and Tavits and Potter (2015) discussed above, for district-level analysis, but with some different expectations about individual politicians because they may have different electoral strategies from their own political parties (or from other members of their own political parties). For example, individual candidates face different constituencies, so they develop different strategies (Fenno, 1978). In the US primary, candidates may pull away from a centrist position (Burden, 2001, 2004). Strategies of candidates (or elected representatives' policy positions) could shift due to changes in the economic and social conditions of their constituencies, resulting in different issues politicized in different elections (Singer, 2011). In this research, I claim that candidates' strategies should vary across electoral districts according to different patterns of wealth distribution, which in turn affect what type of issues become relatively more salient in different districts. Furthermore, I argue that candidates running in highly unequal districts will have an incentive to activate the election emphasizing economic-interests based issues such as redistributive policies, and candidates from leftist parties will have more incentives to do so. As Tavits and Potter (2015), I argue that the greater the number of voters who favor higher levels of redistribution, the more benefits will the leftist candidates receive by activating inequality-related economic issues. If we employ this logic to district-level analysis, we can assume that a candidate from the leftist party will focus on the economic issues such as inequality and redistribution. What is different in the application of the logic of Tavits and Potter (2015) in this unequal district is that the rightist candidate will be forced to converge to the policy preferred by the poor majority, rather than choosing to emphasize non-material issues. At district-level, the rightist candidate (and also elected representatives) should behave strategically focus on the same issues that become salient in his or her district, unlike their rightist party or most of their party members. Thus, both parties' candidates, motivated by (re)election, will tend to focus on the median voter by emphasizing economic issues even if they are from different parties.

In other words, when the distribution is positively skewed (skewed to the right) such that there are many poor voters in a district, the economic policy interests of the voter with the median income will tend to be similar to those of the leftist party, which pursues pro-poor economic policies. In this case, the rightist party's member will also have to focus on the median voter in terms of income level in order to win in this district, forcing him or her to distance from the party's central ideological stances, pursuing pro-rich economic policies. The degree to which the unequal distribution is skewed will determine how far the rightist candidate move away from the party's central position.

Based on the discussion so far, I contend that political scientists would gain significant leverage by exploring when and how different competition models (whether proximity or directional) hold, by examining different structures (patterns) of inequality and types of politicized issues simultaneously at district-level. Because individual politicians face different types of voters' preferences from district to district, they will behave differently. Especially facing elections, representatives will think about "my district" and its district characteristics (Fenno, 1978). Also, suppose a candidate changed from the previous rich district to the current very poor one. This candidate will run separate campaigns depending on what issues are salient in their new district, probably because of a different wealth distribution. In short, my main argument is that different patterns of distribution at district level, as shown in Figure 2, constitute constituencies' preferences and influence which issues become politicized when election is taking place, which in turn determine why some representatives and candidates converge (following the proximity model) and others diverge (following the directional model), reflecting their constituencies' preferences to win (re)election. To summarize, the logic of my argument is illustrated in Figure 3.

Figure 3: Summary of the Argument



Building on the argument above, now I introduce theoretical expectations for each pattern A/A', B/B', C and D from Figure 2. First, in districts of positively skewed distribution, such as our hypothetical District A (and A') in Figure 2, there are a lot of poor people below the median voter's wealth level. I previously argued that in a district with a rightward skewed distribution such that it is more likely that the voters with the median wealth ally with the poor than with the rich, inequality becomes a salient issue. During election campaign, both candidates will have an electoral incentive to politicize economic interests if the district's inequality is high. Therefore, redistributive policies will be needed for the two candidates to catch the median-wealth voter and those below under a two-party system. Parties or two candidates could gain more than 50 percent of the votes needed to win election just by focusing on the pro-poor policies and abandon the ideologically moderate voters. When it comes to the legislative behavior, a representative elected from this district will have an incentive to target the poor voters and thus to support increased taxation or redistributive policies regardless of their party. In a more unequal district such as District A', these incentives will become greater. To sum, this pattern of distribution will lead to convergence of candidates in their policy positions. As the candidates and representatives will have close policy platforms concerning redistributive policies to please the median-wealth voter, this district could be understood under a proximity model.

Figure 4: A Hypothetical Candidates' Positioning in Unequally Poor District



As in previous research, we assume that the left-right political dimension captures the most essential parts of ideology both on the individual and on the party level. Figure 4 illustrates a hypothetical candidates' positioning on an ideological spectrum in an *unequally poor* district, that is skewed rightward like District A and A'. C_L and C_R , two candidates from a leftist party and a rightist party respectively, are located on an ideological spectrum. And voters' preferences of district, which is determined by the level of skewness of the distribution, is represented as V in green. In this unequal district with a lot of poor voters, the positions of both candidates will be on the left side. At the same time, both of them will try to attract the median income voter by converging on that voter's policy preferences with regard to economic issues. It should be noted that even if the candidate from a leftist party proposes extremely progressive policies due to the high level of inequality, the voter of the median wealth may not want to go that far left in this unequally poor district.

Secondly, in districts of negatively skewed distribution, which is introduced as our hypothetical District B and B' in Figure 2, there are a lot of rich voters above the median voter's wealth level. In districts with this type of pattern, leftist parties will have less (or no) incentive to attract the poor. However, as the median voter's level of wealth is closer to the rich than to the poor, these voters are more likely to ally with the rich to protect the economic incentives for the rich people, making the candidates to ally with the rich. For example, they could oppose to pro-poor redistributive policies. They may also want to promote tax-cut policies in a way that favors the rich. In short, an *unequally rich* district with a lot of wealthy voters will motivate policicians to policie pro-rich economic policies.





Figure 5 hypothetically illustrates how candidates will position in an unequal district with a lot of rich people. Two candidates C_L and C_R are located on an ideological spectrum and voters' preferences of district, which is determined by the level of skewness of the distribution, is shown as V in green. In this unequal district with a lot of rich voters, the positions of both candidates will be on the right side. At the same time, both of them will try to attract the voters at the median-level of wealth by converging on that voter's policy preferences.

Now we turn to districts with distributions of wealth that are not skewed, such as our hypothetical District C and D in Figure 2. First, we have a district with a normal distribution of wealth, as in District C, where a lot of voters are around at the median-level of wealth. Because the median-voter's wealth level is in the middle of wealth distribution, we can assume that they will not ally with the poor nor the rich in terms of matters of economic interests. In this case, a leftist candidate can move from the center to the left while a rightist candidate can move toward the right side. It is because voters on the left will vote for a candidate who is located on the further leftward side than them since voting for the candidate from the right (conservative) party will make the voter worse off than when the voter vote for the right voter. It is because the right party's candidate will reduce redistribution when they win. The voter of the median level of wealth will be indifferent about the redistribution policy. For this median wealth voter, therefore, other dimensions may matter more than redistribution, leading the two parties to make other issues that each party is considered to own to attract the voter in the middle of wealth distribution.

Normal distributions will result in a situation where there is no economic interests-based issues politicized. So for representatives of a leftist party, they should be able to attract the median wealth voter by focusing on other issues than issues related to inequality or redistributive policies. And the rightist party's representatives will have less incentives to appeal to voters with emphasis on pro-rich issues such as tax-cut policies.

In these districts with a normal distribution, both parties' representatives will have more ideological appeal to voters to differentiate them from each other. Social issues that are dominated by each party will be brought up for each side of voters, and for the median-voter as well. In this type of district, there are equal number of voters on the left and right side of income distribution, two candidates will have a chance to win election by gaining a majority vote without having to go beyond the median income of different side. For example, for the Left party candidate, he or she can win election without appealing to the voter at 51st percentile of income distribution.

Then we have a district with a bimodal distribution of wealth as shown in District D in Figure 2. This distribution is also not skewed. It has two peaks implying that there are two different groups: one group is of a lot of the rich and the other group is consisted of a lot of poor voters. This indicates that there could be two different types of interests or issues that politicians need to cater.

Although District D has a bimodal distribution, we can apply the same logic as in District C to explaining why representatives would abandon the ideologically median voter in District D. In this case, too, there are equal number of voters on the left and right side of wealth distribution, two candidates will have an equal opportunity to win by gaining a majority vote without being ideologically moderate. In this District, issues of inequality will be salient only to the half of the population who are on the left side of the income distribution, so only the left party's candidate will appeal to those with redistributive economic policies. As the level of wealth of the median-voter is not closer to the rich group of people, nor to the poor one, issues related to inequality or pro-poor policies will not be politicized by leftist parties because if they do so, they may risk losing the median voters with the middlelevel wealth and losing an election. As I mentioned earlier, when inequality is high, leftist parties emphasize economic issues while rightist parties focus less on redistributive economic policies Tavits and Potter (2015). Based on this, I argue that rightist parties will have even more incentive to emphasize non-economic policies or values-based issues in a relatively equal district. Moreover, the median-wealth voter, who is the voter at the 50th percentile of wealth distribution, will be neutral about economic policies of either sides. In this case, candidates will have to attract the voter in the middle by focusing on the non-economic issues (e.g., party's agenda on certain values or other second dimensional issues).

Based on the discussion above, I predict that the two candidates running for this relatively equal district with a bimodal distribution will focus on their own sub-constituency, rightist party's candidate targeting the group of rich voters and the leftist candidate appealing to the group of poor voters without politicizing economic issues. In the legislature, elected representatives from this type of district will be also reflecting his or her sub-constituency, which could vary across different congressional terms depending on which party's candidate is elected. In sum, regarding districts of the two types of unskewed distribution of wealth, I predict that candidates and representatives will behave based on the directional theory in equal district as depicted in Figure 6.

Figure 6: A Hypothetical Candidates' Positioning in (Relatively) Equal District



In short, my argument is that representatives elected from more unequal districts will be more likely to focus on the economic interests, following the preferences of constituency in redistribution. In other words, representatives from relatively equal districts will be less likely to emphasize economic interests, but more likely to focus on issues of social dimensions supported by their own party. Thus, the main testable hypothesis for the empirical analysis accounting for candidates positioning during election campaigns is that candidates from two parties running in unequal districts will be more likely to appeal to economic interests of the median voters, so they will converge. On the other hand, two candidates running in less unequal districts will focus on social issues supported by their own party, diverging from each other.

To summarize, we have one clear expectation about the consequences of different patterns of inequality in wealth distribution: the higher skewed the distribution, the more salient the economic-interest based issues representatives and candidates reflect in their behavior, leading to more likelihood to follow the proximity (Downsian) model of electoral competition.

It is important to note that my theory does not claim that all parties, representatives and candidates must choose one strategy over the other. Also they may end up choosing the wrong strategy, perhaps risking many votes and chances of winning. There could be some new politicians who may also choose the least ideal strategy for the district, intentionally and strategically, because they just want to promote themselves as rookies in the party machine. So my theory is to claim that electoral strategies of legislative candidates from the same party could differ across different districts depending on district characteristics and that these heterogeneous district conditions also affects the elected incumbents' behavior in legislative voting.

This dissertation contributes to the literature by examining the electoral conditions under which politicians can be more liberal or more conservative than other members of the same party and when others could remain more along the party's central position. This is possible because of the unique fine-grained data on housing price that I will introduce in detail in Chapter 3. It allow us to have wealth distribution at district level and thus policy preferences of each district that a legislator and legislative candidates should consider are available.

2.5 Applying the Theory to Two Different Settings: the Legislature and Election Campaigns

In this section, I apply the theory developed so far to two different settings: in the legislature and during election campaigns. I further suggest hypotheses for each setting which will be tested in Chapter 4 and Chapter 5 respectively.

2.5.1 Housing Price Inequality and Legislators' Deviation from the Party Leader

To recap, following Tavits and Potter (2015) who contended that leftist parties emphasize economic issues when inequality is increasing because high inequality makes economic issues more salient for the poor majority, I claimed that we can apply this logic to district level analysis and argued that the level of housing price inequality of a district determines the types of issues that become salient in that district, which in turn shapes the legislators' behavior. Unlike Tavits and Potter (2015), however, I argue that representatives from not only leftist parties but also from right parties will appeal to the poor majority of their district, if voters under the mean level of housing price are the majority. Representatives will appeal to this majority with pro-poor policies in a highly unequal district to win reelection. If a district is not unequal, or relatively equal, I contended that economic issues do not become (relatively) salient, allowing politicians to follow their party's preferences or party leader's position.

Building on the above basic theoretical framework, I first explore how the theory can be applied to the legislative behavior of individual representatives. Specifically, I examine under what conditions elected representatives behave differently from their party's central position due to their constituency characteristics which, I argue, are determined by levels inequality in wealth distribution at the district.

Incumbent legislators face mainly two restrictions when expressing their positions through legislative voting: first, electoral punishment by their own constituency and second, punishment by party, especially the party leadership. In order to avoid electoral punishment, legislators should deliver their constituents' preferences in the legislature. If their district is highly unequal, they should vote in favor of poor voters' preferences. At the same time, they fear of the reaction of party leaders who should maintain party discipline to deliver the entire party's preferred policies and have political power and material resources to do so (Cox and McCubbins, 1993, 2005; Rohde, 2013). Cox and McCubbins (2005) famously claimed that parties are "legislative cartel." According to them, the more control majority parties yield on the agenda, the more the legislative process leads their members to become ideologically extreme. Based on the insights from these existing works, I also adopt the idea that the legislative behavior of individual members are influenced by their party or party leaders.

On the other hand, Krehbiel (1993) argued that the increasing unity between members within congressional parties and the increasing polarization between them have little to do with partisan leadership. For Krehbiel, that legislators vote together is not enough to judge whether a party is united or not. We are also unclear if a party leader is strong enough to discipline his or her party members even when their preferences are different. Krehbiel's doubt may be reasonable since members could vote together due to the similarity in their preferences. Especially under a two-party system, members of one party may care about a wide range of different types of constituents' preferences. If some districts are highly unequal, it may cause heterogeneous preferences even among co-partisans, resulting in one's deviating behavior. Also, party leaders are individual candidates who should reflect their own constituency's preferences. The leaders' power within their party cannot rule out a risk that voters would punish the leaders if they vote too differently from the wishes of the majority voters of the leader's district. Considering the discussion so far, it is necessary to take into account the difference between individual representatives and party leaders in terms of their constituency characteristics.

Although studying roll-call record is useful to see legislators' position taking which is observable to voters as well as to party leaders, not all votes are appropriate for examining how members represent their districts' interests and to what extent they vote in line with their party leaders. The main reason is that some procedural votes are not necessarily partisan. Also it is hard to measure what voters' preferences are at the district-level for some bills pertaining social values. Therefore, I focus on legislators' voting records on economic bills. I contend that focusing only on economic bills will help us to see how a legislative member takes into account both their own constituency preferences and the party leader's influence. While Fenno (1978) considered consequences of voting in the Congress are rather unclear and members of Congress do not have to explain every voting decision to their constituents, I argue that consequences of economic bills are rather clear to voters especially in unequal districts where a lot of voters are poor and electoral costs are relatively clear. Indeed, bills on welfare and redistributive policies, such as income and real estate property taxes in the case of Korea, create a huge attention from the public and the media release the results of votes with names of legislators and districts. In future elections, competitors can raise this issue if a legislator vote in a way that a majority of voters would disapprove of.

Considering the discussions so far, I argue that the more unequal wealth distribution of a district is, the more the representative will need to deviate from their party's leader. More specifically, if a district is highly unequal in terms of wealth distribution, the districts' preferences will differ from those of other districts. For example, the voters will be more interested in promotion of social programs and more government spending (Ansell, 2014; Tavits and Potter, 2015). A highly unequal wealth distribution also yields a skewed distribution, resulting in a different preferences favored by the majority and a different location of the district median voter. Then representatives will have more incentives to deviate from their party leader's position as they could be afraid of electoral punishment for their roll call votes (e.g., Nyhan et al., 2012; Bovitz and Carson, 2006). At the same time, the degree to which individual members deviate from the party leader's will be influenced by how similar the levels of inequality are between a member and the leader. If the levels of wealth inequality are similar to each other, and thus the preferences favored by the majority of voters are alike, a member and the leader will vote in the same way. This leads to the first hypothesis in the following:

Hypothesis 1: The larger difference in inequality of housing prices distribution between a member's district and the leader's district, the more the member will deviate from the leader.

However, inequality of housing price distribution may not affect all legislators in the same way. Democratic Party's popular support tend to be more based on poor voters (Tavits and Potter, 2015). Therefore, it is possible to assume that the relationship between housing price inequality and deviating behavior of incumbent legislators is conditional on their party affiliation. This could imply that the members of the left party do not have to deviate substantially from their party even when their district is highly unequal. It could also suggest that the leftist party is showing more party unity. I further consider a unique situation in the modern Korean politics which is different from the US case: an increasing influence of the left party. As I have discussed in the earlier section of this chapter, it implies that the two major parties in Korea are not equal in terms of party leadership and the number of times they served and so on. While the Korean politics was dominated by the conservative party (many former parties of the GNP), leftist parties strengthened its popular base due to the rising levels of inequality (Lee, Lee, and Kim, 2013). In contrast, the major conservative party has lost its past power, at least to some extent, as their main policy platforms based on anti-communism and pro-market capitalist agenda did not attract as many voters as it used to be (e.g., Kim and Choi, 2018; Lee and You, 2019). Hence, I argue that the extent to which a party or party leaders influence their members would vary across different parties in Korea.

Meanwhile, the Democratic Party could be substantially better at promoting agenda related in pro-poor policies. For example, Tavits and Potter (2015) show that left parties were able to attract poor voters with social programs. This in turn could put a left party's members in a position that they have to deviate less from the party's central line. Also, Mainwaring and Pérez-Liñán (1997) found that left-wing parties are known to be more cohesive in their study on the Brazilian legislature. Given their ideological focus during the time period in the analysis, I expect the Democrat legislators to deviate less from their party's central position than the conservative GNP members. The discussion so far thus leads to the following second hypothesis:

Hypothesis 2: The impact of difference in housing prices inequality between a member and the leader on the deviation of a member will be conditional on the type of party. Democratic party members will be less likely to deviate than the conservative party (GNP) members.

In the meantime, scholars have also argued that policy preferences are determined in part by general ideological disposition of a member, rather than a direct reflection of district's interests (Levitt, 1996). For example, Levitt (1996) has shown in his analysis on the U.S. Congress that senators vote based on their own ideology, rather than the party line or their constituency preferences. On the other hand, other scholars such as Jenkins (2006) found that even though both party and personal beliefs matter for voting, the power of party was stronger among the state legislators in the U.S. in their voting behavior. Alemán et al. (2018) suggest that partisanship is the most important factor in voting behavior and a member's ideology does not matter in the case of Argentine legislators. These existing studies show mixed results.

However, it is possible to think that a member chooses a certain district to run for office

based on his or her personal ideology in the first place. For example, an ideologically progressive politician may select a poor and unequal district over other richer districts to realize his personal beliefs in policy-making process. A good example is Mr. Nam of the conservative Grand National Party representing the poor Paldal district in the Korean general election. Even if he chooses a conservative party, can choose a poor district in the belief that "social programs for the poor should be expanded" and "the GNP leans too far to the right and it should move to the left (Sohn, 2004)."

If personal ideology is important for legislators' policy preferences, we can also assume that general ideological differences between a member and the party leader could also influence a member's deviation from the leader on economic bills. Therefore I am finally interested in examining if the effect of differences in district level wealth inequality on the deviating behavior of rank-and-file members from their leader is somehow related to how much ideological difference exists between members and leaders. More specifically, I contend that the deviating behavior of members can be influenced by their ideological difference from the party leader, so the effect of wealth inequality on the member's deviation is filtered through the ideological gap that could exist between them in the first place. I show the expected relationship in Figure 7.

Figure 7: Mediated Effects of Ideology



When considering the effect of mediated relationship, endogeneity problems could arise because the ideology gap could be due to the difference in the positions between a legislator from the leader on economic/welfare bills. However, the ideological gap pertains not only to welfare issues but also to issues related to social values such as abortion, same-sex marriage, or national security. For example, recent studies have also shown that values on humanity issues influence members' commitment to the party (Husted, 2020). Even within economic issues, a legislator who is in favor of pro-market policies and who supports Free Trade Agreement that could help, for example, certain industry of a country can be opposed to lower corporate tax if the supporter of their districts are directly influenced by the measure. Given these considerations, I hypothesize that the effect of the difference in housing price inequality between a member's district and the leader's district on a member's deviation is mediated by the ideological gap between the member and the leader.

Hypothesis 3: The effect of the inequality gap on a member's deviation is mediated by the ideological gap between the two.

2.5.2 Housing Price Inequality and Candidates Convergence and Divergence during Election Campaigns

Election campaigns play a central role for representation in contemporary politics. During election campaigning, like parties, individual candidates also have incentives to do more work such as informing the public about their parties' performance, credit claiming for activities to which he or she particularly contributed and taking positions in order to win reelection (Mayhew, 1974; Grimmer, Messing, and Westwood, 2012). Parties and candidates interact with voters to find out voters' mood or what they need for constituency using public opinion survey (Pereira, 2019). Even though political parties, as a "machine", hope to control and discipline their party members' behavior as they channel citizens' preferences into policies (e.g. Miller and Stokes, 1963) and parties endorse and finance their candidates during elections (Aldrich, 1995), candidates are given a great deal of leeway in terms of organizing campaigns and specific policy proposals for their own district. As Sides (2006) shows, for example, in some circumstances, candidates indeed may see a need to buck the party and focus on the particularities of their constituency in order to win elections (e.g., Sides, 2006) by even playing similar campaign strategies to their rivals from the opposing party.

While there exists a vast literature on candidates competition, it suggests mixed evidence as I discussed in detail in the earlier section (2.2). In this section, I again apply Tavits and Potter (2015)'s logic for the strategies of parties to the district-level competition. However, as I theorized earlier, I contend that in highly unequal district, redistribution and welfarerelated policies become relatively more important than other issues to many voters, leading candidates of a rightist party also to focus on the same issue. Even if the right party focus on social values because of the left party's focus on inequality related issues, the right party's candidates may have to focus on welfare issues when their district's inequality is severe and thus many voters care about welfare and redistributive issues in order to be elected. Even when a rightist candidate has little chance of winning, totally ignoring an issue that is critical to many of the voters of the district will be difficult. Therefore, although partly following Tavits and Potter (2015), I suggest considering right party's members at the district level and I contend that these members will also focus on the majority poor to win if the district inequality is high, converging with the left candidate in terms of issue emphasis as campaign strategies. Even at the party-level, Spoon, Hobolt, and de Vries (2014) suggested that if the vote share of an issue owned by the other party is large, parties not owning the issue can still discuss it more.

This section also speaks to the literature of issue ownership while extending it by focusing on the candidate-level. Many scholars have paid attention to issue ownership by parties in recent years (e.g., Bélanger and Meguid, 2008; Lachat, 2014; Stubager and Slothuus, 2013; Petrocik, 1996, etc.). According to the theory of issue ownership, parties focus on the issues that they are able to handle well and that are identified as their issue by voters while avoiding issues that are viewed as the opposing party's strength. Meanwhile, issue ownership could be an important factor to explain candidates' campaign competition, too. For example, when a candidate runs in a highly unequal district with many relatively poor voters, the district's important issue will be redistributive policies and developing welfare programs. Both of the candidates should be able to make voters believe that they are good at handling these issues to increase the probability of winning. Even though the left party owns the issue of inequality at the party-level (national-level) and the right party could focus on other issues than inequality as suggested by Tavits and Potter (2015), it may be difficult for some of the right party's candidates in the highly unequal district to distract away from these issues because of its importance or salience to a majority of voters. For example, as Gadarian (2010) emphasized, both presidential candidates Bush and Kerry had to mention foreign policy because the 2004 election was right after 9/11 and national security was most salient to voters, even though national security is owned by the Republican Party.

In fact, candidates often "trespass issues," which refers to discussing issues owned by the opponent parties (Damore, 2004). Building on the Downs' claim for the importance of attracting the median voters in a two-party system, Damore (2004) went so far as to state that "some level of issue trespassing should be expected as a function of normal campaign strategy" (p.392) under certain electoral environment. He shows that presidential candidates trespass issues when elections are competitive and that underperforming candidates have more incentives to trespass issues as a way of connecting to voters who support the opposite party's candidate. Similarly, Stimson, Mackuen, and Erikson (1995) show that the Members of the U.S. Congress "trespass issues" to look like that they are in line with their electorate (see also Sulkin, Moriarty, and Hefner, 2007; Sides, 2006). At the party level, leaders of parties underperforming in the pre-election polls also trespass issue (Pereira, 2019). As Sulkin, Moriarty, and Hefner (2007) state, "issue ownership does shape the nature of agendas but does not lead to substantial differences in the agendas of Democrats and Republicans. As a result, issue trespassing is more common than formal models of candidate strategy (p.73)." Scholars have also suggested "issue convergence" or "issue overlap" strategies whereby candidates focus on the same issues to encourage voters to make comparisons between the candidates' positions on the same issue rather than being quite about the other party's owned issues (Sigelman and Buell, 2004). For example, Sigelman and Buell (2004) show that presidential candidates saw issue convergence on policy topics most of the time. In addition to owning, trespassing, or overlapping issues, candidates can provide voters with "issue ownership cues" by simply having discussions on issues, even if the issue is owned by the opposing party, without taking a position on the issues they are discussing (Banda, 2019). It is because voters infer candidates' position just by seeing their discussing the issue. Furthermore, voters simply value candidates who discuss issues that are owned by parties they support (Banda, 2019). In sum, the literature discussed so far suggests that individual candidates can do, sometimes if not always, what they want to and what need to do to win elections.

So far, I have argued that candidates of both right and left parties may have incentives to focus on welfare-related issues when the district's inequality is high. I also considered that candidates could strategically adjust what they discuss during campaigns, even the issues owned by the other party if necessary. Nevertheless, when parties are strong, like in Korea, candidates have to respect parties' ownership at the same time while cultivating their personal votes during electoral competition. To examine how candidates deal with inequality as well as competition with the opposite candidate, I further consider how they target the majority voters in unequal district without necessarily hurting the party's issue ownership by presenting *promises* on particularistic goods. A significant body of research on legislative particularism offers electoral systems (SMD or MMD) as the primary explanation for the provision of particularistic goods (e.g. Cox, 1990; Carey and Shugart, 1995; Rogowski, 2017; Catalinac, 2016, etc.), which are benefits targeted to certain subsets of electorate. While electoral systems are critical for cross-country studies, focusing on the candidate-level within a single country requires a different approach.

Meanwhile, according to Grimmer (2013), legislators are diverse in that some of them focus on ideological spectrum while others concentrate on specific issues, and still others are "appropriators" who care about distributive spending. He distinguishes these three sorts of legislators based on topics discussed by the US Senators in their press releases (Grimmer, 2013). Focusing on election campaigns, I argue that left party candidates will be appropriators most of the time talking about welfare issues as well as promising provision of particularistic goods. I further contend that, in unequal districts in which both parties' candidates have incentives to attract a majority of (relatively) poor voters, as discussed earlier, the right party candidate would also talk about promises on particularistic goods. In this way, they do not have to run against parties' owned issues, even though they trespass (Damore, 2004). Although the provision of particularized goods are usually understood as nonprogrammatic (e.g. Catalinac, 2016), it may not be always the case because some programmatic budget can also be distributed to specific constituencies depending on how much legislators can poach out of the programmatic budget that is decided at the national-level to their constituency (Cox and Thies, 1998; Grimmer, Messing, and Westwood, 2012). For example, if a country plans on developing infrastructure such as rail roads for speed train, not every corner of the country would benefit from this budget simultaneously, and a powerful or prominent legislator can take a large portion of this budget to his district first, by making the train pass through their district. Accordingly, it makes sense for candidates to advertise promising that they could bring in some particularistic goods such as railroads to their constituency in election campaigns. Baskin and Mezey (2014) pointed out that some legislators have discretion or power as to how to channel the central funds to benefit their local development projects, which makes constituency service "almost pork." Samuels (2001) argued that politicians will cultivate personal votes by geographically targeting the particularistic benefits as long as they have a certain degree of freedom in campaign strategies. Consequently, this chapter contributes to this literature of particularism by examining the electoral sources of it, which is the district-level inequality. Unlike the extant research measuring particularism using legislative bills (Gamm and Kousser, 2010; Motolinia, 2021), federal budget spending (Rogowski, 2017; Kriner and Reeves, 2015), party manifestos (Enggist and Pinggera, 2021), I draw on campaign manifestos (brochures) of individual candidates to measure candidates' particularistic election promises which, I argue, are used by candidates of both left and right party as a way of targeting the relatively poor in unequal districts.

To sum, I argue that candidates running in districts with high levels of inequality may act similarly to one another in terms of promising certain benefits to attract voters. In these areas, policies pertinent to reducing levels of inequality could be the most important issue rather than other social or security issues. Since left parties and their members are traditionally more active in reducing inequality by increasing welfare arrangements and enlarging the size of government, the leftist candidates will propose these policies when districts are unequal (Lupu and Pontusson, 2011; Tavits and Potter, 2015). In addition to resorting to issues owned by their party, I argue that the left party candidates can also promise particularistic benefits as a way of targeting a majority of relatively poor voters in unequal district. I further expect that candidates of the right party will also be encouraged to appeal to this majority of relatively poor voters to win elections. For this, they could similarly talk about certain particularistic benefits while avoiding sanctions from their party leaders by talking about issues of inequality or welfare explicitly. Finally, I hypothesize as following:

Hypothesis 4a: The higher wealth inequality of a district, the less gap in the promises on particularistic provisions by the two candidates.

Table 1 summarizes my expectations about the relationship between the district-level inequality and strategies that can be considered by the two parties' candidates.

District Inequality							
Party	High	Low					
	(Inequality is salient)	(Inequality is not salient)					
Right	Promise on particularistic bonofits	Focus on the party's owned issue					
	I formise on particularistic benefits	(e.g. national security)					
Left		Focus on the party's owned issue					
		(e.g. human rights)					
		Less promise on particularistic					
		goods					

Table 1: Theoretical Expectations about Candidates

Additionally, I consider that the effect of levels of district inequality could depend on the price level of each district. There are at least two reasons for taking into account the interaction effect between the measures of inequality and different price levels. First, imagine two similarly unequal districts' distribution in which many individuals are located on the left side, but the median price of these two districts are very different, one is low and the other is very high. Being in a district of a low level of the median price, it could be that individuals on the left side of the distribution may be more leftist or more progressive than those also on the left side of distribution but with a high level of the median price. Second, some people may think that inequality in our society is inevitable and accept inequality to a certain level (Janmaat, 2013) depending on at which price level one's district is located. If a district's median price is at the medium level on the housing price distribution of the entire country, relatively poor people in this district may have moderate preferences at the national level. This could make levels of inequality not crucial to influence voters' preferences, and thus politicians' strategies.

Hypothesis 4b: The effect of housing price inequality on legislators' promises on particularistic provision during campaigns will be smaller when the district's price level is greater.

2.6 Summary

This chapter provided an overarching theoretical framework to explain how individual representatives respond to their own voters when their districts are unequal. While the traditional Downsian model predicts that candidates (and parties) converge on the median voters, the Directional model predicts the opposite: candidates (and parties) will diverge (or polarize) from each other. Empirical evidence from the studies that test which model is better is also mixed. Thus, I propose that two models can be taken depending on the representatives' constituency conditions. I built on the insights from the literature of party competition and inequality that claims that leftist parties tend to focus on issues related to welfare or redistribution because left parties are considered good at handling these issues, while rightist parties emphasize non-economic issues. However, focusing on candidate-level, I argue that when inequality is high, individual candidates from both parties in a two party system will emphasize welfare-related issues because these issues are salient in such a district.

I further proposed specific hypotheses based on this argument for individual party members in two different settings: legislative voting behavior in the legislature and during election times which will be tested in Chapter 4 and Chapter 5 respectively after discussing the housing price data and inequality measures in detail in the next Chapter 3.

3.0 Housing Price Inequality Data

3.1 Why Housing Prices Inequality?: Housing Prices Distribution as a Measure of Policy Preferences

In Chapter 2, I reviewed the literature of inequality and redistributive politics which suggests that a vast majority of research has relied on *income* inequality to measure aggregate policy preferences.¹ However, considering inequality only focusing on income distribution is insufficient because economic inequality is not only about income, but also about *wealth*, which includes financial assets (e.g. stocks and bonds), property, private pension etc. Therefore, in this chapter, I discuss recent works on wealth inequality as well as my housing price data to defend my use of housing prices as a proxy for wealth. As such, housing prices, I argue, are a useful independent variable in explaining policy preferences.

In particular, Thomas Piketty in his seminal book, *Capital in the Twenty-First Century* (Piketty, 2013), and in his research on inequality in the long-run (Piketty and Saez, 2014) pointed out that the rate of return on capital has been historically higher than the rate of economic growth and thus the income growth. He further claims that, because of this trend, wealth inequality will become greater in the long run, making the capital owner even richer. His findings and argument fueled intense scholarly discussion on growing wealth inequality. Among several sources of wealth, political scientists recently paid attention to sharply increasing housing price (or real estates) inequality and its political implications (e.g., Ansell, 2014, 2019; Adler and Ansell, 2019; Ansell and Cansunar, 2021, etc.).

According to a study, housing price-to-income ratio, which measures housing affordability, increased from 3.11 in 1990 to 4.13 in 2018, almost by 43 percentage points, for metropolitan areas in the United States (Dapartment of Housing and Urban Development, 2021).² On this phenomenon, Verkhivker (2018) went so far as to state "housing is the real culprit for America's inequality" in *Forbes*, and Fidler and Sabir (2019) in the 2019 World Economic

¹See Erikson (2015) for a detailed literature review on income inequality and policy responsiveness.

²These are the price of single-family home divided by the median household income.

Forum stated that "the cost of housing is tearing our society apart" about the United States. Increasing housing price inequality has become a great political and economic concern beyond the United States. And, in fact, house values have been increasing in many advanced countries across the globe as seen in Figure 8, which shows the trend of house values (in real price) of the OECD member countries with Korea and the United States drawn separately (OECD, 2020). Except for a couple of years around the 2008 financial crisis, the overall trends in Korea as well as in other advanced economies suggest that increased housing price could bear political implications.



Figure 8: Change in Real housing price in OECD Countries, 2000-2018

Therefore, in this dissertation, I use a measure of housing price inequality,³ rather than $\overline{}^{3}$ Throughout the dissertation, I use *housing price inequality* and *real estate price inequality* interchange-

income inequality. One of the reasons for using housing price inequality is that it has critical political and economic impact at national level as income inequality. For example, Piketty and Saez (2014) show that the top share of wealth (including real asset) has increased sharply throughout the history, and they argue that this will have a longer generational impact than income. Especially in advanced countries experiencing low levels of economic growth, the total stock of wealth accumulation becomes very important. Birdsall and Londono (1997), focusing on Latin America, find that efforts to fight against poverty in the region based on neoliberal policy recommendations of the World Bank and increased social spending were in vain because these policies did not deal with reducing inequalities caused by unequal asset accumulation simultaneously.

The more important reason for using housing price inequality for the purpose of this dissertation is its influence on the political behavior of citizens. First, in many countries, individuals' salary income is not likely to be affected by congressional representatives. However, housing price can be affected by the representatives through, for example, development plans and infrastructure building aided by national fund transfer, urban regeneration projects etc. More critically, as different incomes shape different material circumstances and different interests as to government policies, different housing prices should also shape heterogeneous material circumstances and political interests. Ansell (2019) reviewing the role of housing prices and homeownership shows a cross-national trend of nominal national housing prices, which, on average, quadrupled since 1990. Claiming that this trend would surely influence politics, he also argues that wealth including housing prices determines the first-dimension politics. Income levels and labor market circumstances shape citizens' support level for redistributive policies and the size of welfare of their country, but, he argues, wealth will have stronger and more enduring effects on citizens' preferences.

Some scholars examined the importance of wealth and policy preferences focusing on homeownership. Scheve and Stasavage (2009) showed that attitudes toward trade policy are shaped by homeownership. Ansell (2014) found that when housing prices declined, homeowners supported for more social welfare policies. Meanwhile, Hellwig and McAllister (2019) suggested that when parties suggest similar economic policy options to voters, there is no ably. difference in the support for conservative parties between homeowners and non-owners unlike the conventional claim that homeowners tend to be conservative. Also, recent studies on the US local elections have suggested a positive relationship between homeownership and voter turnout (Jiang, 2018; Hall and Yoder, 2022). In sum, considering housing price inequality will be useful to broaden our understanding on how parties and politicians respond to voters' aggregate preferences.

3.2 Housing Price Dataset

The goal of this section is to introduce the raw data of housing price from which of the housing inequality index for each district is calculated. I also discuss how my fine-grained data of housing prices allows us to capture electoral district-level inequality instead of nationallevel or state-level inequality. This section also explores how inequality in distributions of housing prices in Korea had substantially changed between 2000 and 2016, which is the period for the later chapters' analyses.

I gathered the housing price data, focusing on the price of condominium buildings (which is called "apartment" in Korea) because this is the main type of housing in the country. The data cover almost all parts of the country between 2000 and 2016, except some most rural areas where no condominium exists (these are not included in the analysis). Prices for all houses sold and bought in Korea are available on the National Appraisal Board (www.kab.co.kr) and on a number of major national newspapers' websites as well. I purchased the raw data of housing price from *Budongsan Bank* (which means "real estate bank"), the oldest and largest company providing online real estate data in Korea. The company offers data on both traded and projected price to the National Appraisal Board and *Korean Economic Daily*, a major nationwide newspaper. My data cover only the unit price of condominium buildings, even though there are other types of residence such as house or townhouse. However, condominium type of residence is the most common and popular in Korea as an article in *the Washington Post* noted: "South Korea is a nation covered by apartments, ..., it resembles a coast-to-coast line of dominoes (The Washington Post, 2013)."

Year	Mean	Median	Min	Max	Sd.	Skewness	Gini	No. of Unit
2000	$12,\!952$	9,500	900	120,000	10 528	2.89	0.37	2,500,000
	(\$136K)	(\$99.8K)	(\$9.5K)	(\$1,261K)	10,528			
2004	$21,\!623$	$15,\!000$	1,000	450,000	22 108	3.68	0.45	4,953,828
	(\$179K)	(\$124K)	(\$8.3K)	(\$3,733K)	22,130			
2008	$32,\!353$	21,000	1,100	650,000	36 217	3.66	0.49	5,921,685
	(\$270K)	(\$175K)	(\$9.2K)	(\$5,417K)	50,217			
2016	$35,\!117$	27,750	1,500	800,000	30 224	4.05	0.38	6 800 768
	(\$297K)	(\$235K)	(\$12.7K)	(\$6,774K)	30,224	4.05	0.50	0,030,100

Table 2: Summary Statistics of House Price Data (at national level)

Note: 1) Price unit is Korean 10,000 won.

2) In parentheses, price is converted to USD with the applicable yearly average exchange rate.

3) The number of unit is the total number of condominium units in the entire country for each year.

Figure 9 provides an excerpt from the raw data of housing prices. The raw data are provided at the *dong* level, the smallest administrative unit. Because electoral districts are comprised of several *dongs*, I arranged the data allocating to the right electoral district (about 250 single-member district) for the use in the later empirical chapters. The Column 6-2 provides prices in the current US dollars (as of June 2022).

Since legislative electoral districts are mostly composed of si (cities) or gu (districts) (in the second column), I matched each price to its electoral district. I also made sure to put prices to be allocated to the right electoral district when si or gu are divided into two or more electoral districts, or when small si or gu are merged into a single electoral district.

In the first raw in Figure 9, shaded in the green color, we have a price for a unit of condominium called Gyeonso Hansin in Gyeonso-dong, in the city of Gangneung in Gangwon Province in 2000. The size of this unit in the first raw is 104 square meters, and the price is USD 61,600. It should be noted that because it is a condominium, there are multiple units with the same condition such as size and prices. For example, there are 207 units for the first raw's unit in Gyeonso Hansin condominium. Therefore, I accounted for this number of units in each condominium building when calculating the housing price inequality. The price for this same unit in the year of 2008 is featured in the second green row. The difference is in the price, increased by 6.25%, from 61,600 in 2000 to 65,450 in 2008. On the other hand, in the rows in yellow color, we have a price for a condominium named Dongik, in Gugi-dong

in Seoul, the capital city. The size of the unit in the first yellow is about 105 square meters, and there exists 78 units for the price of USD 146,300. Meanwhile, the second yellow row shows that the same sized unit's price rose to USD 254,100 in 2008, increased by over 70%. This comparison between the different rates of price increase between a condominium in the capital city of Seoul, where prices were appreciated most, and the other in Gangwon Province, a rural area, suggests that there exists significant variations across different districts in terms housing price changes and thus in distribution.

대지역명 (region) ①	중지역명 (district) ②	소지역명 (admin) ③	아파트명 (aptname) ④	연도 (year) ⑤	매매가 - 만원 단위 (price, KRW10,000) ⑥-1	(price, USD) 6-2	평 (size) ⑦	공용면적포함 (size w/ public area) ⑧	세대수 (no. unit) ⑨
강원도 (Gangwon-do)	강릉시 (Gangneung-si)	견소동 (Gyeonso-dong)	견소한신 (Gyeonso Hansin)	2000	8,000	61,600	32	104.26m²	207
강원도	강릉시	견소동	견소한신	2000	10,500	80,850	42	137.75m²	30
강원도	강릉시	견소동	견소한신	2000	2,700	20,790	17	57.06m²	74
강원도	강릉시	견소동	견소한신	2000	4,800	36,960	19	63.34m²	36
:	:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	;	:
강원도	강릉시	견소동	견소한신	2008	8,500	65,450	32	104.26m²	207
강원도	강릉시	견소동	견소한신	2008	12,500	96,250	42	137.75m²	30
강원도	강릉시	견소동	견소한신	2008	3,500	26,950	17	57.06m²	74
강원도	강릉시	견소동	견소한신	2008	4,500	34,650	19	63.34m²	36
:	:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:	:
서울특별시 (Seoul)	종로구 (Jongno-gu)	구기동 (Gugi-dong)	구기현대 (Gugi Hyundai)	2000	19,000	146,300	37	123.18m²	30
서울특별시	종로구	구기동	동익 (Dongik)	2000	19,000	146,300	32	105.73m²	78
서울특별시	종로구	구기동	동익	2000	40,000	308,000	57	188.34m²	45
				:			1		:
:	:		:		:	:		:	:
서울특별시	송로구	구기농	구기현대	2008	39,500	304,150	37	123.18m²	30
서울특별시	종로구	구기동	동익	2008	33,000	254,100	32	105.73m²	78
서울특별시	종로구	구기동	동익	2008	52,000	400,400	57	188.34m²	45
:	:	:	:	:	;	:	:	:	:

Figure 9: An Excerpt of Housing Price Raw Data

Table 2 presents the summary of my housing price data for 2000, 2004, 2008 and 2016,

which are the years of congressional election that I will use in the later chapters. Although this housing price data are available monthly, I used the price of March for this Table 2 and in later chapters' empirical analyses when calculating the Gini-coefficient because congressional election takes place in mid-April every election year. Considering the number of eligible voters and eligible households in each election year, the data cover nearly one third of eligible households.⁴

We observe from the Table 2 that the median price in the dataset almost tripled between 2000 and 2016. What seems to need more attention is that the price of the most expensive unit increased more than six times whereas the value of the least expensive one increased only by 1.6 times. The Gini-coefficient at the national level (the distribution of the entire price data set) increased from 2000 to 2008, while it recovered to the previous level in 2016. Nevertheless, the skewness at the national level continued to increase. In brief, the summary of my dataset reveals that the country experienced asymmetric changes of housing price at national level.

Having said the benefit of my fine-grained data on housing prices, however, one caveat must be noted. I calculated the district-level housing price inequality based on the market values of houses, which implicitly proposes that voters own a house at a particular market value and have policy preferences based on that value. Nevertheless, there could be differences between renters and owners. For example, Ansell and Cansunar (2021) showed that policy preferences in, for example, support for redistribution between these two groups are becoming increasingly different, renters being more supportive of redistribution, especially in more unaffordable areas in European countries. In the context of Korea, too, studies have shown that homeowners and non-homeowners are different in party identification and turnout (e.g., Kang, 2012; Kim and Choi, 2018, etc.). However, it is also worth noting that in Korea, rather than paying monthly rent, most of the people who do not own houses live in the type of a lease called "Jeonse," making a large deposit, which is usually around 70 percent of the unit's market price. The deposit for a jeonse unit also changes along the house market value. Therefore, in this dissertation, I use the house values (market prices) without distinguishing

⁴The number of eligible voters were 33,482,387 in 2000, 38,152,851 in 2004, and 37,796,035 in 2008. And the number of households were 15,433,102 in 2000, 18,210,497 in 2004 and 18,674,757 in 2008.

between owners and renters while planning to address this issue in the future study.

3.3 Housing Price Inequality in Korea

After organizing the data of housing price introduced earlier, I calculated several measures of inequality such as the Gini-coefficient and skewness of housing price distribution at the district-level.

Figure 10 shows histograms for Gini-coefficients of all electoral districts for four time periods. A Gini coefficient of 0 presents a perfectly equal distribution while a Gini coefficient of 1 means a perfectly unequal distribution. The average values of Gini-coefficients of housing price distribution of all electoral districts are 0.17, 0.21, 0.25, and 0.22 in respective four election years. We can clearly see that there are more districts with higher Gini-coefficients in 2008 than in 2000. As discussed earlier with respect to the Table 2, we have a lower mean of Gini-coefficients in 2016 than 2008. However, we still have more districts with higher levels inequality expressed with Gini-coefficients than 2000 and less districts that have relatively equal distribution of housing price in more recent years.

Figure 10: The Distribution of Gini-coefficients of housing prices Inequality in Korea between 2000 and 2016





Figure 11: housing price Inequality in South Korea 2000-2016

Figure 11 provides a quick look at the changes in the levels of inequality measured with the Gini-coefficient of housing price distribution across electoral districts in South Korea between 2000 and 2016 based on the data I built. The darker the color is, the higher the

long

long

housing price inequality of a district is. We observe that the color on the Korean peninsula becomes darker through the sixteen years. The changes in Figure 11 suggest that the increases in housing price inequality were not concentrated in certain localities (for example, in the capital city or metropolitan areas), but the changes were experienced in most of the districts across the country.

These changes could partly explain why Korean people generally feel that economic inequality of the Korean society is getting worse. Even though Korea has relatively low level of *income* inequality considering its economic size and the level of economic development, ranked in the middle among OECD member countries, one survey shows that 76% of respondents perceive that the income distribution is unequal in the Korean society, among which more than half see highly unequal (SME Daily, 2014).

In Figure 12, I show how distributions of housing prices have changed more closely in selected districts - Jungnang, Dongjak, and Songpa - in Seoul, the capital city. These three districts are good examples for different types of distribution and change. First, on the left panel in Figure 12, Jungnang district displays right-skewed distributions throughout the years. On the middle panel, Dongjak district represents distributions that changed over the years but some houses are getting more expensive, increasing the average price of that district. However, there are still numerous households that are under the mean level of housing price. Lastly, Songpa district on the right panel exhibits a district that has experienced significant changes in its housing prices distribution. While Songpa had a right-skewed distribution in 2000, its distribution has become increasingly left-skewed in 2016, with more people on higher price ranges. These three districts suggest that we could observe changes in the housing price distribution even within an electoral district level, and that the changes seen by each district may differ in its degree and its pattern as well.



Figure 12: Different Patterns in Three Districts 2000-2016

Note: Red dashed lines represent the district's mean price of the year.



Figure 13: Inequality in Seoul 2000 and 2016

Administrative Districts in Seoul

Figure 13 further shows how levels of inequality of housing prices have changed within Seoul's different administrative districts (gu, equivalent to the US county).⁵ As seen in the bottom of the Figure 13, Gangnam and Songpa districts were among the most unequal

⁵To note, most of these administrative districts (equivalent to the US counties) are divided into smaller congressional election district boundaries. For example, Gangnam district in the bottom is an administrative unit, but it is consisted of two electoral district, Gangnam 1 and Gangnam 2. For the analyses in the following chapters, my unit of analysis is the electoral district (Gangnam 1, Gangnam 2, and so on), not the administrative district.

administrative districts in Seoul in 2000, which are represented in yellow bars. However, these two districts were no longer the most unequal districts in 2016. Yongsan became the most unequal district in 2016 followed by Jongro. One of the reasons for this dramatic change could be that these districts had embarked on urban redevelopment projects which rendered the districts with unequal distribution such that some newly built houses are much more expensive than existing old houses.

The discussion on my data of housing price inequality so far leads us to consider other supplementary measurement of housing price distribution to the Gini-coefficient. In the previous section, I claimed that skewness of a district is important based on Lupu and Pontusson (2011) because it tells us, as they argue, the structure of inequality such as the relative distance of the middle income voter to the poor and to the rich. Skewness refers to the degree of distortion from the symmetrical bell curve of a distribution and thus skewness of zero is considered to be a normal distribution. Even a small asymmetry from the bell curve makes a distribution skewed rightward (positively skewed) or leftward (negatively skewed). In the meantime, skewness between -.5 and +.5 can be considered a normal distribution depending on the context (Pfister et al., 2013).

The next step is to categorize over 200 districts per election year according to the patterns, considering the hypothetical districts I presented in the previous chapter (Figure 2) to make predictions about behavior of the voters and legislators. In the real world, income distribution or housing price distribution is hardly perfectly normal one with the skewness of zero, I needed to make less strict categories to have a useful glance at how many districts from my data are more highly skewed or not than the average as seen in Table 3. In the third column are the number of districts within one standard deviation on both side of the average skewness at national level, which I call "normally skewed." One standard deviation below the average can be categorized as "relatively not skewed." To be clear, this does not mean that a distribution in this category is not skewed at all, but that the degree to which these districts' distributions are skewed is a lot lower than the national average of all districts' skewness, which could include negatively skewed distribution. And we can call one standard deviation above the average can be called "highly skewed" of which my data are all rightly skewed for this case. For example, this accounts for 156 (72 %) out of 216 districts; while plus
minus one standard deviation from the average account for 28% in 2000, which is reduced to 15% in 2016.

	-1 s.d (relatively not skewed)	Around national average ("Normally" skewed)	+1 s.d (highly right-skewed)	Total	
2000	28	156	32	216	
(16th Assembly)	(13%)	100	(15%)		
2004	31	176	32	230	
(17th Assembly)	(12.9%)	110	(13%)	239	
2008	24	102	27	243	
(18th Assembly)	(10%)	132	(11%)		
2016	12	915	25	959	
(20th Assembly)	(4.7%)	213	(9.9%)	202	

Table 3: Distribution of Skewness Types

So far I have discussed how I built the district-level measure of housing price inequality by using the fine-grained housing price data, and how the levels and patterns of housing price inequality changed over time, between 2000 and 2016. In the following chapters that test my theory, I use the district-level housing price inequality data. For Chapter 4, I use the housing price inequality data of 2000, 2004, and 2008 to examine under what conditions incumbent representatives' legislative behavior differ from their party leaders in the Korean National Assembly for three terms (2000-2008). In Chapter 5, I then use the housing price inequality data of 2016 to understand how district housing price inequality affects individual candidates' campaign strategy in each district. Based on Table 3, I expect that, at least representatives from around 30 districts of highly right-skewed distributions (in the fourth column) could behave differently from their colleagues, especially if they are from the conservative party.

3.4 Conclusion

This section introduced my data on housing prices in Korea between 2000 and 2016 used for the following empirical chapters. In the meantime, I hope my dissertation prompts further research on the political implications of housing prices and housing price inequality in other countries. housing price data at small units like what I use for this research are available in several ways. In the case of the United States, housing price data are available through several real estate company's website. Among many of them, the Zillow Group, which is an online real estate database company, provides an extensive housing price related data through the Zillow Transaction and Assessment Dataset (ZTRAX) (Zillow, 2017). Zillow shares the ZTRAX data to academic and nonprofit researchers for free.⁶ Most the data of the ZTRAX date back to 1996. Although there is an increasing number of researchers using the ZTRAX data since its release in 2017, to my best knowledge, there is no study in political science using it. One recent study from economics using this data is worth mentioning. Clarke and Freedman (2019) studies how homeowners association (HOA) fees are related to the value and selling of houses. They also tell us that the data reveal that people living in homes with HOA are likely to earn high income and mostly white and Asian relative to those who are not in HOAs. Another way to exploit the micro-level data on housing price is to rely on web scraping which is a method of extracting data such as house values, HOA fees, ZIP code etc. from online provided by real estate companies. For example, in an unpublished work, Tenezakis (2019) used web scraping approach to get large amount of housing price data from Se Loger.com and Zoopla.com, both of which are major real estate companies in France and in the UK respectively.

⁶More information on the ZTRAX data can be found at https://www.zillow.com/research/ztrax. The opinions mentioned here are those of the author and do not reflect the position of Zillow Group.

4.0 Housing Price Inequality, Legislators' Deviation, and Polarization in the Korean National Assembly

4.1 Introduction

Why do some elected legislators vote in line with their party leadership while others do not? Do all parties have the same level of control over their party members? In December 2004, in a roll call vote of the Korean National Assembly (KNA) to amend the Housing Act, the conservative Grand National Party (GNP) divided into two groups: 30 GNP legislators voted for the bill while 52 GNP members voted against the amendment.¹ All 107 members of the Democratic Party present in the voting voted in favor of the bill. Why was one party able to vote cohesively while the other was not? This chapter empirically examines questions of when and why some legislators follow the party leadership, based on the theories developed in Chapter 2.

As Lee, Min, and Seo (2016) pointed out in their study on the co-sponsorship for welfare policies by Korean legislators, it is important to examine whether representatives reflect what voters want especially in a country like Korea where inequality is a relatively new policy issue and sharply increasing, instead of simply following their strong party leaders. To use Bartels, Clinton, and Geer (2016)'s term, who made a distinction between "incumbent responsiveness" as *intra-party* difference in representation and "electoral responsiveness" as *inter-party* difference, this chapter focuses on the former, *intra-party* difference, by examining the dyadic relationship between constituency preferences and elected representatives' responsiveness. In doing so, I also take into account parties' differential influences over their members' responsiveness. This chapter also speaks to the literature of party discipline (e.g. Krehbiel, 2000; Mainwaring and Pérez-Liñán, 1997; McCarty, Poole, and Rosenthal, 2001, etc.) which studies "the extent to which members of the same party vote together in highly contested roll-call votes (Mainwaring and Pérez-Liñán, 1997, p.454)." I consider how different constituency

¹Bill No. 171087. Jutaekbeop Gaejeong Beopryulan (A Proposal to Amend the Housing Act). Passed in December 7 2004.

preferences that individual members and the party leader represent respectively affect members' deviation from the leader, even when the leader may punish legislative members if they behave differently from the leader. Specifically, it examines under what conditions members, who are motivated for reelection (Mayhew, 1974), deviate from their party leaders by looking at bills that were important for the leaders to pass. This chapter shows that members may deviate from their party leader to reflect their own constituency preferences, especially when constituency preferences are different from the preferences of party leader's constituency.

To make it clear, this chapter is not a study of what determines party unity, so party is not a unit of analysis. Rather, it focuses on individual legislators, examining who and under what conditions individual legislators would deviate from their party leaders, although deviating could, in turn, harm their party's unity. It could also risk their electoral success in the future if the party looks uncoordinated and if the leader does not help the member in future elections. Nevertheless, legislators care about electoral consequences when voting (e.g., Ansolabehere and Jones, 2010; Nyhan et al., 2012; Bovitz and Carson, 2006, etc.) and thus they should also be concerned about what the majority of their constituents wants, which could be different from what the entire party supporters' want in general to be reelected (Mayhew, 1974). Especially when the constituency characteristics is different from that of party leader, legislators will be careful about following their leader in passing bills that are important to the leader. This chapter considers constraints from both sides - constituents and the party leaders.

In brief, based on the role of housing prices inequality in determining constituency preferences as discussed in the earlier chapters, I argue that the more unequal housing price of a district is, the more salient economic issues in the district is, providing the representative incentives to deviate from their party leaders. Meanwhile, if some districts are highly unequal, it may cause heterogeneous preferences among members of the same party, resulting in one's different behavior from other party members (Aldrich and Battista, 2002). This chapter focuses on the difference between a member and their party's floor leaders in terms of district preferences measured with housing prices distribution. In Korea, party leaders have been highly influential on individual party members and being not loyal to the leader risk electoral success in some regions where party label and party leader's endorsement matter most of the time. Although regionalism has been reduced over the past few decades, the role of party leader is still important.

Next, I briefly discuss the legislative politics in the 16th-18th KNAs from 2000 to 2012 and review prior research on the Korean legislature for these periods in the context of how politics surrounding welfare policies in general and housing policies in particular have become critical source of partian polarization in the KNA's legislation. I then examine the linkages between housing price inequality and legislators' behavior, focusing on how the district-level inequality affects the extent to which individual legislative members deviate from his or her party's overall position.

The main argument of this chapter is that the extent to which legislators deviate from his or her party is influenced by the difference in policy preferences between members' constituencies and the party leader's. I further expect that the extent of a member's deviation from the party will be conditional on their party affiliation. I also argue that legislators deviation can be influenced by ideological gap between them and their party leader. Then empirical results supporting the arguments are presented. Lastly, I review the implications of this chapter's findings.

4.2 Background for the 16th-18th (2000-2012) Korean National Assembly

Steadily recovering from the 1997 Asian financial crisis, Korea had transformed its fundamental economic structures by liberalizing the financial sectors, reducing the levels of debt, and enhancing labor market flexibility etc., following the International Monetary Fund's measures. These measures were taken under the 15th President Kim Dae-jung (1998-2003), the first leftist president in the history of Korean democracy. President Kim had dramatically changed the direction of national policies towards North Korea under the so-called Sunshine Policy by lifting economic restrictions and holding peaceful dialogues with the leader of the North. These soft attitudes towards the North under communist dictatorship are considered to be "leftist" in South Korea. However, Kim Dae-jung's neoliberal economic polices to save the country from the 1997 financial crisis generated increasing inequality with substantial socioeconomic impact on Korean society (Haggard, 2000). The unemployment rate stood higher than it did before 1997 and income inequality increased. The size of the middle class shrank from 42.3% to 40.7% between 1998 and 2004, while the size of the lower-middle class or lower class became bigger (Nam, 2007; Shin and Shin, 2007). Accordingly, economic and inequality issues became more important to the Korean voters.

Socioeconomic changes mentioned above in turn rendered the President Kim's Millennium Democratic Party (MDP, the current Democratic Party) increasing popular support. The first post-crisis general election for the 16th KNA, which took place in April 2000, allowed the MDP to be a major legislative party, winning 42.1% of the seats. Meanwhile the Grand National Party (GNP), a major conservative party, won 48.7% of the seats. Around the mid-16th KNA, December 19, 2002, the MDP's Roh Moo-hyun (2003-2008) won the presidential election becoming the second leftist president in the country. His political support is largely based on the so-called "386 generation" referring to those who gained political power in their 30s, actively participated in protests against a military dictatorship to promote democracy throughout the 1980s, and who were born in the 1960s. Those of the 386 generation called for greater economic equality afterward, while maintaining a sympathetic view of the North.

In the meantime, the adoption of proportional representation and the gender quota system in 2001² allowed small parties to represent the poor and and other marginalized groups of the society. For example, labor parties in Korea were historically unsuccessful in entering the KNA, because of limited labor movements under the conservative governments during the rapid economic growth.(e.g., Kang, 2013; Choi, 2002). However, in the 2004 Election, the Democratic Labor Party (DLP), a far-left party, was able to capture 10 seats, entering the KNA for the first time. More importantly, the Uri Party (former MDP) won 152 seats (50.8%), becoming the majority in the Korean legislature for the first time as a leftist party.

After 10 years under leftist presidents, President Lee Myung-bak (2008-2013) of the GNP

²Korea maintained mixed member majoritarian system since 1963, in which voters had only single ballot. In 2001, the Constitutional Court ruled that one-vote mixed system is unconstitutional because if some small parties cannot run in every district and voters who support small parties would have no opportunity to vote for the party they support with only single ballot. Voters cast two ballots, one for single-member districts (SMDs) and the other for a national party list PR. The minimum share of the votes that parties need to gain is 3%.

took power largely based on his pledges to revive the country's economy with pro-market economic policies. However, his popularity as a non-traditional party politician was also based on his background as a self-made man, who was born in poor family but became a CEO of the Hyundai Construction and then the Mayor of Seoul. As mayor of the city of Seoul, Lee completed several urban redevelopment projects successfully, increasing property values in the ares affected by the redevelopment projects. Thus not only the conservative pro-market voters, but also a great proportion of poor voters who were the hope of redevelop projects of their villages also supported him (Lee You, 2011). In the 2008 General Election, President Lee's conservative GNP won 153 seats, taking the title as the ruling party back after ten years. Scholars rightly point out that one of the major reasons for a landslide winning of the GNP was the "New Town Projects," a redevelopment project that has been put forward by almost all candidates of the GNP in their election campaign.

Nevertheless, despite the popularity of President Lee among the poor (at least in the beginning of his term), inequality kept rising, provoking leftist parties to establish party platforms based on economic issues rather than traditional regionalism. In fact, as Mainwaring and Scully (1995) argued that party systems in new democracies show lower levels of institutionalization, Korean political parties also lacked institutionalization (Hellmann, 2014). Inter-party competition was driven by a small number of politicians in leadership who are mostly interested in achieving their personal interests (Hellmann, 2014, p.53) and no parties had to organize their support based on social cleavages (Lipset and Rokkan, 1967). The reason, in part, is that Korea never achieved democracy. Rather, universal suffrage was given at the time of the independence from Japanese rule in 1945, giving parties little reason to mobilize citizens along any social cleavages. In addition, land reform after the independence left most of the citizens relatively equal, and as a result, landowner vs. labor cleavages did not form during this period. Furthermore, the Korean War that broke out in 1950 led to nationwide anti-communism, restraining any diverse ideologies from rising. Finally, during the 1970s, when the state-led economic development was a single priority, the government strictly controlled labor movements. Reflecting what I discussed above, many scholars went so far as to describe Korean politics as not based on cleavage or class, but only on regionalism (e.g., Choi, 2002; Lee, 1998): Taegu-Kyeongbuk (a.k.a. TK) region, which was the political base of dictatorial President Park from the conservative Democratic Republican Party, vs. Honam Region, which later became the political base of President Kim Dae-jung's Democratic Party. These two regions experienced disparities in economic growth because the TK region was able to benefit more from Park's state-led economic development plan, strengthening voting based on regionalism.

Korean political parties in the era of state-led economic development did not work as in Western democracies. Only conservative parties preceded by President Park's Democratic-Republican Party survived by focusing on national security under the continued threat from North Korea and economic growth. Meanwhile, several democratic parties after the country's democratization in 1987 focused on the political framework of "democratization vs. anti-democratization" rather than mobilizing voters around other social cleavages such as workers vs. owners, etc (Choi, 2002). The most important factor for parties' mobilization was based on age, because older voters who experienced war tended to strongly support the conservative party, regardless of their income levels (Kang, 2013; McAllister, 2007). However, after experiencing sharp economic growth and the 1997 financial crisis, increased economic inequality in the country promoted the growth of class consciousness among voters. Some scholars demonstrated that class voting has emerged in the past two decades (e.g., Kang, 2011; Lee, 2015; Lee and You, 2019). Kang (2011), for example, demonstrated that there is a new class cleavage based on different levels of income in Korea.

In the meantime, a group of scholars recently started focusing on real estate property, arguing that property ownership or types of housing are more important in shaping Korean voters' class consciousness and voting behavior (e.g., Kang, 2012; Lee, Lee, and Kim, 2013; Son, 2008; Kim and Choi, 2018). First of all, Son (2008) in his influential book titled *Budongsan Gyegeup Sahoe* (A Society of Housing Class) argued that the social class of the contemporary Korean society can be divided into six classes: the first class (with 2% of the population) captures those who own a house (or multiple properties) worth more than USD 620,000, the second class for those who owns any house(s) less than USD 620,000, the third class for those who owns a house but renting, and so on. The sixth class, which Son also refers to as extreme poverty class, is those who do not own any house and live in basement or in a rooftop house (which is usually used as storage but mostly illegally converted to a

single room unit for rentals).

Son's later book further showed that districts with a higher rate of homeownership experienced higher turnout and are more likely to support conservative parties (Son, 2010). Both books were influential in that they provided political scientists studying Korean politics with a new concept of "housing class," encouraging to study how housing class could affect politics. Although neither of Son's books reveal any causal relationship using statistical analysis between housing class and political actors' behavior, many scholars have built on his idea of housing class. For instance, Lee, Lee, and Kim (2013) show using survey data that people's property ownership (including real estate and stocks) greatly influence one's attitudes toward income inequality and redistributive policies. Kang (2012) found that homeownership impacted voter turnout in the 2012 General Election. Kim and Choi (2018) showed that there is a causal relationship between homeownership on voter's decision to turn out in three presidential elections and pointed out that homeownership will be a critical political cleavages in Korea. Reflective of the above works, the major agenda of presidential and legislative election campaigns centered around property tax and redistributive policies aimed at reducing inequality.

As leftist parties have become more efficient in shaping elections as rich vs. poor against the backdrop of increasing inequality, many pundits pointed out that the two major parties do not serve for uniting voters but only dividing them. This is espoused by the recent scholarly works examining the party polarization in the Korean legislature since 2000. For example, Lee and Lee (2015) showed that the KNAs had been polarized, especially after 17th KNA. Other scholars relying on the survey on the legislators' ideology argue that political polarization in the Korean politics during this period had been led by the group of elites (e.g., Lee, Lee, and Kim, 2013; Ka, 2014), while Lee and Lee (2015) pointed out that the polarization in the Korean politics is led by the leftist parties unlike the party polarization in the United States which was largely led by the Republican. Lee and Lee (2015) call this "asymmetric" polarization, which is a type of party polarization led by one party (see Theriault, 2008, for more discussion on the types of polarization). In the same vein, Lee (2011) demonstrated that polarization in the Korean legislature occurred mainly surrounding issues related to economy, education, and welfare, which are usually dominated by the leftist Democratic Party. All these existing works suggest that the KNA has become polarized since 2000, however, they do not explain what led to polarization or what made legislators, especially those of the leftist parties, to become more progressive, resulting in polarization led by the leftist parties. We are also unclear whether the leftist Democratic Party members voted together because their leader disciplined them to follow the position of the party or the leader's own policy position. They could also vote together because many members of the Democratic Party shared similar district preferences due to high levels of inequality in many districts.

Noting the existing findings on the party polarization, this chapter's findings will further help to understand what is driving the party polarization in a so-called asymmetric way, in which only one party moves away from the moderate position (Theriault, 2008). My data on roll calls confirms that there was polarization, and that the left Democratic Party was more unified than the conservative party. I explain this asymmetric polarization based on my theoretical framework (discussed in Chapter 2) which suggests that some of the conservative legislators - but not all - facing growing wealth inequality in their districts will confront strong incentives to deviate from their parties.

Considering increased inequality at the national level, it is reasonable to suspect that some districts may have experienced more increase in inequality which would in turn force right party members to be more progressive than their co-partisans, making the right party less united. At the same time, districts that experienced higher rate of increase in inequality may support more left party members allowing them to be more united and disciplined in voting behavior. Nevertheless, the voting unity measured with roll-call votes cannot tell us if it is because of increased homogeneity of preferences across members' districts or it is because of party leadership which has been traditionally very strong with nomination power and financial resources for election campaigns in the Korean party politics.

Consider, for example, that the Korean National Assembly voted on corporate income and individual income tax amendments on April 30th 2009.³ Two related bills were proposed by the Korean Ministry of Strategy and Finance: one is to decrease tax on owners of multiple real estate properties and thus increase investment in the real estate market and the other is

³Bill No. 1804359 and Bill No.1804762

to exempt tax on non-resident holders of national bonds so that the country could increase investment by foreigners as well as Koreans overseas, and to expand foreign currency liquidity. Although capital owners and rich voters welcomed the proposals of amendments, it faced severe opposition by the Democratic Party because the bills favor the rich by reducing tax and promoting less redistribution.

As *Polinews* reported, the ruling conservative Grand National Party (GNP) had an internal meeting with legislative party members to decide the party's position on both bills but faced a dilemma (Kim, 2009). While many of them who supported the bills were representing affluent districts, called the Gangnam area, members from other districts were afraid that their voters would think the GNP as a party only for the wealthy. The GNP's floor leader, Hong Jun-pyo expressed that he was not in favor of the bill put forward by President Lee's administration in the first place considering the public mood, however, he changed his stance later on influencing other members to vote for the bill (Kim, 2009). Because Hong was a floor leader and in charge of the GNP' nomination committee, members once not in favor of the bills changed their stance to follow Mr.Hong.

However, not every member could switch from their initial disapproval of the bills. Consider, for example, Nam Kyung-pil, former legislative member of GNP between 1998 and 2014, who had served five terms and later became the governor of Gyeonggi Province, the largest province in Korea, in 2014. He became a KNA member for the first time through a by-election in 1998 as a son of a former KNA member who represented the same district between 1992 and 1998. Representative Nam's farther owned several businesses in the city of Suwon in Gyeonggi Province. Because of this background and his degree from Yale University, challengers attacked him by calling him "rich kid" and "gold spoon" in every election. Nevertheless, Mr. Nam took a number of moderate and progressive positions that brought him in line with voters in his congressional district, Paldal, in the city of Suwon, but not in line with the party leader. Although Nam's Paldal district was considered conservative with a slight margin in presidential elections, it was only due to the high ratio of old voters who tend to be conservative, especially towards North Korea. Considering the support rate for leftist presidential candidates in this district,⁴ Nam had to be always keen to pro-poor

⁴The vote share of the Paldal district in the presidential election:

policies. He also published a book titled "the New Men of Power: Not Progressive, Nor Conservative - New Class Syndrome (Nam, 2011)," which was one of his efforts to encompass voters of both sides of ideological spectrum. Nam also contended that the party's ideological position that had been anchored in the right should move leftward and the country should increase social spending in an interview (Sohn, 2004).

In addition, according to the study by Suwon City in which Paldal district is located, the Gini-coefficient was 0.399 for Nam's district. This is a lot higher than the City's 0.35 and the least unequal district in the city of 0.3 in 2015 (Cho, 2017). If we look at the levels of housing price inequality based on my data, Nam's district is much more unequal than the party leader's district in terms of housing price distribution. Specifically, the the Gini-coefficient for housing price inequality for the leader Hong's district, Dongdaemun 2nd District, recorded 0.18 in 2008 whereas it was 0.27 for Nam's district. The average at the national-level was 0.26.

Along with Mr. Nam, 22 GNP members voted against the bills whereas 107 GNP members voted for the bills. All Democratic Party members voted against the bill. Nam's votes against the bills to reduce corporate income and individual income tax illustrate how a legislator would consider electoral risks given the general policy preferences held by the majority of constituents, and sometimes may want to avoid the electoral cost for being too loyal to the party's central position (Carson et al., 2010). Out of 22 members, my housing price data contain 8 people who were against the bill and all 8 members were from more unequal districts than the district of the leader Hong.

¹⁶th (Dec. 2002): Roh Moo-hyun (MDP) 49.35% - Lee Hoi-chang (GNP) 45.26%,

¹⁷th (Dec. 2007): Chung Dong-young (DEM) 21.98% - Lee Myung-bak (GNP) 50.64,%

¹⁸th (Dec. 2012): Moon Jae-in (DEM) 47.18% - Park Geun-hye (GNP) 52.44%,

¹⁹th (Dec. 2017): Moon Jae-in (DEM) 40.50% - Hong Jun-pyo (GNP) 22.59%.

4.3 Research Design

4.3.1 Measuring the Dependent Variable: Legislators' Deviation from the Party

For my dependent variable, the degree to which individual legislators deviate from their party leaders, I adopt a method based on Item Response Theory (IRT) to estimate ideal points using roll call data based on the methods developed by Clinton, Jackman, and Rivers (2004) and Imai et al. (2011). Among several benefits of estimating ideal points using the IRT method, the most useful aspect is that one does not have to be restricted to the number of bills when using a statistical software. Also the IRT approach allows us to use any kind of roll-call data set as "lop-sided votes and short voting records pose no problems" (Clinton, Jackman, and Rivers, 2004, p.359).

I sorted out bills that are proposed by four committees working on legislation on economic policies and welfare-related issues, which I call economic or welfare bills. The number of economic bills for the 16th KNA (2000-2004) was 30, 220 for the 17th KNA (2004-2008), and 533 for the 18th KNA (2008-2012). The reason for the very small number for 16th KNA is because the roll call data is available only the second half of the 16th KNA. Also, the number of economic bills, particularly those related to welfare policies was smaller than later in general because welfare issues have become more salient afterward.

The IRT method calculates ideal points of legislators using the latent probability for a legislator to say yea (or nay) in general based on the observed votes and then informs us the relative position of a member in terms of yea or nay. This method yields ideal points estimates for one-dimensional case, which is appropriate when dealing only with economic bills. I calculate the difference between the IRT estimates of a member and of the leader for my dependent variable, *IRT Deviation from Leader*.

Figure 14 illustrates the distribution of ideal points for each party based on the IRT method only with economic bills for the 16th, 17th, 18th KNAs. The plot shows that there has been changes in ideal points distribution of the two parties and the coherence of ideal points among members of each party regarding economic policies between 16th and 18th KNAs.



Figure 14: IRT Estimates with Economic Bills, 16th-18th KNAs



Figure 15: W-NOMINATE Estimates (first dimension), 16th-18th KNAs



of members in terms of the right-left spectrum, we see that the conservative GNP party is on the left side and the progressive Democratic Party is on the right side. Dashed lines represent the mean of members of each party and the estimates for each party's leader are marked in letters. It is interesting that Democratic leaders tend to be around the mean IRT scores among their co-partisans while the conservative GNP leaders are not always likely to be in the middle on economic bills. The plots in Figure 14 implies that, as I show later, on economic and welfare related issues the left party members are more disciplined given the sharper graph for the Democratic Party members (in blue area).

Before we move on, consider Figure 15 which illustrates the distribution of W-NOMINATE estimate based on the method of Poole and Rosenthal (1984), using all bills for the same legislators. We observe plots that locate the two parties according to the left-right spectrum. It is hard to discern if the ideological distance in terms of mean difference between the two parties has grown, but we see that members are less spread in the 17th KNA than in the 16th KNA confirming the existing studies on polarization in Korea (Lee and Lee, 2015). Comparing Figure 14.

4.3.2 The Independent Variable: Housing Price Inequality (2000-2008)

For the main independent variable I use the measure of the Gini-coefficient which is a measure of statistical dispersion of income or wealth of a group of people. I calculated the Gini-coefficient of housing prices distribution for each congressional district. To note again, a Gini coefficient of 0 means a perfectly equal distribution of housing prices of a district while a Gini coefficient of 1 presents a perfectly unequal distribution of housing prices of a district. A detailed discussion about the data is discussed in 2. As the general election takes place in mid-April, I used housing price registered in March of election year for each Assembly to create the measures of inequality.

4.3.3 Control Variables

I also include several control variables that could affect legislative behavior of members of the KNA. Most importantly, for *Hypothesis 3* to test that a member's deviation is also influenced by ideological difference between a member and the party leader, I calculate the gap between a legislator's W-NOMINATE score and the score of the party's floor leader(s). In the Korean legislative politics, party leaders have played critical roles and sometimes they themselves manifest the party's position. Also, party leadership often does not rely on one person, such as a party leader or a party's secretary general. Especially in recent years, floor leaders have become more powerful and have been increasingly important than before as they pass most bills they proposed in the KNA (Jeon, 2014). A single KNA is composed of two sessions (two years per each), and legislators of each party elect one floor leader per session. However, sometimes floor leaders resign from their position before the session ends, there could be more than two floor leader for one term. For example, the GNP's floor leadership was under 9 members for three KNAs. Thus, I consider the mean of W-NOMINATE scores of all floor leaders from each party for each term and calculate the distance between that mean and each legislator's W-NOMINATE score (*Ideology Gap*). Figure 15 plots the W-NOMINATE scores of legislators from the 16th to the 18th KNAs. In the mediation methodology, this variable can also be called *mediator*.

Districts' economic characteristics and levels of development also influence legislators' voting behavior (Aguilar and Pacek, 2000). I incorporate changes of land price to control for a link between legislators' behavior and deviation from the party. While one could use regional GDP measures, the regional GDP data are only available at the region-level. Thus I chose land price change index because land price increases when the value of products from a certain geography increases, so changes of land price could tell us about the districts' economic performance. So I employ *Change in Land Price* drawing from the database of Korea Appraisal Board, which a state-owned company managed by the of Ministry of Land, Infrastructure and Transport.⁵

Furthermore, even though Korea has experienced reduced regionalism in recent decades, it is still common to observe that KNA members who are from the same region are cohesive and work as strong support base. There are two regions (A region is equivalent to a state.): Youngnam region (also known as TK region) and Honam region. Legislators from these regions tend to become critical members basking in the power of two former presidents Kim

⁵https://www.r-one.co.kr/rone/resis/common/main/main.do

Dae-jung and Kim Young-sam who came from Honam and Youngnam respectively. Thus, members from these regions could have less incentive to deviate from the party line. In addition, certain regional characteristics could influence the legislators, so to account for this, I present regional dummy variables, *Youngnam* and *Honam* in all analyses to account for concerns presented in past studies of regionalism in Korea (e.g., Choi, 2002; Lee, 1998). For *Youngnam* variable, I coded 1 if a legislator is from Youngnam region and 0 if they are from other regions. For *Honam* variable, I coded 1 if a legislator is from Honam region and 0 if they are from elsewhere. Other electoral variables such as *Vote share* and *Turnout* data are gathered from the Korean National Election Commission (NEC). *Term* and *Chairship* data come from the website of the KNA. I present summary statistics in Table 4.

	count	mean	sd	min	max
IRT Dev. from Leader	632	0.74	0.84	0	5.02
Gini Gap	632	0.06	0.04	0	0.23
Ideology Gap	632	0.18	0.20	0	1.54
Democrat	632	0.41	0.49	0	1
Term	689	1.96	1.15	1	6
Chairship	690	0.22	0.50	0	3
Turnout	635	54.93	8.34	33.97	76.13
Vote Share	636	51.96	10.56	25.20	92.40
Youngnam Region	690	0.18	0.39	0	1
Honam Region	690	0.12	0.33	0	1
Change in Land Price	690	3.01	2.14	-2.57	16.25
Observations	690				

Table 4: Summary Statistics

4.4 Statistical Analysis and Results

Table 5 shows the results of the analysis which are generally consistent with my expectations. Model 1 reveals the *Hypothesis 1* that the larger difference in housing prices inequality inequality between a member's district and the leader's district, the member is more likely to deviate from the position of the party leader on economic and welfare related bills.

	(1) Base	(2) Democratic Party	(3) GNP	(4) Interaction
Gini Gap	$2.216^{**} \\ (2.923)$	-0.843 (-1.046)	3.495^{**} (3.263)	3.402^{***} (3.697)
Term	0.073^{*} (2.225)	-0.050 (-1.484)	0.110^{*} (2.315)	0.066^{*} (2.110)
Chairship	-0.195^{**} (-2.764)	-0.046 (-0.689)	-0.227^{*} (-2.073)	-0.178^{**} (-2.658)
Turnout	$0.004 \\ (1.013)$	-0.004 (-0.950)	$0.009 \\ (1.596)$	$0.007 \\ (1.654)$
Vote Share	0.011^{**} (2.978)	-0.005 (-1.263)	0.017^{**} (3.103)	0.008^{*} (2.120)
Youngnam Region	$\begin{array}{c} 0.133 \ (1.342) \end{array}$	-0.112 (-0.226)	-0.281^{*} (-2.218)	-0.103 (-1.032)
Honam Region	-0.743^{***} (-5.646)	-0.002 (-0.014)		-0.412^{**} (-3.124)
Change in Land Price	$0.018 \\ (0.972)$	$0.028 \\ (1.468)$	$0.045 \\ (1.731)$	$0.028 \\ (1.598)$
Mean Dist. Price (log)	-0.292*** (-4.883)	-0.187^{**} (-3.063)	-0.503^{***} (-5.607)	-0.361^{***} (-6.287)
Democrat=1				-0.289^{*} (-2.530)
Democrat=1 × Gini Gap				-4.701^{**} (-3.138)
Constant	$2.471^{***} \\ (3.563)$	2.710^{***} (3.758)	3.973^{***} (3.928)	3.343^{***} (4.945)
$\frac{\text{Observations}}{R^2}$	$586 \\ 0.1470$	$253 \\ 0.0720$	$333 \\ 0.1911$	$586 \\ 0.2349$

Table 5: The Effects of Housing Price Inequality on Legislators' Deviation from Party Leaders

Note: Standard errors are in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

Regarding *Hypothesis 2* that the impact of difference in housing prices inequality between a member and the leader on the deviation of a member will depend on the type of party, the results are in Model 2 and 3 by separating the two parties and in Model 4 with interaction terms, being Democrat is 1 and GNP member 0. Figure 16 illustrates the result of Model 4, the interaction model from Table 5.



Figure 16: Predictive Margins by Party Dummy

Figure 16 supports the expectation, but interpreting substantively is quite tricky because it is difficult to know what a member's IRT deviation from the leader, for example, by 0.5 does mean in reality. In addition, the difference of Gini-coefficients of, for example, 0.05 between a member and the leader could seem very small. However, suppose, for example, that district A is 0.25 and district B is 0.3, which is higher than A by 0.05. This difference can yield different structure of housing price distribution in the sense of Lupu and Pontusson (2011) who considers relative position of the median voter, influencing legislators' election strategies. Another practical way of comparing the scale of Gini-coefficient can be looking at changes in the Gini-coefficients over time. For example, according to the US Census Bureau, the Gini-coefficient measuring income inequality has been increased from 0.43 in 1990 to 0.48 in 2017, implying that a difference of 0.05 in Gini-coefficient is a scale of change that could occur over almost 17 years in a country. Before I move on to the mediation analysis to test H3, I run preliminary regressions to see if there is any conditional relationship between ideological gap and inequality gap. In the context of H3, one could expect that the effect of differences in housing price inequality between a member and the leader will be moderated by the ideological gap between them. However, we do not see the statistical significance on the interaction terms in Table 6.

	(1) All	(2) Democratic Party	(3) GNP
Gini Gap	2.166^{*} (2.150)	$0.322 \\ (0.297)$	$\begin{array}{c} 4.318^{**} \\ (2.870) \end{array}$
Ideology Gap	1.390^{***} (4.105)	1.390^{***} (4.051)	2.049^{***} (3.645)
Gini Gap \times Ideology Gap	-2.921 (-0.771)	-7.804 (-1.426)	-9.812 (-1.761)
Term	$0.058 \\ (1.791)$	-0.073^{*} (-2.237)	0.122^{*} (2.546)
Chairship	-0.176^{*} (-2.547)	-0.026 (-0.416)	-0.263^{*} (-2.390)
Turnout	$0.007 \\ (1.868)$	-0.000 (-0.068)	0.012^{*} (2.075)
Vote Share	0.010^{**} (2.844)	-0.002 (-0.461)	$\begin{array}{c} 0.010 \\ (1.836) \end{array}$
Youngnam Region	0.271^{**} (2.909)	$0.000 \\ (0.001)$	$0.010 \\ (0.081)$
Honam Region	-0.440^{***} (-3.629)	$0.119 \\ (1.139)$	
Change in Land Price	-0.015 (-0.953)	$0.008 \\ (0.484)$	-0.025 (-1.099)
Constant	-0.590 (-1.833)	$0.406 \\ (1.211)$	-0.851 (-1.772)
$\frac{\text{Observations}}{R^2}$	$586 \\ 0.1854$	$253 \\ 0.1536$	$\begin{array}{c} 333\\ 0.1816\end{array}$

Table 6: The Effects of Housing Price Inequality on Legislators' Deviation from Party Leaders (DV: IRT estimates deviation from the party leader.)

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

Nevertheless, as we notice the significance for *Ideological Gap*, I proceed to explore a me-

diated relationship between inequality difference and a member's deviation to test *Hypothesis* 3. I adopt the method proposed by Imai et al. (2011) that can separate an average effect of main independent variable of our interest (also called average treatment effect, ATE), the difference in housing price inequality between a member's district and the party leader's district, and an average causal mediated effect (ACME) and an average direct effect (ADE). In our analysis, I am interested in whether or not a legislative member deviates from the party leader when there is difference in the levels of housing inequality between their respective districts (ATE). I expected the mediation to be general ideological gap (ACME) that might exist beyond the specific economic bills, which will influence a legislator's deviation.

Figure 17: The Coefficient Plot of the Mediation Effect of Ideology Gap



I run the mediation analysis to test *Hypothesis 3* that the effect of inequality gap between a member and the leader could pass through the ideological gap. I used R package mediation in the analysis to see if this mediation effect is statistically significant (different from zero or not). Figure 17 visually plots the results of mediation analysis, presenting that the ACME effects are different from zero. I found that mediation effect is significant: the direct effect (ADE) of inequality difference between a member and the leader is smaller than the total effect, indicating that there is a mediating effect of ideological gap. Specific results of the causal mediation analysis are presented in Table 7. The results imply that the effect of the difference in housing price inequality between a member and the party leader on the deviation of the member passes through general ideological gap between the two.

	Dependent variable:		
	Ideology Gap	IRT Deviation	
	(1)	(2)	
	First Stage	Second Stage	
Inequality Gap	0.508* * *	1.644 * *	
	(0.191)	(0.746)	
Term	0.014^{*} (0.008)	$0.059^* (0.032)$	
Chairship	$-0.037^{**}(0.018)$	-0.177^{**} (0.069)	
Turnout	0.003^{***} (0.001)	$0.008^* (0.004)$	
Vote Share	-0.001 (0.001)	0.010^{***} (0.004)	
ТК	-0.009(0.024)	0.272^{***} (0.093)	
Honam	-0.068^{**} (0.031)	-0.439^{***} (0.121)	
Land Price Change	$-0.005 \ (0.004)$	-0.015 (0.016)	
Ideology Gap		1.161^{***} (0.162)	
Constant	$0.050 \ (0.082)$	-0.571^{*} (0.321)	
Observations	586	586	
\mathbb{R}^2	0.051	0.185	
Adjusted R ²	0.037	0.172	
ACME	0.643	[0.13 - 1.23]	
ADE	1.145	[-0.47 - 2.85]	
Total Effect	1.788	[0.09-3.50]	
Mediated Proportion	0.359	[0.01-0.66]	

Table 7: Mediation Analysis Results

Note:

*p<0.1; **p<0.05; ***p<0.01

4.5 Conclusion

This chapter shows that different levels of inequality across individual legislators affect the extent to which they behave in line with the party leadership. I presented that the difference in housing price inequality between rank-and-file members and the party leader affects the member's deviation from the leader, focusing on bills related to economic policy and welfare issues. Moreover, I also expected that the deviating behavior on bills related to welfare policies will occur through general ideological difference. Findings using a causal mediation analysis support this expectation.

In order to examine how the difference in inequality between rank-and-file members and the party leader affects whether members vote in line with their leader, this chapter had to overcome the fact that a measure of income inequality at the congressional district-level are rarely provided. Instead, given that theoretical and empirical importance of inequality in housing price distribution as discussed in the previous chapter, I use housing price inequality at district-level for all legislative members and compare different levels of inequality across members and the party leader. In this way I was able to show that levels of housing price inequality constrain legislators voting behavior in terms of whether they vote in line with their leaders. I acknowledge that more successful analysis strategy could include survey methodologies that directly measure individual legislators' consideration on their district's housing price inequality when casting votes against or in favor of their party leaders, but I leave this task for future research. In conclusion, this chapter contributes to the literature on legislative behavior, inequality and responsiveness. It shows that how heterogeneity of members' preferences measured with housing price inequality affects their position relative to their party leader.

5.0 Housing Price Inequality and Candidates' Campaign Strategies

5.1 Introduction

In this chapter, I apply the theory developed in Chapter 2 to individual candidates facing an electoral competition. Consider the two candidates in the 2016 Korean General Election. While the two main Korean parties are highly polarized around 2016 (Lee and Lee, 2015; Lee, 2014, etc.), the two major parties' candidates competing in Gwangmyeong City 2nd District presented campaign brochures proposing very similar policies. Gwangmyeong City, located nearby Seoul, is one of satellite cities developed by the central government in the early 1970s as the population exploded in Seoul. While other satellite cities successfully developed into modern residential areas, this Gwangmyeong city has remained relatively poor for three decades. Being underdeveloped and having more poor people than other areas, national issues such as policies towards North Korea and national property tax policy were less important to the Gwangmyeong city's voters. Legislative elections thus were about who could attract more central government's funding to (re)build the public transportation system and other infrastructure, and candidates thus presented similar platforms rather than highlighting nationally polarizing themes across the two parties. By contrast, in Seongbuk 1st District located in Seoul, where there are relatively even number of people of poor, middle class and rich, the candidates followed their parties proposing national positions that were diametrically opposed to one another. These cases illustrate that, in some circumstances, candidates of different parties will appeal in similar ways to their voters while others will diverge in their efforts to win majority support. What explains this difference?

The literature on political polarization offers inequality as the primary explanation for polarization¹ of parties (e.g. McCarty, Poole, and Rosenthal, 2006; Garand, 2010, etc.). For example, McCarty, Poole, and Rosenthal (2006) argue and show that voters' preferences are nowadays more related to their income level and the rich people are more likely to support for the Republican Party than in the past while poor voters are likely to support for the Demo-

¹Throughout the chapter, I use divergence and polarization interchangeably.

cratic Party. One of the important limitations of studies focusing on party polarization and national-level inequality, however, is that individual legislators and candidates are considered moving along their parties and aggregate voters' preferences measured with the national level inequality. In other words, we assume that individual representatives of a conservative party will be more responsive to the rich voters. In addition, the national-level studies focusing on party does not explain how and why, under rising party polarization, some individual members are different from their parties and garner votes in their own constituency. Will an individual candidate of the conservative party represent only the wealthy voters of their district? We have relatively little knowledge about the relationship between inequality at the district-level and candidates' divergence/convergence as a way of responding to constituency preferences.

To overcome the limitations of studies with a national focus, McCarty and his colleagues in a more recent work have examined the causal effect of state-level inequality on state legislatures in the U.S. They concluded that income inequality has led some Democrats to be more liberal while moving Republicans to rightward, causing polarization in American politics (Voorheis, McCarty, and Shor, 2015). Garand (2010) also focusing on state income inequality suggests that the U.S. senators from more unequal states are more ideologically polarized. Even these studies, however, do not provide concrete explanations how inequality can affect electoral competition of two candidates in each district, whether they diverge from (polarize) or converge to each other.

In this chapter, I join the above scholarship that examines the effect of inequality on representatives' polarization beyond the national focus. Specifically, I examine the relationship between inequality at the district-level and candidates' divergence or convergence as a way of responding to constituency preferences.

The lack of understanding on inequality and candidates' divergence is mainly due to the limitations of individual candidates' campaign documents. Compared to the parties' positions and responsive strategies that are easily available through their manifestos, individual candidates' documents are relatively less available except, for example, the TV advertisements and the legislative activities of incumbent. Although these documents are useful, these are not specific enough to know how individual candidates appeal to their own constituency. Another main challenge has been the difficulty to measure the main explanatory variable, the district-level inequality. To solve this limitation, as I discussed in detail in Chapter 3, I use an original district-level dataset on housing price inequality that I built. This district level inequality data will allow us to explore variations in the level of inequality across districts, and thus to examine how candidates compete by polarizing or converging to each other depending on their district's inequality.

To recap my theoretical expectation on the context of election campaigns presented in the Chapter 2, I argue that, if we consider individual candidates competing in the same district, the behavior of right party members will not always be consistent with right parties as described by Tavits and Potter (2015). Instead of focusing on social values, the right party candidate may also have to focus on welfare issues if their district's inequality is a salient issue in order to get elected. Even if a rightist candidate has little chance of winning, totally ignoring an issue that is critical to majority voters of the district will be difficult. Moreover, while the study of electoral responsiveness and issue ownership has mostly focused on how often parties or candidates talk about issues such as welfare or redistribution, I further consider an alternate way through which candidates could appeal to voters who are relatively poor, which is by promising particularistic goods.

In this chapter, I argue and show that districts of highly unequal distribution will provide candidates from two different parties with more incentives to run similar campaigns. More specifically, because highly unequal districts will have severely right-skewed distribution, this district will have relatively greater number of voters below the mean in the housing price distribution compared to equal districts, politicians will be more likely to focus on policies for these people. In contrast, in districts where wealth is more evenly spread across different levels of housing price, candidates could appeal to contrasting groups and they will be more likely to diverge from each other in election.

My argument that the more unequal distribution of housing prices of a district, candidates' campaigns will look more similar is supported by empirical tests. I utilize election campaign brochures of individual candidates that I analyze through the text analysis approach. Although election campaign brochures contain mostly valence issues in many countries, I take advantage of campaign brochures of the 2016 Korean general election because they deliver to voters a wide range of candidate information including specific policy issues and proposals, constituency-targeted promises along with position and experience in their parties, educational background, and previous other work experiences.

To make clear, throughout this chapter, I focus on *inequality* and how candidates appeal to voters who are *relatively poor* in unequal district, rather than *poverty*. Although two concepts are related to each other, inequality takes into account the entire distribution of income, wealth, or education of an entire society, whereas poverty refers to only "the lower end of the distribution – those who fall below a poverty line" (McKay, 2002). On the other hand, inequality can be understood as relational, relative deprivation of any sort of wellbeings such as income, wealth, or education (e.g. Haughton and Khandker, 2009; Milanovic, 2012). When I refer to the poor in this chapter, I mean those who are *relatively poor* in the unequal distribution in a district, being on the left side of the wealth (housing price) distribution.

To note, there is only about 0.2% of the population (OECD, 2021) are living under an absolute poverty line.² In fact, as the Korean economy grew sharply while experiencing democratization, the need for social protection increased and several comprehensive welfare policies took place (see, for example, Song, 2003, for more detail).³ However, being not in poverty does not necessarily mean that there is no demand for better welfare or more redistribution. As inequality is rising in many countries around the world, people perceive their socioeconomic status as relational one (Condon and Wichowsky, 2020). According to the survey by the Ministry of Health and Welfare of Korea in 2020, more than 80% of the respondents answered that the country's welfare system is good and of high quality (Kim et al., 2020). Also one survey shows that 76% of respondents perceive that the income distribution is unequal in the Korean society, among which more than half see highly unequal (SME Daily, 2014), even though Korea has relatively low level of *income* inequality consid-

²This is relatively smaller than other advanced economies, such as the US reporting 1% of the total population under the poverty line. According to the World Bank data, poverty line of Korea as of 2016 is \$1.90 (World Bank, 2021)

³For example, all citizens have become able to join the National Public Pension Program since 1999 and the health care system since 2000. Most importantly, the Basic Livelihood Security Program was established in 1999 to provide cash, housing, and education, for citizens living in absolute poverty. Also, all public educations up to secondary schools are now free, (middle school since 2000 and high school since 2021) reducing the burden for basic education and jobs for low-income families.

ering its economic size and the level of economic development, ranked in the middle among OECD member countries. What we have seen in Figure 10 could partly explain why Korean people generally feel that economic inequality of the Korean society is getting worse. Thus, I contend that understanding how politicians are targeting the relatively poor voters in their constituency is important especially in a country of rising inequality. This requires us to consider a possible role of being relatively poor and its impact on political behavior and policy preferences. In other words, the demand for welfare may not be reduced even if the poverty level is very low. Voters, who are relatively poor and located on the left side of wealth distribution, could still demand for more welfare in any forms, which can be politically used by election candidates.

This chapter makes both an empirical and theoretical contribution by using the case of Korea since the country experienced a sharp increase in wealth inequality and polarization as well. Empirically, paying attention to growing wealth inequality, which is seen across the world, I build an original data set of district housing price inequality covering one-third of households. Furthermore, I examine candidate-level campaign brochures employing text-asdata approach (Structural Topic Modeling) to measuring candidate-level policy preferences in order to study candidates' responsiveness to inequality. Theoretically, I claim that housing price distribution shapes the policy preferences of voters and, in response, the behavior of politicians. This chapter sheds light on how both candidates strategically appeal to poor constituents in unequal districts. I argue that higher levels of housing price inequality of a district make inequality more salient to many voters, making both opposing-party candidates appeal to these voters who are around the median point of the housing price distribution. I find that candidates running in the same district behave similarly, promising targeted benefits as much as possible, when their district's inequality is high. Interestingly, conservative party's members try not to violate their party's conservative economic stance by avoiding mentioning "inequality" or "redistribution". Instead, they suggest targeted benefits as much as the opposite candidate. Findings have important implications for wealth inequality, responsiveness, and populist welfare rhetoric in a world of rising wealth inequality.

In the following sections, I first present my argument and hypothesis. Then after briefly introducing background information and major issues in the 2016 Korean General Elections, I discuss the advantage of using candidates campaign brochures. I also introduce the data of house price inequality at the district-level. Next, research design and empirical analysis are presented. Lastly, I review the implications of this chapter's findings.

5.2 Candidates Campaign Brochures as Data

Although there are various forms of campaign documents to study candidates' campaign strategies and responsiveness, such as advertisements (Ansolabehere et al., 1994), candidates' websites (Sulkin, Moriarty, and Hefner, 2007) or twitter (Ceron, 2017), in this section, I discuss the advantage of using campaign brochures and the characteristics of Korean campaign brochures.

Campaign brochures (or pamphlets) are a small booklet that candidates could publish their policy positions and platforms before elections. Unlike campaign flyers, signs, or banners that contain only the candidate's name often with their photo and a short slogan, campaign brochures are usually more lengthy so that candidates put more information on brochures for voters.

To examine how candidates compete with each other, polarize or converge, depending on the district-level inequality, I use the campaign brochures made by individual candidates for the Korean general elections. Campaign brochures used in the Korean election are different from the similar materials used in the US election in terms of how they are managed. For example, according to Federal Election Commission Campaign Guide, party committees at local level "may prepare and distribute campaign materials such as pins, bumper stickers, handbills, brochures, posters or yard signs... (Federal Election Commission, 2014, p.44-45)." This rule implies that in the US candidates could decide the types or budget of campaign materials candidates distribute. Studies have shown that incumbents may be in more advantageous position than challengers due to campaign funding more available to the incumbents (Ansolabehere and Snyder, 2000; Fournaies and Hall, 2014), suggesting that candidates face different conditions in campaign to appeal to their voters.

On the contrary, the Korean National Election Committee (NEC) manages the entire

process of the the distribution of campaign brochures. The NEC controls the types of contents, the number of pages, and delivery of those materials in a stricter way than the US case. The Article 65 the Public Official Election Act stipulates that candidates for legislative elections may make one booklet (or brochure/ pamphlet) for election campaign, limited up to 12 pages. Once candidates print their booklets up to the number of household and absentee voters registered in their district, they should send them to the office of the NEC in each electoral district. Then the NEC office post-mail the booklet to each household along with other election information such as the date of election and the location of polling station. The rules also regulate the organization of the booklet: in the second page of the booklet, candidates should include the following information: a) the net worth of the candidate himself or herself and of each candidate's spouse, direct ancestor and direct descendant, b) information of military service, c) record of the payment of income tax, property tax, and the comprehensive Real Estate Holding Tax and the record of the failure of depositing these taxes, d) criminal record, e) occupation, academic background, other professional experiences.

Throughout the process above, all voters receive the same campaign brochures of their district's candidates. It is also worth noting that citizens are not required to register for voting in Korea (except for overseas voters), suggesting that all Korean voters get the same quality of information about their candidates. Therefore, campaign brochures give us a unique opportunity to study candidates' preferences and issues most important to them during elections when they are most motivated for reelection and, thus, when they have great incentives to show how responsive they are to voters.

This chapter takes advantage of campaign brochures that contain more useful features to measure issue salience by quantifying the keywords in the documents or measuring the amount of space given to various topics (Budge, 2015). Furthermore, campaign brochures are not *cheap talk* in the case of Korean elections because the Korea Manifesto Center checks and publishes whether candidates' pledges and promises in their brochures are carried out at the end of each term in order to help voters evaluate candidates for the next election.

Meanwhile, for the purpose of this chapter which explores when the opposing-party candidates converge to each other as campaign strategies, understanding candidates' efforts to cultivate their personal votes to win elections by presenting specific promises is necessary. That is, in addition to exhibiting issue ownership of their party, candidates can add personal appeals tailored to their own constituents. In this regard, campaign brochures allow us to explore *'service responsiveness'* (Norris, 1997, p.29). Scholars use different approaches to measure constituency services, for instance, by looking at the amount of time spent for constituency meetings or how often they travel back to their district (Norris, 1997), campaign brochures can be useful to know specific promises on their future constituency services.

As I am interested in the question of how the district-level inequality in housing price distribution is associated with similarities or differences in campaign strategies between two candidates, the focus lies in the constituent's demands for constituency services. As I argued in the previous section, high levels of inequality make the inequality-related issues such as welfare arrangements and redistributive programs critical to constituencies, causing candidates to be similar. Although constituency services are not always related to policy issues, broad policies suggested at the party-level can be adjusted to related constituency services by candidates. Norris (1997) shows that district characteristics such as the degree of urbanization, ethnic diversity, and unemployment can influence how legislators respond to their constituents with various welfare services and targeted case works. Even though it is often hard to distinguish between constituency service and pork barrel (Crisp and Simoneau, 2018), appealing to voters can also be done through pork barrel, by promising "particularized benefits" through "the allocation of the national funds to projects for which an MC can credibly claim responsibility" (Mayhew, 1974, p.52-59). Cain, Ferejohn, and Fiorina (1987) claimed that pork-barrel spending is a common practice by legislators in the process of policy-making for those who want to maximize electoral success by promising allocation of national budget to their constituents. In brief, considering the discussion so far, campaign brochures are useful to explore their efforts to emphasize certain issues, whether they follow their party's owning issues or not, and their promises on specific constituency services or case works, all of which are influenced by constituency conditions.

In order to analyze the campaign brochures, I downloaded all the brochures of the 2016 General Election's candidates from the NEC's website.⁴ Although about two-thirds of the brochures were machine-readable, the rest were not because of watermarks or because they

⁴www.nec.go.kr

are scanned-photos of brochures. Because machine-read text files of brochures were necessary for my empirical analysis using the Structural Topic Modeling, I digitized the scanned-photos of brochures using an optical character recognition (OCR) reader when the brochures cannot be read. However, even after using the OCR reader, not all brochures became machinereadable. Therefore careful cleaning works of the texts of brochures were manually done before the actual text analysis.

Before I turn to the next section, I introduce how candidates from the same party differently present their campaign brochures differently depending on their constituency conditions. The following examples in Figure 18 and Figure 19 are about two candidates from the conservative Saenuri Party and both figures capture two pages (out of 12 pages) of their brochures. Mr. Joo Daejoon in Figure 18 ran for one of the least developed areas in Korea, Gwangmyung district. Mr. Joo's rival was a Democratic Party's incumbent who won several times with a wide range of welfare-related and pro-poor redistributive policies. Reflecting the poor voters' demand for economic development in Gwangmyung district, Mr. Joo also promised that he would work to attract the central budget to his district in order to build a metro station which will boost the local economy. Mr. Joo further emphasized how the district is underdeveloped and financially dependent on the central government.

On the other hand, Ms. Lee Hyehoon in Figure 19, who is another conservative Saenuri candidate, ran for one of the richest districts in Korea and became the party leader after winning the election. Because the majority of her district's voters are relatively rich, Ms. Lee highlighted her efforts to make the Comprehensive Property Tax Law unconstitutional, returning the already collected property tax to her voters. She also emphasized through her brochure that she is experienced with both national and local economy.



Figure 18: The Campaign Brochure of Joo

Candidate Dr. Joo Daejoon (Gwangmyung) "Metro station for Gwangmyung!"

"The current Gwangmyung has no growth momentum for the community's selfsufficiency, the financial independence of the district hits record low." Figure 19: The Campaign Brochure of Lee



Candidate Dr. Lee Hyehoon (Seocho)

"I am the most reliable candidate for the economy of Seocho and Korea." "By amending the Comprehensive Property Tax Law, which is found unconstitutional, I returned 1,000 billion won to Seocho!"

Figure 20: Campaign Brochures of Two Candidates from the Conservative Saenuri Party



(a) Candidate Joo Daejoon

(b) Candidate Lee Hyehoon

Note: Ten most frequent words of the two candidates (count numbers in parenthesis): **Candidate Joo** - guard (18), cyber (13), Soha (a name of town)(13), development (12), security (12), system (9), nation (8), city (8), technology (7), research (7). **Candidate Lee** - Bangbae (a name of town) (8), economy (7), Banpo (a name of town) (7), culture (6), issue (5), people (5), well-versed in economy (4), high school (4), persuasion (4), success (4)

I further illustrate in Figure 20 the most frequently used words in their entire brochures.
The word clouds show that Ms. Lee (on the right) uses words related to general economy and the importance of preserving the district's culture. On the other hand, Mr. Joo (on the left) uses words such as development to appeal that he could attract new businesses. He also mentioned a lot about redevelopment, building, installing, subway station, and etc.

It is also interesting to see how they differ in using images in their campaign brochures. Mr. Joo, who worked as a security officer in the President Security Guard Team for 30 years, emphasized he served five different presidents including those of the left party because his district is supportive of the left party presidential candidate. In contrast, Ms. Lee used her photo with Hilary Clinton to emphasize her support for the alliance between Korea and the US, which is also supported by conservative voters.

In summary, candidates from the same party may differ in their campaign strategies. Given the freedom to deliver policy promises tailored to their constituency, they can emphasize issues or topics that would increase the chance of winning elections taking into account what is important to their own voters, rather than simply copying the party manifesto. Furthermore, if a specific issue is salient to voters, candidates of opposing parties running in the same district would converge on each other, targeting the same voters by employing similar strategies regarding such an issue.

5.3 The 2016 Korean General Election

The 2016 General Election took place on April 13th for the 20th Korea National Assembly (KNA) in the midterm of President Park Geun-hye of the ruling conservative Saenuri Party. While the number of the total seats was maintained at 300, electing 253 (84%) from singlemember districts and 47 (16%) from closed party lists through proportional representation, controversial redistricting and changes in the opposition made the election unpredictable. Redistricting that merged districts in rural area into neighboring large cities could weaken the support base for the conservative Saenuri party while the dissolution of the Unified Progressive Party, a far left party, could cause the shift of its supporters to the Democratic Party.⁵

In 2016, President Park was losing her popularity because of the poor economic performance for two years in office, allowing the opposite left Democratic Party to become a majority in the midterm. Nevertheless, the Democratic Party won the majority by only 1 seat: it took 123 seats while the Saenuri Party won 122 seats. In the meantime, a traditional two-party legislature of the KNA experienced a change as a new central party, the People's Party, emerged in the 2016 Election winning about 10 percent of the seats. This new party's members were from the two major parties, criticizing them to be irresponsible for the increasing polarization of KNA and thus targeting voters in the middle.

Kang (2016) describes the election campaigning for the 20th KNA as a "no-issue election" because the election lacked any major issues that would severely divide the two parties (Kang, 2016, p.111). Nevertheless, party manifestos of the major two parties reveal their traditionally different approaches to economic policies and national security issues. For example, the conservative Saenuri Party, trying to boost the economy, promised a more flexible labor market favoring the large corporate. In contrast, the Democratic Party pledged to promote supportive system for small business owners, to increase the minimum wage and to expand the benefit of the national pension. Security issue such as policies regarding North Korea was not a major issue for the Saenuri Party in 2016 while the Democratic Party supported a friendly relationship with the North.

In the meantime, it is important to note that the 2016 Election was the first election when voters over age 60 exceeded other generational groups according to the National Election Commission data. Also, the entire voting-eligible population is 80 percent of the total population, showing that Korean society has aged, and that the birth rate decreased to the world's lowest level. In fact, baby boomers in Korea who were born in the post-Korean war era (between 1955 and 1963) and who also experienced the 1997 financial crisis in their middle age reached retirement age around 2016. So these baby boomers who became older without enough financial safe net and of who retired with assets like such as houses have become a critical voters for both parties. For the former, parties had to appeal with increased pension

⁵When I discuss these two Korean major parties, I interchangeably use the right party with the conservative Saenuri Party and the left party with the Democratic Party.

for the senior voters, and for the later, who want to use their asset for their living after retirement, parties had to provide reasonable taxation plan. The Saenuri Party promised to supply more senior residences whereas the Democratic Party suggested to provide the basic income of about \$250 for all senior citizens over the age of 65 in the bottom 70th percentile of income distribution. On the election day, people over 65 showed up at the polls far more than any other age group, 70.6% over 65 turned out whereas only about 49% among 20s and 30s turned out at the polls.

Under these circumstances in which the two major parties did not have critical issues that can strengthen the party support but remained only with traditional stances on welfare and security issues, candidates had freedom to develop their campaign based on their district conditions including demographic characteristics of their district. The 2016 election was also characterized by declined regionalism, that had been deep-rooted in the Korean politics over the past decades (Herald Economy, 2016), giving candidates more incentives to adjust their campaign to challenge in the districts in which their parties are not traditionally strong. For example, Ms. Jeon Hyun-hee from the Democratic Party was elected in one of the rich Gangnam area's districts as she was focusing on the voters who felt relative deprivation. Mr. Lee Jeong-hyun of the conservative Saenuri was elected in the Democratic dominated Honam region's district for the first time by successfully advertising his ability to bring more national funds to the district.

5.4 Research Design & Analysis

To test the hypothesis that the higher wealth inequality of a district, the less gap in the promises on particularistic provisions by the two candidates, I build an original dataset on candidates' promises revealed in their campaign brochures using a text-as data approach. Specifically, I use the Structural Topic Modeling, a type of unsupervised machine learning, which will be discussed in the following section. Focusing the 2016 General Election, I collected the campaign brochures of candidates who ran for seats that are elected through single member district plurality system (250 seats).

I will use the gap between the word counts of candidates' promises on particularistic goods in later regression analysis, which will be matched with the 2016 housing price inequality data that I discussed in Chapter 3. The unit of analysis is thus the electoral district.

Because my data for housing prices are available only for 199 districts, I ended up using brochures of 398 candidates of the major two parties. To my best knowledge, this is the first study using housing prices distribution and election campaign brochures, contributing to the literature on the study of relationship between economic inequality and candidates' responsiveness during campaigns.

5.4.1 The Structural Topic Modeling

Before selecting the words that would be considered promising targeted or particularized benefits and constituency service for the final analysis, I explore nearly 400 campaign brochures by estimating the Structural Topic Model (STM). Although I am interested in the words that are used by candidates to promise particularistic and targeted benefits to improve welfare of their voters, it is useful to explore the campaign documents to understand how parties and candidates could be different or similar across diverse campaign issues or topics.

The STM is a variant of Topic Modeling. Topic modeling is a sort of unsupervised machine learning that allows analyzing a large number of documents while keeping statistical information to uncover latent "topics" that appear in a set of documents. Unlike the bag-of-words (BOW) model for text analysis that simply allows counting how many times different words occur in different documents, Topic Modeling helps classify or summarize a collection of documents according to latent topics (Blei, Ng, and Jordan, 2003). Figure 21 illustrates how the topic modeling is used to analyze a collection of documents. As an image shown on the right in Figure 21, documents can be classified according latent topics, such as "welfare" and "security," uncovered from the Topic Modeling method, which in turn allows me to focus on the words specifically related to these topics.

Figure 21: Topic Modeling



Bag of words

With latent variables

The STM further classifies texts (documents) into a given number of categories based on structural information of the texts (Roberts et al., 2014). In the case of this chapter, for example, the STM method considers structural information such as party membership of each candidate to examine whether this structural difference affects the appearance of latent topics in each text (brochure). This method allows me to select the most relevant words to count for the final regression model.

In following, I first describe text-preprocessing, model estimation, and the result of estimation for the STM and then present regression results with welfare-related words as the dependent variable.

Many scholars are increasingly using the STM (e.g. Mildenberger and Tingley, 2019; Jo and Chang, 2020; Kim, 2018, etc.) developed by Roberts et al. (2014) because it allows us to estimate the proportion of certain topics according to a document-level covariate (or prevalence) in addition to estimating topics from a large set of documents similar to other topic modeling approaches. A document-level covariate can be variables of information for each document. In the case of this chapter, I can use this advantage because candidates' campaign brochures may be structured fundamentally reflecting their party affiliation and party's positions on policy issues by utilizing party information as a prevalence. For estimating the STM, I used R package **stm** developed by Roberts et al. (2014).

Before I embarked on estimating the STM, I pre-processed texts from brochures. Because the Korean language has different structures than English, I used "KoNLP", a natural language processing package for the Korean language package in R. Also, considering that Korean texts used in promotion, advertisement, or campaigns tend to use nouns to make the documents concise and that they mostly end with nouns, I have extracted nouns between two and five syllables to estimate the STM. I also removed words that appear frequently but do not bear importance for the analysis to avoid my texts being classified based on those words such as *National Assembly, election, Democratic Party, Grand National Party, Seoul, Korea* etc. I also excluded the names of candidates and districts. This is because I observed many candidates who repeatedly wrote their names and district names to simply advertise their name or emphasize their respect and love for the district without carrying meaningful importance for my analysis. After finishing pre-processing my texts from brochures, I constructed a document-term matrix for the STM.

As election campaigns begin, parties provide the public with its main policy agendas and positions in their party manifestos. In the case of the two major parties in Korea, candidates generally follow the parties' policy proposals and positions. Nevertheless, candidates are free to organize and adjust the specific contents such as wording and images in their campaign documents. In the 2016 election, both the conservative Saenuri Party and the progressive Democratic Party organized their policy pledges around 7 umbrella agendas. The Saenuri's agendas include 1) growth based on job creation, 2) joy of working together, 3) happiness based on housing stability, 4) happiness index 100%, 5) Korea as the center of the change for the future, 6) power of principles and rules, and 7) regional development for well-being for all. The agendas of the DP were 1) creation of good jobs and ensuring the people's livelihoods, 2) achieving economic democratization through coexistence and cooperation, 3) Korean style welfare state through social integration, 4) sustainable development and fueling the nation's future growth engine, 5) balanced national development, 6) peaceful Korean Peninsula and a safe society, and 7) guarantee of human rights and recovery of democracy. While it seems that main agendas and topics for two parties are similar, their specific approaches and plans are different. For example, to create quality jobs, the Saenuri focused on businesses returning from abroad by promising them to decrease taxes, which in turn may create more jobs. In contrast, the Democratic Party's main strategy was to increase the number of jobs in public sectors.

Considering the parties' campaign manifestos centered around 7 umbrella agendas discussed so far, I could have selected 7 topics when estimating the STM. However, because there are several sub-categories under each agenda and also because I assume that the importance of each agenda (topic) could vary across candidates, I proceeded with preliminary diagnostics using the R's **stm** package in order to obtain the proper number of topics, which considers how the exclusivity of each topic is based on frequency and how well the topic models describe the entire set of brochures, before running any structural topic model. I discuss the process of choosing the final number of topic, 8, shown in Figure 34 in Appendix A.1 in more detail.



Figure 22: Words with Highest Probabilities for 8 Topics

I finally present the titles of 8 topics in Figure 22 along with words with highest probabilities to appear in each topic, which will be the base for the analysis in the next section to examine the gap between candidates' use of welfare-related words. I put the translation in the parentheses. Not all of the eight topics can be easily titled since many words with highest probabilities seem to have a great degree of overlapping through most topics. Also it is too general to infer an appropriate title for the topics. This could be because candidates can title each page or section of their campaign brochures following the same title of the party manifestos, and adjust specific contents under the titles based on their district characteristics. Thus, after choosing 8 topics, I also referred to the words that belong to each topic in more detail which is presented in Figure 35 in Appendix in order to title each topic as in Figure 22. The final eight topics are 1) science & renovation, 2) welfare, 3) rural infrastructure, 4) information about candidates, 5) rural development & rural economy, 6) macro-economy & inequality, 7) local redevelopment, and 8) local service.

As shown in Figure 22, the topic most frequently discussed by all candidates is local (re)development (Topic 7), while least often covered topic turned out to be science and technology renovation (Topic 1). In general, most of the topics and words with highest probabilities concern economic issues and local constituency services.

Before choosing words to perform an analysis on the effect of inequality on the differences in welfare-related words among candidates of the opposing party, it will be worthwhile to examine whether these topics are covered differently by party. Figure 23 demonstrates the difference in the share of topics between the Democratic Party (DP) and the conservative Saenuri Party (GNP).

Figure 23 illustrates that four out of eight topics (2,3,4 and 8) I estimated are not statistically different across the two parties. On the other hand, more brochures of the DP covered on macro-economy and inequality (Topic 6) than Saenuri Party (GNP) while Saenuri Party (GNP) covered more on the topic on science and renovation (Topic 1), rural development and economy (Topic 5) and Local (re)development than the DP did and these differences between the two parties are statistically significant. Although it is difficult to distinguish the characteristics just by topic labels, a further look at the words for each topic reveal that "macro-economy & inequality" (Topic 6) report words such as inequality, minimum wage, debt, temporary employees, unemployment, middle class etc. "Local (re)development" (Topic 7) reports words such as improving local tourism and building parks and cultural centers, etc. In sum, it appears that although members of the two parties altogether deliver economic topics as their primary policy agendas as seen in Figure 23, specific policies, whether it is about inequality or regional development, could differ across candidates' partisanship. Figure 23: Difference in Topic Proportions- Conservative Party (GNP) (-) vs. Democratic Party (DP) (+)



Difference in Topic Proportions: GNP vs DP

Note: GNP indicates the Saenuri Party and DP is the Democratic Party. Lines indicate the width of 95% confidence interval for the difference between the two parties. For example, the party difference in the proportion for Topic 6 in the campaign brochures (of entire party members) is statistically significant, while the DP has more proportion on Topic 6.

5.4.2 Different Rhetoric Strategies

In the previous section, I showed that the two parties are not different in their coverage on the issue of welfare while they differ on the issues related macro-economy and inequality and local issues in terms of topic proportion in the 2016 campaign brochures using the structural topic modeling approach. Considering the issue of welfare has become an important and common topic for different types of parties in most capitalist economies (Iversen, 2005), this may not be surprising. Rather, what matters is how parties compete over the welfare state but with different strategic focus on specific welfare state issues (Green-Pedersen and Jensen, 2019). Indeed, both the conservative Saenuri Party and the progressive Democratic Party marked welfare as the main policy agenda in the 2016 Election.





Note: On the X axis, GNP indicates the Saenuri Party and DP is the Democratic Party. Y axis represents the number of the words related to welfare and inequality such as welfare (복지), low income (저소득층), redistribution (분배), and income polarization (임금불평등)

Meanwhile, in a society experiencing increasing levels of inequality, welfare issues and inequality-related policies are important, especially for the leftist parties because they seem to be good at handling these issues (Tavits and Potter, 2015). However, this does not mean that rightist parties overlook welfare policies and inequality issues, as I argued before. As Tavits and Potter (2015) contended, right-wing parties can strategically focus on other issues because they do not want to compete over welfare and inequality issues that they do not own. However, as I argued earlier for the district-level, candidates facing constituents of an unequal district perhaps have to be distinct from their party colleagues' overall strategies.

In Figure 24, I further illustrate how different the two parties are by simply counting the number of words that are most frequently used on the issues of welfare and inequality, such as redistribution, income polarization, welfare, and low income (class). Similar to what is seen in the structural topic model earlier, the number of word "welfare" appeared was similar among the two parties. However, words such as "redistribution" and "income polarization," that are more related to inequality and that may sound attacking the affluent voters who tend to support the conservative party, are not used by the conservative Saenuri Party as much as the progressive Democratic Party. To appeal to the poor voters, the Saenuri Party members talked more about policies for "low income" when necessary.

Nevertheless, this does not necessarily mean that all candidates followed the overall tendency of their parties in talking about these issues in terms of the number of words used as well as how they are used those words. For example, as seen in Figure 24, "redistribution" and "income polarization" are not often used by the conservative party even though the country has seen increased income polarization and more demand for redistribution. However, candidate Kwon Youngse of the Saenuri Party running in Youngdeungpo 2nd district, which is known for numerous poor voters, stated about income polarization unlike many other Saenuri Party candidates. His rival, Shin Kyungmin of the Democratic Party, used this word frequently too, as a way of attacking the President Park for increasing income polarization.

Moreover, a further look at the campaign brochures allow us how they use the topic of welfare differently in the same district. For example, the two candidates for Cheonan city 1st district, the Saenuri Party's Park Chanwoo and the DP's Han Taesun, both emphasized the importance of welfare and welfare-related policies for their highly unequal district. Still, while conservative candidate Park talked about "productive welfare," "establishing sustainable welfare system," improving policies for "welfare blind spots," Han's statement about welfare is more populist, "establish welfare policies that include free school lunches, free daycare, free medical service, half college tuition etc." Han's Democratic Party were advocating universal welfare policy.

At the candidate-level study, Sides (2006) showed candidates emphasize issues that they are perceived as good at handling to win elections, and in doing so, they often trespass issues owned by her party. In addition to this strategy, rhetoric and wordings used in some campaign brochures reveal that candidates can also talk about the same issue, without trespassing it but talking about the issue differently. This will also allow the candidates not to overlook the issues salient in their own district but that may not be owned by their party or may not lie in the parties' interest. If a right party candidate runs in a highly unequal district, she will not want to avoid mentioning inequality-related issues which will risk her and could state the issues using different words as discussed in the case of Cheonan city 1st district's Park and Han. This supports my argument that even candidates of the conservative party can target the poor voters in different ways without hurting their party's issue ownership nor central ideology.

In addition to talking differently to appeal to the majority voters as described so far, candidates can also appeal to the voters in unequal districts by promising a wide range of constituency services without hurting the rightest party name, which will be examined in the following analysis.

5.4.3 Variables

5.4.3.1 Measuring the Dependent Variable: Candidates Convergence and Divergence

For the main dependent variable to test the hypothesis that the higher wealth inequality of a district, the less gap in the promises on particularistic provisions by the two candidates, I extracted the frequency of words used to promise particularistic benefits based on the STM estimates previously introduced.

More specifically, my focus is on the words that candidates used to *promise* to provide targeted benefits. For example, candidates can state "I will <u>build</u> a new park!" or "I will <u>construct</u> a new metro station!" to attract voters. In these examples, I focus on the underlined

verbs, <u>build</u> or <u>construct</u>, rather than park or station. I believe this approach is more useful than commonly used methods that count the targeted benefits such as train station or new subway etc. (e.g. Grimmer, 2013) because it shows the willingness and perhaps also the capacity of candidates to provide those goods. Simply counting the targeted benefits may not reflect the candidates' appeal to voters. Rather, they could just discuss targeted benefits, without revealing their actions with regard to those benefits. Therefore, when candidates promise to <u>build</u> a train station, to <u>develop</u> a new subway line, to <u>attract</u> an international event, and to <u>construct</u> new facilities, etc., and I use <u>build</u>, <u>develop</u>, <u>attract</u>, <u>construct</u> to count the frequency of promising words and then calculate the dependent variable, the gap between the number of promising words among the two candidates.

The final list of words used is in Figure 13 in Appendix. As I examine how the levels of inequality affect the gap in promises between the two candidates of a district, the dependent variable is the gap in the amount of promising words.

Although I admit that the direction of the difference (i.e. whether a Democrat used more promise words or not) could be important, I focus on whether the two parties' candidates are different or not in this chapter. Future research could address the direction to examine *how* they are different.

5.4.3.2 The Independent Variable: Housing Price Inequality in 2016

For the main independent variable I use the Gini-coefficient which is a measure of statistical dispersion of income or wealth of a group of people. I calculated the Gini-coefficient of housing prices distribution for each congressional district. A detailed discussion about the data is discussed in Chapter 3. As the general election takes place in mid-April, I used housing price registered in March in 2016 to calculate the Gini-coefficient of housing price inequality.

The data of 2016 include 6.9 million housing prices, covering nearly one-third of households. However, as the raw data (Figure 9) provides a glimpse of my house price data) are not organized by congressional electoral district, I reorganized the price data matching with the congressional electoral district. In addition, often, the raw price data contained the name of administrative units in unofficial names. In this case, I checked manually to match them with the official name in the electoral district list. Then I calculated two measures of inequality by district - the Gini-coefficient and the P90/P10 ratio - which are the main independent variable.

5.4.3.3 Control Variables

I include several control variables at the district-level, which is the unit of analysis, that might affect the competition and the variation in strategies of candidates in the analysis. First, vote margin is controlled because the research has shown that strong competitiveness influence candidates campaign tactics (e.g. Walter, van der Brug, and van Praag, 2014). Buttice and Milazzo (2011) found in the British general election that levels of competition at the candidate-level is associated with how candidates' policies are contrasted. They show that highly competitive election makes policies of two candidates more similar. Thus I expect that high competition will make two candidates more similar to one another. The data for vote margin are from the Korean National Election Commission (NEC). I expect that the higher the gap between two candidates' vote shares, the more the candidates to be similar to the opponent as the losing one will try to be alike the winning one. Also, the number of eligible voters is included because the greater the number of voters means the more chance to attract to a candidate by having similar campaigns (Iaryczower and Mattozzi, 2013).

In addition, certain unobserved regional characteristics could influence the candidates, so to account for this, I present regional dummy variables, TK (Taegu-Kyeoungbuk region) and Honam in all analyses to account for concerns presented in past studies of regionalism in Korea (e.g. Choi, 2002). For TK Region variable, I coded 1 if a district is in TK region and 0 otherwise. For Honam region variable, I coded 1 if a district is in Honam region and 0 if it is elsewhere. I also include the gap in the district's support for two presidential candidates in the 2012 Presidential Election since if the ideology of district equally supportive toward left or right, general election candidates will also behave similar to one another. Research has shown that direct measures of the ideology of congressional districts based on opinion surveys are generally very highly correlated with presidential votes (Clinton, 2006). Finally, although the two major parties dominate Korean politics in general, there are some niche parties and also small central party whose candidates sometimes run in some districts. Thus I include the number of candidates, expecting the strategies to be more similar when there are more candidates. I also include mean house price of all constituencies for each term in order to control for economic influence that might affect the voters and politicians (e.g. Lewis-Beck and Stegmaier, 2000). Summary statistics are presented in Table 14 in Appendix.

5.4.4 Regression Results

Table 8 presents the results of OLS (Ordinary Least Squares) analysis to examine the effect of district-level inequality in housing price distribution on the similarity in candidates' campaign, which is measured as the gap in the number of promise words. As explained in the earlier section, these promise words are based on the words with 100 highest probabilities from the estimated Structural Topic Models introduced in the earlier section. To be sure, the gap is an absolute value of the difference between the two candidates' amount of words used for their promises.

	(1)	(2)	(3)	(4)
	Promise Gap	Promise Gap	Promise Gap	Promise Gap
Gini	-109.093 ⁺ (-1.71)			
$Gini^2$		-257.186^+ (-1.75)		
P90/P10			-8.742* (-2.22)	
$(P90/P10)^2$				-1.446^{*} (-2.41)
No. of Candidates	-1.514 (-0.77)	-1.516 (-0.77)	-1.831 (-0.92)	-1.921 (-0.96)
Vote Margin	-49.074 (-1.21)	-49.119 (-1.21)	-46.198 (-1.16)	-44.991 (-1.14)
Ideology Gap	$2.046 \\ (0.08)$	$1.983 \\ (0.08)$	$1.963 \\ (0.08)$	$0.933 \\ (0.04)$
No. of Voters	-0.000 (-0.13)	-0.000 (-0.15)	-0.000 (-0.20)	-0.000 (-0.23)
Mean Price	-0.000 (-0.69)	-0.000 (-0.69)	-0.000 (-0.91)	-0.000 (-0.91)
TK region	-8.909 (-1.34)	-9.083 (-1.36)	-9.126 (-1.33)	-9.047 (-1.32)
Honam region	35.210^{*} (2.24)	35.924^{*} (2.27)	36.945^{*} (2.30)	38.015^{*} (2.36)
Constant	75.000^{***} (3.36)	$64.198^{***} \\ (3.38)$	$79.097^{***} \ (3.63)$	67.399^{***} (3.60)
$\frac{\text{Observations}}{R^2}$	199 0.09	199 0.09	199 0.10	$\begin{array}{c} 199\\ 0.10\end{array}$

Table 8: The Effects of Housing Price Inequality on Candidates Campaign Convergence

 $t\ {\rm statistics}\ {\rm in}\ {\rm parentheses}$

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

I hypothesized that both candidates of the left and right competing in a more unequal district will reveal more similar campaign strategies, here in terms of the number of promise words. They will focus on policy promises and constituency service promises that may need budgets (or any material support) allocated by the central government because issues related to inequality will be salient in this district.

To test the Hypothesis 4a (Chapter 2.5.2), I estimate four models with different measures of inequality of housing prices distribution at the district-level. While Model 1 employs the Gini-coefficient of inequality and its squared value in Model 2, the ratio of the 10% of people with highest income to that of the lowest 10% of incomes is used in Model 3 and its squared value in Model 4. Squared values are used because one can assume that the effect of inequality on the candidates' similarity may not be linear. Throughout all models in Table 8, the results are statistically significant, supporting my hypothesis that higher levels of housing price inequality leads candidates of the two different parties to run similar campaign strategies, appealing to voters by talking about promises to a similar degree. Specifically, for example, I find that when a district's housing price inequality measured by the Gini-coefficient increases by 0.1, the number of promising words gap between the two candidates decreases by about 10 words (Model 1). Considering that candidates should use the limited number of pages for their brochures, which is 12 pages maximum, including front and back covers and necessary photos and background information, they would need to effectively deliver their messages and policy proposals using promise words if the district is unequal and voters are concerned about what candidates can do about inequality.

Additionally, I run negative binomial regressions for all four models considering that my dependent variable is count variables, somewhat over-dispersed as seen in the Figure 25. Table 9 presents the results that hold even with the negative binomial regressions.

Figure 25: Count of Promise Words Gap



	(1)	(2)	(3)	(4)
	Promise Gap	Promise Gap	Promise Gap	Promise Gap
Promise Gap				
Gini	-2.333^{+}			
	(-1.65)			
$Gini^2$		-5.609^{+}		
		(-1.65)		
P90/P10			-0.212*	
1			(-2.25)	
$(P90/P10)^2$				-0.036*
(1 00/1 10)				(-2.36)
No. of Candidates	-0.032	-0.031	-0.042	-0.043
	(-0.67)	(-0.65)	(-0.91)	(-0.95)
Vote Margin	_1 151	-1 155	-1 132+	-1 099
vote margin	(-1.61)	(-1.62)	(-1.67)	(-1.64)
Ideology Cap	0.520	0.515	0.470	0.481
Ideology Gap	(-0.76)	(-0.75)	(-0.70)	(-0.72)
N. f. V.	0.000	0.000	0.000	0.000
No. of voters	-0.000	-0.000	-0.000	-0.000
λſ	(-0.18)	(-0.80)	(-0.85)	(-0.85)
Mean	-0.000	-0.000	-0.000	-0.000
	(-0.91)	(-0.90)	(-1.08)	(-1.10)
TK region	-0.337	-0.341	-0.343	-0.344
	(-1.48)	(-1.50)	(-1.50)	(-1.51)
Honam region	1.059^{*}	1.070^{*}	1.068^{*}	1.079^{*}
	(2.21)	(2.24)	(2.26)	(2.29)
Constant	4.767^{***}	4.541***	4.924^{***}	4.644^{***}
	(9.63)	(10.34)	(9.97)	(10.70)
/				
lnalpha	-0.223*	-0.224^{*}	-0.234^{*}	-0.236*
	(-2.29)	(-2.30)	(-2.42)	(-2.44)
Observations R^2	199	199	199	199

Table 9: Negative Binomial Regression Models

t statistics in parentheses

^+ $p < 0.1, \ ^* \ p < 0.05, \ ^{**} \ p < 0.01, \ ^{***} \ p < 0.001$

Next, for Hypothesis 4b (Chapter 2.5.2), I consider an interaction between the main independent variable for inequality and three different levels of district-median-price (low,

medium, or high). I categorized into three price levels, coding 1 (low) if the district-medianprice is lower than the price of nation's 25th percentile, 2 (medium) if the district-medianprice is between 25th percentile and 75th percentile, and 3 (high) if the district-median-price is above the price of nation's 75th percentile. Out of 199 districts, 23.5% districts fall into 1, 62% into 2, and 14.5% into the category of price level 3. The distribution is shown in Figure 26.





Note: Levels of the Gini-coefficient measured with housing prices are on the X axis and Y axis represents the number of districts that for each price level (High - Low - Medium).

	(1) Promise Gap	(2) Promise Gap	(3) Promise Gap	(4) Promise Gap
Gini	-320.786** (-2.81)			
$Gini^2$		-659.548^{**} (-2.61)		
P90/P10			-17.498^{**} (-2.74)	
$(P90/P10)^2$				-2.430^{*} (-2.59)
Price Level (Medium)	-59.679^+ (-1.81)	-28.637 (-1.50)	-40.257 (-1.47)	-17.228 (-1.11)
Price Level (High)	-82.796 ⁺ (-1.91)	-44.014^+ (-1.78)	-60.298 (-1.61)	-29.613 (-1.41)
Price Level (Medium) \times Gini	245.378^+ (1.77)			
Price Level (High) \times Gini	339.592^+ (1.70)			
Price Level (Medium) $\times Gini^2$		471.778 (1.48)		
Price Level (High) $\times Gini^2$		747.720 (1.60)		
Price Level (Medium) \times P90/P10		. ,	11.865 (1.42)	
Price Level (High) \times P90/P10			18.288 (1.37)	
Price Level (Medium) × $(P90/P10)^2$				1.374 (1.06)
Price Level (High) $\times (P90/P10)^2$				2.739 (1.21)
No. of Candidates	-0.772 (-0.31)	-0.943 (-0.38)	-1.505 (-0.62)	-1.744 (-0.72)
Vote Margin	-55.181^+ (-1.85)	-53.776 ⁺ (-1.80)	-45.491 (-1.53)	-43.483 (-1.46)
Ideology Gap	1.223 (0.04)	0.513 (0.02)	-1.889 (-0.07)	-3.214 (-0.12)
No. of Voters	-0.000 (-0.03)	-0.000 (-0.04)	-0.000 (-0.16)	-0.000 (-0.17)
Relative Mean Price	0.761 (0.11)	0.488 (0.07)	0.425 (0.06)	0.017 (0.00)
TK region	-7.868 (-0.69)	-8.079 (-0.71)	-7.832 (-0.68)	-7.854 (-0.69)
Honam region	35.847^+ (1.87)	37.785^+ (1.97)	38.526^{*} (2.02)	40.047^{*} (2.09)
Constant	121.933^{***} (3.95)	84.391*** (3.88)	106.203^{***} (3.98)	77.135*** (3.84)
Observations R^2	199 0.111	199 0.106	199 0.110	199 0.107

Table 10: Interaction Models

 $\begin{array}{c} \hline & & & & & \\ \hline t \text{ statistics in parentheses} \\ ^+ p < 0.1, \ ^* p < 0.05, \ ^{**} p < 0.01, \ ^{***} p < 0.001 \end{array}$

In Table 10, I show the regression results using the interaction between the four measures of inequality and the three levels of district-median-price to test the Hypothesis 4b (Chapter 2.5.2) that the effect of housing price inequality on legislators' promises on particularistic provision during campaigns will be smaller when the district's price level is greater. Model 1 in Table 10 using the Gini-coefficient of inequality presents significant effect of interaction, although modestly at 0.1 level, and other models using different inequality measures turned out to be not significant for the interaction with price levels. To help interpretation, I plot the result of interaction in Figure 27 based on Model 1. We can observe that the effect of inequality depends on the median price level of a district, supporting my Hypothesis 4b. The graph shows that the gap in the promising words between two candidates decrease more sharply for the districts of low price, while the difference may increase in the districts of high price.



Figure 27: Predictive margins by price level

5.5 Conclusion

Understanding candidates' competition and their strategies are critical for democratic representation. Although the vast literature suggests that party polarization is linked to rising income inequality, it is puzzling because individual representatives need to appeal to a majority voters who are relatively poor in unequal district. To solve this puzzle, this chapter uses instead wealth inequality. Increased wealth inequality has been a critical topic in politics worldwide often associated with the rising polarization between parties. However, political scientists have focused mostly on income distribution to explain how unequal income distribution influences polarization and unequal responsiveness of representatives (McCarty, Poole, and Rosenthal, 2006; Bartels, 2008, etc.). Furthermore, due to the lack of data of wealth distribution at the district-level (candidate-level), our understanding of the impact of economic inequality is limited to income inequality. I build an original data set of districtlevel wealth inequality with housing prices by congressional district. To my best knowledge, this is the first study using the district-level wealth inequality, measured with housing price distribution to explain responsiveness of politicians, focusing on candidates.

This chapter also makes theoretical contributions by arguing that candidates from the opposing parties converge in campaign strategies when districts' wealth inequality is high as both need to appeal to relatively poor majority voters. I took advantage of campaign brochures to examine specific promises of each candidate and compared them across districts employing a text-as-data approach to test my argument. Modestly, but findings are consistent with my expectation that the more unequal a housing prices distribution of a district is, the more similar strategies will be presented by candidates during campaigns, measured by the gap in the number of words used to promise particularistic benefits. Candidates from highly unequal districts appeal to voters in a similar way, or converge to each other, contrary to the existing studies showing that parties diverge or polarize when inequality is high at national- or state-level. Interestingly, both parties' candidates present promises on specific benefits to their constituencies as much as the opposite candidate does in unequal district. Furthermore, text analysis based on the STM estimation also shows that even though different parties may have ideologically different stances on welfare-related policies,

candidates who are motivated for (re)election, can use other strategies without taking an ideological position or talking against their parties' owned issues, but only presenting promises on some goods. Understanding how candidates compete by reflecting their constituency's inequality is critical for democratic responsiveness under increasing inequality. Korea is just one example of increased housing price inequality and politicians of any ideological spectrum keep relying on many ways to gain personal votes. These dynamics I study in this chapter can be found in many countries (Ansell, 2019). Future research could benefit from examining micro-level data of wealth inequality to examine how it affects politicians' campaign strategies and responsiveness more broadly, for which text analysis could be useful.

Lastly, a more general takeaway is that we need to rethink some important existing perspectives on wealth inequality because wealth inequality may have more persisting and deeper effects on political outcomes than income inequality. For example, while the media continuously report that the top 1 percent of Americans enjoy 20 percent of the entire population's income, the top 1 percent of Americans hold 35 percent of all wealth and the top 10 percent takes up 76 percent of all wealth (Spross, 2017 Aug. 10). This could imply that some of the "middle-wealth" class could feel more left behind than those of the "middle-income" class on the income distribution which is less skewed than the wealth distribution. As Ansell (2019) pointed out, "labor market incomes alone do not fully specify individual's demands for social insurance and redistribution" (p.401). Accordingly, rising wealth inequality could reshape what voters demand for social policies and redistribution and then how politicians' exploit these for their welfare rhetoric in election campaigns. While the existing literature shows that inequality creates polarization, when the important portion of electorate is left behind in terms of wealth, candidates' campaign emphasis converge on the inequality-related issues. Yet the analysis in this chapter provides some insights that there are many rhetorical ways to avoid emphasizing issues owned by the left party as well as to avoid the conservative party's punishment for the right party members when inequality issue is salient.

6.0 Case Studies

Quantitative analysis in the previous chapters, one relying on the record of roll-call votes and the other one drawing on the campaign brochures using a text analysis approach, provide evidence regarding the effect of district wealth inequality on the representatives' responsiveness. In this chapter, I further explore what lies behind the relationship between the changes in housing price distribution and representatives' responsiveness in more detail.

How do changes in aggregate constituency preferences lead to changes in representatives' behavior? For example, will a representative become more conservative as most of their district becomes richer? Or will they become more progressive if their district becomes poorer? Although these questions are critical to understanding dynamic responsiveness - policy shifts responding to citizens' policy preferences - (e.g., Canes-Wrone, 2015; Caughey and Warshaw, 2018, etc.) and to unpacking a process of polarization or convergence, the previous chapters only dealt with rather static behavior under specific patterns of housing price inequality at a given time.

More importantly, this chapter will also explore why representatives care about wealth distribution. In the previous chapter on theory, I claim that wealth inequality is a more helpful measure to proxy for constituency preferences than commonly used income inequality because wealth inequality has a more persisting effect on political behavior. For example, different levels of wealth inequality, thus different levels of housing price distributions, could influence policy choices such as distributional welfare programs and property tax rates (Ansell, 2014; Adler and Ansell, 2019). In addition, I argued for the convenience of using wealth inequality data because income data which usually rely on surveys or tax reports are not easily available at micro-level (e.g., congressional district levels), making us difficult to infer the relationship between district-level income distribution and representatives' behavior.

Building on these arguments, I discuss how representatives respond to changes in housing price distribution in detail by examining two districts: Bundang 1st District (*Bundang-gu Gap*, Bundang 1 hereafter) and Dongjak 1st District (*Dongjak-gu Gap*, Dongjak 1 hereafter).

The case of Bundang 1 demonstrates how a representative becomes more conservative as the district becomes richer. On the other hand, Dongjak 1 illustrates a case in which a representative could become more progressive as the district becomes poorer.

There are several other reasons for choosing these two districts. First, the two cases show considerable variation in changes in wealth inequality levels and changes in politicians' ideology or policy preferences, attracting enormous attention from policymakers and the media. Secondly, I considered districts that reelected their incumbents in order to hold constant the legislators' ideology or any other unobserved characteristics that may affect the representatives' behavior. For Bundang 1, Mr. Koh from the conservative party (The Grand National Party) served three consecutive terms from 16th Assembly to 18th Assembly (2000-2012), and Mr. Jeon, a representative from the progressive Democratic party,¹ also served three terms in a row from 17th to 19th Assemblies (2004-2016), for Dongjak 1. Lastly, I also considered whether representatives changed their party. During the time period of my analysis, some representatives changed their party affiliation due to splits or merges among parties. I chose only those stayed with the same party (e.g. a major progressive party or a major conservative party), although parties changed their name.

To note, this chapter is not to suggest that housing price inequality and distribution is the only factor influencing the responsive behavior of legislators and candidates. Other explanatory variables such as partial and competitiveness of elections at the districtlevel will also be considered.

The remainder of this chapter is organized as follows: Section 5.1 discusses briefly why representatives care about changes in wealth distribution in their districts. Section 5.2 provides a case study of Bundang 1st District, illustrating a district that becomes richer. Section 5.3 explores Dongjak 1st District which represents a distribution that becomes relatively poorer. Section 5.4 concludes by discussing implications and limitations of the two case studies.

¹The name of the progressive party changed from Uri Party to United Democratic Party in 2008 and to Democratic United Party in 2011. I call this progressive major party democratic party or progressive party interchangeably.

6.1 District Wealth Distribution and Individual Representatives

While Budongsan (부동산) literally means "immovable property or asset" in Korean, housing prices fluctuate (increasing most of the time) so quickly that the country's housing market continues to move. Because the residential housing market is largely affected by the central government's tax policies and market regulations, people pay great attention to the government's policies to sell and buy houses fast, allowing real estate properties to work almost as cash. Even if real estate owners do not sell their houses, price changes could affect how much they could loan from banks using a home as collateral (such as a home equity loan) for investment in other profitable commodities such as stock. In addition, increased house values may encourage homeowners to refinance their mortgage at a lower rate, allowing them to enjoy more disposable income (Andersen and Leth-Petersen, 2020). Owning a home serves as 'private insurance' (Ansell, 2014) under economic downturns. Likewise, house value appreciation could also mean less financial stress for homeowners. Homeownership and the value of houses, therefore, are important for people's lives and political behavior.

In the context of Korea, studies have shown that Korean people tend to perceive their social status higher when they purchase a house or when their house values increase, indicating that homeownership and housing prices could be a socioeconomic variable to explain preferences for redistributive tax policies (Kim, 2021; Kang, 2012; Son, 2008).

In addition, as I previously discussed in the theory chapter, the country's level of income inequality is at the average level among the advanced countries. Nonetheless, the general public in Korea tends to consider the country highly unequal. It is also surprising that the income tax level is relatively lower than other OECD member countries. However, the property tax revenue ratio to GDP jumped to 3.3 percent of its GDP in 2018 to rank top three among OECD countries, following the UK and France, marking nearly 1.7 times higher than the OECD average of 1.9 percent. Therefore, the property tax burden could be an important factor affecting citizens' perception of inequality and influencing politicians' decisions on tax policies.

Historically, it was only around the mid-1980s after the rapid industrialization that property tax and the housing market control had become redistributive policy tools for the government even though a series of land reforms allowed people to own land and real estate properties after the Korean War. Although these policies were entirely at the hands of the president in the era of centralized industrialization, as the country's democracy consolidated and the National Assembly's legislative power grew, legislators became more influential in making policies related to housing market and property tax.

It should also be noted that, Korea's population growth and rapid urbanization led to the continued supply of housing across the country. Given that the Korean housing market has largely been fueled by urban renewal and redevelopment funded by the central government, which involve large scale constructions of new buildings after demolishing a part or entire neighborhood of old houses, the consequent change in housing prices have contributed to the transformation of electoral maps. Some candidates face various changes that could fundamentally shift the socioeconomic characteristics of their constituency and the number of district population often resulting in redistricting.

As I discussed earlier, the poverty rate in Korea is low, and so is income inequality. Nevertheless, this does not suggest that representatives face no demand for targeted constituency services. Economic inequality stemming from changed housing price distribution also make some citizens feel relative deprivation. As a result, figuring out constituency services that are targeted to the relatively poor citizens is an essential electoral strategy for representatives in the highly unequal district. For rich districts, on the other hand, representatives may not need to resort to specifically targeted benefits because rich areas, which are often newly developed, are often already equipped with diverse sources of community services (e.g., community parks, and public libraries), allowing the representative to focus on issues aligned with a broader party's agenda.

6.2 Case 1: Bundang 1st District

6.2.1 Background of Bundang

This section explores Bundang 1st district, which houses the Korean Silicon Valley (Pangyo) and is one of the richest districts in South Korea. Based on my argument in the theory chapter, we could expect that representatives from this rich area have larger incentives to cater this changing population, who are becoming richer, by suggesting more conservative policies.

Bundang 1 is located in Seonnam City which is also consisted of Bundang 2, Sujeong, and Jungwon districts, in the south of Seoul (see Figure 28). Along with these four general election districts of Seongnam City, Bundang 1 saw an increased inflow of rich population from the Southern part of Seoul's most wealthy district, Gangnam, adjacent to Bundang 1. Because Gangnam had been a major electoral base for the conservative party for several decades, these new population moved to Bundang tended to be conservative although they are highly educated and many of them work for high-tech and software industry. Unlike many Western societies that saw higher rates of leftist voters among the more educated (e.g., Van de Werfhorst and de Graaf, 2004), highly educated citizens in Korea tended to be more conservative. Son (2010) showed that, in rich areas including Gangnam District, highly educated citizens voted for the conservative party's candidates since 2002. Due to the population inflow, Bundang has experienced great house value appreciation over the past decades. Figure 28: Bundang District in Seongnam City



Note: The area in gray color represents Seoul. The area in dark navy color is Bundang.

Although today's Bundang is one of the wealthiest areas in Korea, it was mainly farmland until the early 1980s when the country started developing the region to tackle the overpopulation in the capital city of Seoul. Bundang were settled in the late 1980s as the city of Seongnam nearby the capital launched a suburban residential development plan by building 106,000 units of apartment for about 420,000 people on 1800 ha of land.². After the District was built, its housing prices remained relatively stable with an equal distribution throughout the late 1990s, because most of the units were the same size for family of four members, which was considered an ideal type of the middle class in Korea for a long time. This was also due to the Seongnam City's law which restricted buildings no higher than fifteen floors to protect the greenbelt area left undeveloped after the 1989s residential development project, making the residential buildings, especially condominiums, look similar. According to the National Statistics authority of Korea, the average housing price was lower than that of Seoul until the 1990s when the 13th President Roh Tae-woo (1988-1993)'s administration just started implementing a national development plan (Joongang Daily December 2018). Under the development plan, many high-rise luxury condos were built in Bundang 1 and the district

²Seongnam City Law 971,1989.6.20

successfully attracted numerous hi-tech businesses to the district. As a result, the average housing prices exceeded the Seoul's for the first time in 2002, and kept rising throughout the 2000s.

6.2.2 Redevelopment Project of the Bundang District

As the country recovered from the 2008 financial crisis, the central government and many municipalities launched new development plans to boost the economy. On November 14th, 2000, Seongnam City released a new redevelopment project to develop Bundang 1 as a Korean version of Silicon Valley (known as Pangyo Techno Valleys), a home to many startup and global technology companies. The City announced that it would provide financial assistance programs for qualified new start-up companies and small high-tech enterprises so that they could establish in the area quickly and help the area's economy. The City also decreased the corporate tax and other expenses (Choi, 2000). The government of the Gyeonggi Province (which contains Seongnam City) also supported infrastructure such as R&D centers. This Pangyo area in Bundang 1 eventually attracted new types of population, working in innovative start-ups of sectors such as bio or information technology. Seventy percent of information technology companies in Seongnam City are located in Bundang's Pangyo (Kim, 2000b). The City also built more metro lines and stations around these areas so that people could commute to the center of Seoul's rich area. As the City also invested in creating public parks and good quality public schools, people used to say "Bundang beneath cheondang" (meaning Bundang beneath heaven).



Figure 29: Changes in Housing Price Distribution in Bundang 1st District (2000-2016)

Alongside luxurious complex buildings that attracted rich residents, the neighborhood transformed into one of the fanciest areas, full of expensive restaurants and shops. This transformation of the district over a quite short period of time provides us an opportunity to examine the relationship between changing wealth and changing political ideologies and policy preferences. Figure 29 shows that how housing prices distribution of Bundang 1 changed between 2000 and 2016 based on my data. We observe that the distribution is slightly skewed rightward in the early 2000 whereas the distribution became more flat and

covers a wide range of housing prices. Even though the district had the inflow of highly educated young people, the increased property tax burden imposed on this area also played an important role to maintain the district conservative.

6.2.3 Rep. Heung-gil Koh, Grand National Party

Prior to starting his political career, Mr. Koh worked as a journalist and became the chief editor for a conservative newspaper, *The Joonang Daily*, which is one of the three of major daily papers in South Korea. Upon his retirement from journalism career, Mr. Koh was scouted by the conservative Grand National Party's Governor, Lee Hoi-chang, who served as the 26th Prime Minister (1993 -1994) and ran for presidential elections for three times as the conservative candidate (1997, 2002, 2007). Mr. Lee Hoi-chang nominated this former conservative journalist, Mr. Koh, for the Bundang District candidacy. Mr. Koh was first elected to the 16th Assembly in May 2000 and won two more terms, serving until 2012 except a few months at the end of the term as he was appointed to the Minister for Special Affairs by President Lee Myung-bak of the conservative party.

According to the W-NOMINATE scores I calculated in the previous chapter drawing on (Lee and Lee, 2015)'s data on roll-call votes, Mr. Koh's first dimension estimate was much more liberal than his party. Mr. Koh's W-NOMINATE estimate was 0.2 lower than 0.39, the mean of the estimates of all conservative party members. By his third term, however, he turned out to be more conservative than his party. His score was 0.89 higher than the party's mean, 0.69.³

In Chapter 4, I have examined how housing price inequality is associated with the level of convergence of the campaign strategy of two candidates. I argued that higher inequality of a district will incentivize candidates to converge, delivering similar campaign messages targeting the majority voters who are relatively poor. On the other hand, if a district's inequality is low, candidates may differ in their campaign messages. Pursuing this idea in this chapter, I further investigate Mr. Koh's campaign brochures for three elections as well

³I acknowledge the claim that W-NOMINATE scores are less appropriate for comparison between different terms than DW-NOMINATE scores. Yet, the W-NOMINATE estimate of a representative relative to his party's mean of the estimates within a term can be useful for this chapter.

as those of his competitors.⁴

Because Bundang became less unequal over time as seen in Figure 29, economic or welfare issues will tend to be less salient under a relatively low level of inequality, I expect that two candidates will not be motivated to target the median wealth voter in such a district and they will focus on party's positions (e.g. a conservative focuses on the rich and a progressive focuses on the poor).

As Korea was in two-party system during the time period of interest, Mr. Koh's main rivals for all three elections are the members of the Democratic Party (although the name of the Democratic Party have changed across three terms). Because it was only after the Public Official Election Act, which was reformed in August 2005, allowed candidates to publish 12page brochures, campaign brochures from 2000 and 2004 are not long and they contain little information about policy promise.⁵ Nevertheless, comparing the two candidates' campaign contexts in their brochure helps us understand how their tones and rhetoric changed.

I summarized the contents related to economic or welfare issues from the two candidates' campaign brochures in Table 11. Mr. Koh, who ran for the first time in 2000, did not include any policies related in his campaign brochures. It should be noted that in 2000 and 2004, the content of brochures was not comprehensive for most candidates. It is due mainly to the party politics that lacked programmatic policies until the early 2000s (Ka and Yoon, 2009; An, 2001), which in turn could not guide their candidates.

⁴Mr. Koh is not included in the campaign brochure analysis in Chapter 4 which deals with candidates for the 20th Assembly.

⁵Until 2004, brochures were restricted to 8 pages.

Table 11: Comparison of Campaigns on Economic Policies and Welfare Issues of the Two Candidates in Bundang 1st District

2000 Election for the 16th KNA				
Candidate	Mr. Koh Heung-gil (R)	Mr. Kang Bong-kyun (D)		
Vote Share	51.84 %	41.47 %		
Main Policy	None	-Make the district an autonomous municipality -Improve living conditions for elderly and poor citizens		
2004 Election for the 17th KNA				
Candidate	Mr. Koh Heung-gil (R)	Ms. Huh Unna (D)		
Vote Share	54.09 %	40.61 %		
Main Policy	-Make a better country by relieving tax burden	-Improve public education system -Remove private education burden -Improve and support public rental housing		
2008 Election for the 18th KNA				
Candidate	Mr. Koh Heung-gil (R)	Mr. Lee Jae-myung (D)		
Vote Share	64.73~%	33.24~%		
Main Policy	-Abolish the CRET (the comprehensive real estate taxes)	 -Adopt free infant care system -Expand workplace nursery facilities -Adopt government funding system for four major diseases -Reduce college tuition 		

The introduction of the Comprehensive Real Estate Taxes (Jonghap Budongsan Se, 종합 부동산세, CRET hereafter) was a top priority policy of President Roh Moo-hyun, who took office in May 2003. It fueled debate among policy-makers about the best property tax policy to redistribute the nation's wealth. With the introduction of the CRET that is collected by the central government, real estate owners were going to pay additional property tax on top of the existing property tax, which is administered at the regional government level. The CRET levied between 1% and 3% tax on homeowners who properties' value exceed
KRW 900 million (about US\$730,000 in 2022). The CRET went into effect in 2005. Due to severe opposition, the threshold was adjusted to KRW 600 million in 2006, and went down to $0.5\sim2.0\%$ under the new conservative and pro-market president Lee Myung-bak in 2009.

Table 11 shows Mr. Koh's strong and clear messages regarding the CRET in the 2008 election, in which he pledged to "abolish the CRET." Meanwhile, his tone was softer in 2004, stating that he would relieve the real estate tax burden. The contents of his brochures on the property tax policy reflected the conservative party's central agenda about the policy. This was possible due to his district's affluent voters who were concerned about the tax burden. Mr. Koh's campaign helped him crowd out his rivals, garnering increasingly more votes in the third election.

The residents of Bundang, whose house values sharply increased since the development of the new town in Seongnam City, had also organized a movement for the district to be an independent municipality (Kim, 2000*a*; Shindonga, 2006). According to a report in *Shindonga Monthly*, the pro-independence residents expressed discontent over the City's low budget allocation to the district even though the Bundang district contributed about 68 % of the City's revenue (Shindonga, 2006). In fact, almost 18 percent of the district's revenue goes to other districts in the City. Given that local governments' revenues mainly consist of the Property Tax (including the real estate transfer tax, but not the CRET) and the Income Tax, candidates had to appease the rich residents. Thus, Mr. Koh strongly supported the residents' movement to make the district an independent municipality from his first election in 2000 (Shindonga, 2006). Moreover, while serving as the party's chair for the Policy Committee, Mr. Koh agreed with the party chairperson Ah Sang Soo, who suggested to transform policies related to housing market and property tax to be tailored to each district or locality (Lim, 2010).

Among other policies, addressing the CRET was critical for Mr. Koh because his district Bundang had been the major target region of the CRET as the area benefited from increased wealth. Bundang residents who would be affected by increased property tax opposed the tax policy. According to my data, the mean value of houses in his district was KRW 270 million in 2000, rose to KRW 525 million in 2004 and to KRW 824 million in 2008 becoming one of the richest districts in the country. Consequently, Mr. Koh's most important policy agenda to address had been the CRET and to reduce related property taxes throughout his legislative career for 12 years. Due to his constituency that is richer than other districts, and because, as I argued, inequality was not salient there, he was able to deliver party's central economic policy such as relieving property tax burden in 2004 and abolishing the CRET in 2008.

Meanwhile, all his rivals for three elections appealed to the poor or marginalized voters, who are the main target of the Democratic Party. Bundang district is a rich area which had been deemed to be difficult for the left candidate to win. While inequality is not salient in Bundang, these rivals from the Democratic Party still could use elections to advertise their party's redistributive welfare policies, appealing to relatively poor voters, even if they are few, in need of financial assistance. For example, Mr. Kang running against Mr. Koh in 2000 appealed to improve living conditions for elderly and poor citizens. And Ms. Huh in 2004 specifically suggested policies about public housing and expensive private education issues by enhancing public education in the district.

In the 2008 election, after the conservative President Lee Myung-bak took office in February, Mr. Koh put forward a stronger message against the CRET, promising that he will abolish it. Mr. Lee of the Democratic Party, on the contrary, ran the election with generous welfare policies that are targeted to the poor voters such as creating free infant care system and providing nursery facilities in workplace, etc.

A politician's policy positions can also be revealed in the Annual Legislative Activity Report (*Euijeong hwaldong bogoseo*, 의정활동보고서). The National Election Commission (NEC)'s Public Official Election Act stipulates that both national and local legislators can distribute reports about their constituency activities without page limit except the campaign season, which is 90 days up to elections. These reports can also be posted online. Mr. Koh's Annual Reports from several years cover a wide range of activity. However, he mostly highlights his activity related to policies favoring the rich district voters. For example, in his 2006 Annual Report, Mr. Koh emphasized his efforts to ease the tax burden imposed by the CRET while he promised to lift Bundang from the list of "speculative areas," which was determined by the central government. He also pledged to attract more funds from the central government for the transport infrastructure linking the capital city Seoul to Pangyo Tech Valley in the 2008 report (Korean National Assembly, 2006, 2008). In 2010, he reported his activity advocating policies relieving property tax and interest rate and his support for the government's plan to redevelop some under-developed areas nearby Bundang. Investment in the area's infrastructure and redevelopment projects were expected to favor the rich people as these would increase the house values in Bundang area (Korean National Assembly, 2010).



Figure 30: Changes in the Vote Share and Housing Price in Bundang 1st District

As oppose to the large-N analysis in the previous chapter examining housing prices aggregated at Bundang 1, a more micro-level consideration can be useful. Figure 30 illustrates changes in Mr. Koh's vote share and housing prices with a smaller unit of administration level (*dong*). In panel (a) showing the change in vote share between 2000 and 2008, we observe

that Mr. Koh's vote share increased most in the middle area, which contains the Pangyo Tech Valley (gray areas are Bundang 2).⁶ Although panel (b) displaying changes in housing price suggests that the middle area did not see a highest level of price increase, it is because the middle areas are already most expensive areas over several years as seen in panel (c) and (d) which show the average housing prices at *dong* level in 2000 and 2008 respectively.

Based on these records, Mr. Koh had incentives to become more conservative than when he first became a congressman. By advocating the plan to abolish the CRET, Mr. Koh's vote share increased from his first election in 2000 that gained 51.8% to 54.08% in the 17th General Election in 2004, and to 64.73% in the 18th General Election in 2008.

Lastly using scores on the attitudes toward free-market capitalism published by the Korea Center for Free Enterprise (Center for Free Enterprise, 2008) for the year the 17th Assembly can also help us further identify that he became more conservative. Attitude scores are measured based on the bills during each assembly, focusing only on the bills that are related to the interest of private businesses such as Fair Trade Act, Corporate Tax Act, Labor Union Laws, Usury Laws, Free Trade Agreements, Special Act on the Development of Enterprise Cities etc. It also includes bills such as Inheritance Act for enterprises of small and medium size. The CFE examines how often the representatives voted for these bills in favor of free-market, and produce scores of attitudes toward free-market ranging from 0 (most strongly against market economy), 50 (neutral), and 100 (most strongly in favor of market economy). The average score of the members of the conservative Grand National Party was 50.8 (ranging from 27.8 to 70), while that of the Democratic Party was 36.7 (Center for Free Enterprise, 2008, p.19). The average of the entire 17th National Assembly members of all parties was 42.4. Mr. Koh's score turned out to be 50, having voted equal number of times for pro-market economy bills and for anti-market economic policy. However, in the beginning of hte next term, he became more pro-market economy, voting twice as often for the pro-market economy bills than for the anti-market economic bills. His pro-market attitude score in the first report on the 18th KNA was 66.7, while his party's average was 64.5 (ranging from 42.9) to 76.5) (Center for Free Enterprise, 2009).

⁶In panel (b),(c), and (d), areas in which data are not available are also presented in gray color.

6.3 Case 2: Dongjak 1st District

6.3.1 Background of Dongjak

This section examines Dongjak 1st District (Dongjak-gu Gap, Dongjak hereafter) located in the center of Seoul, just below the Han River which passes through the capital (see Figure 31). Dongjak-gu is one of the 25 administrative units (gu) of Seoul and consists of two congressional districts, Dongjak 1st District (Dongjak-gu Gap) and Dongjak 2nd District (Dongjak-gu Eul). It has been a transportation hub hosting the first train station in the country, which draw people of rural areas to the capital city during the sharp economic development of the 1960s and 1970s. However, due to large population inflows to Dongjak District and the quick urbanization process, the district's shantytowns had become known for abysmal living standards.





Note: The area in dark navy color is Dongjak

The District has been a home to the Korea's largest wholesale fish market, the Noryangjin Fish Market, since 1971. As this may indicate, the area did not develop into a more modern residential area like other districts such as Gangnam and Seocho that were developed during the 1980s led by the central government to renew old apartment buildings. Dongjak's local government had tried to be included in the new town projects funded by the central government throughout the 1990s, it had been not successful until 2004, when Dongjak finally got approval of redevelopment project. Even at this time, however, the project to revive the District could not proceed due to the opposition of those in poverty, mostly owners of tiny shops, who were afraid of losing their base. Dongjak is also famous for its low level of financial independence and no industrial facilities, and thus this environment led candidates to compete for a seat in the National Assembly with a slogan of regional development through a new town project (Kim, 2004).

6.3.2 Redevelopment Project in Dongjak District

As Dongjak District remained underdeveloped and infrastructures started deteriorating throughout the 1980s and 90s, Dongjak's poor citizens had called for redevelopment and the central government's investment in infrastructures. However, it was only around the early 2000s that Dongjak was included in the New Town Projects, which planned to tear down old residential buildings and replace them with high-rise condominiums to house a large population and boost the area's economy.

While many homeowners were happy about the idea of revitalizing the district after Dongjak was selected for the New Town Project, which resulted in increased house values, many poor residents were in fear of being displaced due to the demolition of homes and felt relative deprivation. In an interview, Mr. Lee Taegyo, who served as a leader of the National Alliance of Squatters and Evictees, stated that "We are not against redevelopment. It is good to have upgraded living conditions by improving the underdeveloped residential districts. But we are asking for a redevelopment policy that considers those who currently live there (Kim, 2003)." The major new town project of Dongjak ended up building only 4871 houses while the existing number of households was 11,871, forcing people who could not afford new homes to move to places in poor conditions in the area (Kim, 2004).

In 2006, a man of Dongjak committed suicide by leaping from the roof of a building, leaving a note "Apartment, you jump, and I jump, too," implying that he had been stressed about the soaring prices in some towns selected for the new town project (Song, 2006). This incident drew great attention nationwide and reflects that even though the average price of house values in the district increased because of the new town project, the feeling of relative deprivation among many voters in Dongjak grew larger.



Figure 32: Changes in Housing Price Distribution in Dongjak 1st District (2000-2016)

Figure 32 illustrates the change in the distribution of the housing prices of Dongjak 1 based on my dataset between 2000 and 2016. It is a positively skewed distribution of housing prices in 2000, which was before the launching of the new town project. In 2008 and through 2016, the district saw more widely ranged distributions in terms of house values. According

to my dataset, the Gini-coefficient of 0.186 in 2004 increased to 0.22 in 2008 while decreasing again to 0.19 in 2016.

6.3.3 Rep. Byung-heon Jeon from the Democratic Party

Like the previous case of Bundang 1st District, I also examine how housing price inequality is associated with the level of convergence of the campaign strategy of two candidates focusing on Dongjak 1st District. I hypothesized that two candidates of a district will be more likely to appeal to voters with similar strategies when their district is more unequal and there are more relatively poor voters. I also argued and showed that that both candidates, regardless of their party affiliation, will tend to appeal to relatively poor voters, by promising as much constituency service as possible.

The trend of increased inequality, especially between 2000 and 2008 as seen in Figure 32, was what shaped the election strategy of Mr. Jeon Byung-heon of the Democratic Party run in Dongjak 1st District. However, Mr. Jeon's running for the Dongjak 1st District came with a great surprise because the district had supported for a long time the conservative party's leader, Mr. Suh Chung-won, who served eight terms in the Korean National Assembly, including 20 years for the Dongjak 1.

Even though Mr. Jeon had to face a constituency that was an important electorate base for conservative parties for a long time, his political career had been successful. He built his political career mainly by serving as a policy advisor to President Kim Dae-jung, the first left president in Korea since 1998, and rose to become a deputy director in the Government Information Agency in 2002.

Based on his experience as a policy advisor to the left president, Mr. Jeon presented policy promises mainly targeted relatively poor voters. Table 12 presents how similar the campaign strategies between the two candidates had become throughout three elections in Dongjak 1. First, as I explained earlier, because the National Election Commission limited the brochure up to 4 pages until 2004, we see only some policy promises related economic or welfare issues from both candidates' documents. Mr. Seo Jangeun of the conservative Grand National Party, who was an aid of the incumbent Suh Chungwon, first put forward promises that were aligned with the party's major policy agenda. For example, the new town project was the major agenda of the conservative party, mainly because the mayor of Seoul, Lee Myung-bak, who became a president later, launched urban redevelopment projects which also involve infrastructure development and use of private capital in 2002. While many conservative candidates in Seoul were fueled by this project, using it as a major promise, Mr. Seo had more incentives to do so because Dongjak had been underdeveloped for many decades.

Table 12: Comparison of Campaigns on Economic Policies and Welfare Issues of the Two Candidates in Dongjak 1st District

2004 Election for the 17th KNA								
Candidate	Mr. Seo Jangeun (R)	Mr.Jeon Byungheon (D)						
Vote Share	36.83(%)	43.23(%)						
Main Policy	 Develop new town project Develop transit station areas by attracting private capital Improve transport infrastructure 	-Stabilize the livelihoods of low-income households -Create jobs for the youth -Enhance welfare programs for the elderly citizens						
2008 Election for the 18th KNA								
Candidate	Mr. Kwon Gigyun (R)	Mr. Jeon Byungheon (D)						
Vote Share	43.54%	44.86%						
	- Address the shrinking middle-class and increased	- Emphasize the importance of the middle class						
	income inequality and economic polarization	and low-income households						
	- Develop new town project	- Introduce the Property Tax Sharing Policy						
Main Policy	- Develop transit station areas by attracting	- Develop new town project						
	private capital	- Develop transit station areas						
	- Attracting specialized high school	- Attracting specialized high school						
	- Modernize the Noryangjin Fish Market	- Modernize the Noryangjin Fish Market						
	2012 Election for the 19th	h KNA						
Candidate	Mr. Seo Jangeun (R)	Mr. Jeon Byungheon (D)						
Vote Share	44.43%	55.56%						
	- Reduce tax burden for the low-income households							
	- Establish free childcare systems	- Establish universal welfare programs						
	Develop transit station areas by attracting	- Increase support for rental housing, build						
	private capital	long-term rental housing, and						
	- Modernize traditional markets	adopt housing voucher programs						
Main Policy	(ex: Noryangjin Fish Market)	- Increase support for small and						
Main Foncy	- Attract more national fund to the new town project	medium sized businesses owners						
	- Build community centers for sports, culture,	Build village libraries, more day care centers						
	& health and elementary schools	and kindergartens, remodeling public libraries.						
	- Install more security cameras on the street	- Build senior centers, community parks, parking lots						
	- Build new metros in the district	- Install more street lights for security						
	- Redevelopment							

Mr. Jeon, instead, focused on his progressive Democratic Party's campaign agenda, such

as increasing support for low-income households and elderly citizens and creating jobs for young adults. Even though Mr. Jeon was from the opposition party and the district had been supportive of the conservative party member for over twenty years, Mr. Jeon's focus on low-income households and criticism over the new town project, which was claimed not to help poor people, contributed to his first winning the seat.

Some neighborhoods (such as Heukseok-dong) in Dongjak 2nd district were finally chosen to be funded for the new town projects in 2005 and were expected to be filled with new high-rise condominiums facing the Han River view. This project resulted in the relative deprivation among voters of Dongjak 1, making the 2008 election about redevelopment project for both candidates as summarized in Table 12. In addition to the promise about the district's redevelopment, both candidates, Mr. Jeon as an incumbent and a conservative candidate, Mr. Kwon, made several specific promises regarding the middle class and low-income households.

What is even more consistent with my argument that candidates will make similar promises as their district is more unequal in housing prices can be seen in the 2012 campaigns. Although both candidates stated some important agenda copied from their party manifestos, the two candidates also focused on constituency services that would be favored by low income families.

Mr. Jeon was an aide to the President Kim Dae-joong in the Blue House (the workplace of the president of Korea) and worked as Deputy Director at the Government Information Agency. He did not start his career as policymaker as very progressive. In fact, he was more conservative than the party members based on the W-NOMINATE estimates I calculated in the previous chapter. The first dimension for Mr. Jeon scored -.50, which is slightly higher (so more conservative) that his party's average of -0.53. In the 18th Assembly, however, his position moved further leftward, being estimated -0.067, lower (thus more progressive) than the party's mean, -.05. As mentioned earlier, W-NOMINATE estimates are not ideal for comparison across different congresses, but we could examine a member's position relative to their party's average.

Score on the attitudes toward free-market capitalism published by KCFE for the year the 17th Assembly, Jeon's score for the attitude toward free-market was 38.6 for the 17th Assembly (2004-2008), decreased to 29 for the 18th Assembly (2008-2012) and 32.1 for the 19th Assembly (2012-2016) (Center for Free Enterprise, 2008, 2009, 2015).



Figure 33: Changes in the Vote Share and Housing Price in Dongjak 1st District

In the case of Dongjak, too, I consider a more micro-level consideration to be useful. Thus, I present Figure 33 to illustrate changes in Mr. Jeon's vote share as well as housing prices with a smaller unit of administration level (dong). Panel (a) in Figure 33 shows that Mr. Jeon's vote share increased most in the administrative units (dong) in dark blue color whereas, in light blue colored units, the vote share did change least between his first election in 2004 and the last election in 2012. In panel (b), which shows changes of average price for the same period at the *dong* level, the areas in red color saw the highest level of price change while a lowest price change is presented in yellow color. To note, the red area in panel (c),

which was most expensive area in 2004, did not experience highest increases in housing prices as seen in panel (b) and (d). Nevertheless, this area's support for the progressive candidate Mr. Jeon increased. One reason could be that the area has not been chosen for the new town project until 2015 unlike other areas, which may have kept the poor voters within the red area to continue supporting Mr. Jeon.

Overall, Mr. Jeon had electoral incentives to become more progressive than when he first became a congressman. In the 2008 General Election campaign, he promoted that he worked for the middle-class and the low-income citizens during the 17th Assembly. He also proposed to revise the real estate tax in a way that favors poor people. He suggested sharing the profits of large conglomerates with small and medium sized enterprises. In the next election for the 18th Assembly, he proposed to cut the college tuition in half, to decrease telecommunication bills (such as cellphone and internet) in half to ensure an equal opportunity to reach information for the poor, claiming that "the price should be set not by the telecommunication companies, but through consensus between those companies, users and government." (Jeon, 2010).

6.4 Conclusion

In this chapter, I provided case studies on the two congressional districts to examine how changes in aggregate constituency preferences lead to changes in representatives' behavior in more detail and to assist the large-N analyses in the previous Chapter 4 and Chapter 5.

This chapter explored two districts, Bundang 1 and Dongjak 1, because these two districts both experienced significant variations in housing price distribution over the recent decades: Bundang 1 represents a district that gets richer while the other one, Dongjak 1, becomes relatively poorer. In addition, representatives of each district served for three terms in a row (12 years), allowing to control for other potential influences that may cause changes in the representatives' behavior or ideology. Based on the overarching theory (Chapter 2), I expected that a representative becomes more conservative as their constituencies become richer while they become more progressive as their district becomes poorer. Case studies generally support the main argument by relying on various types of resources, such as representatives' interviews with major newspapers, speeches, and annual congressional activity reports, assembling housing price data, and collecting election results at the smallest administrative unit. The representative of Bundang 1 became more conservative, representing his district getting relatively more affluent, while the representative of Dongjak 1 became more progressive as the district remained more unequal over time.

7.0 Conclusion

Wealth inequality is growing around the globe and bears increasingly critical implications for politics. While party polarization associated with growing wealth inequality is witnessed in many advanced democracies, we still have relatively little knowledge about how individual representatives calculate their district preferences under district inequality and behave strategically in the legislature and election campaigns. Even if parties are polarizing, moving away from the median voter, individual representatives are expected to suit their constituency needs to get reelected. Do party members always follow their party or the party leader? When and why do candidates of a district converge or diverge? These questions are critical to better understanding representation in the era of political polarization and soaring inequality.

In this dissertation, I focused on district-level inequality and its impact on individual representatives' behavior. I proposed a theoretical framework for the conditions under which individual representatives, both incumbent legislators and candidates, appeal to the majority of voters. I tested my theory in different settings using a novel data set of district-level housing price inequality. In addition, case studies focusing on two congressional districts' representatives provide more detailed stories behind the large-N studies on the relationship between the individual representatives and constituency wealth inequality.

In this concluding chapter, I first summarize this dissertation's key argument and findings. Then I discuss the contribution of the dissertation and possible future research agenda.

7.1 Summary of Theory and Empirical Analyses

In Chapter 2, I presented a novel theory on the conditions under which representatives polarize (diverge) or converge. I first argued that the types of issues salient for different constituencies are determined by levels of inequality, which in turn affect the preferences and behavior of individual representatives. I argued that, when the wealth distribution is highly unequal (highly skewed rightward) such that most people are located under the midlevel of wealth, economic issues become more salient in this district. Under this circumstance, members of both major parties (left or right parties) have incentives to appeal to the majority of relatively worse-off voters.

I then introduced the data on housing price inequality in Chapter 3. I discussed the importance of wealth inequality, departing from the widely studied income inequality, in Chapter 3. Building on the insights from the emerging literature of wealth inequality and its impact on politics, I built a novel dataset of district-level wealth inequality based on housing prices covering one-third of households in Korea. I also introduced the raw data of housing prices and discussed different patterns of housing prices distribution and how the distributions changed between 2000 and 2016 in Chapter 3.

I tested my theory in two different settings: (1) in the legislature and (2) during election campaigns. Chapter 4 presents an empirical analysis drawing upon roll-call votes of three terms of the Korean National Assembly between 2000 and 2012. I find that the incumbent representatives, especially those from the conservative party, from a more unequal district in terms of housing price distribution, is more likely to deviate from their party leader's position on some important economic bills during the period. The findings suggest important implications for debates on the role of district-level wealth inequality in political polarization. One implicit view in the literature is that the members will also represent the rich under polarizing parties in which a conservative party represents only the rich. However, my findings suggest that, at least when inequality is severe in their district, they may not opt to position themselves as promoting the benefits of the wealthy.

In Chapter 5, I shifted the focus to individual candidates in election campaigns. I tested the theory by exploiting the campaign brochures, allowing us to examine specific policy preferences or positions not only of electoral winners but also who lost. I use the campaign brochures of 400 candidates who ran in the 2016 Korean General Election based on a textanalysis approach. Relying on the structural topic modeling, I first extracted words pertinent to welfare-related topics from all campaign documents and then selected words used for promising material benefits. I find that candidates from both left and right parties use similar strategies, using similar topics and the similar number of words promising welfare-related targeted policies when housing price distribution is highly unequal in the district. Results also suggest how conservative party members try not to violate their party's conservative economic stance by avoiding mentioning "inequality" or "redistribution" while promising targeted benefits as much as their rivals to target the middle-class voters who have become relatively poorer. Findings have important implications for the positioning of politicians under party polarization and populist welfare rhetoric in a world of rising wealth inequality.

The two congressional district case studies in Chapter 6 also support my argument, complementing the large-N analyses in the previous Chapters 4 and 5. Chapter 6 presented the two districts, Bundang 1 and Dongjak 1, representing a district getting relatively richer and a district becoming relatively more unequal, respectively. The same politician had represented each district for three consecutive terms. These two cases present considerable variations in levels of wealth inequality in terms of housing price distribution in recent years and changes in politicians' policy preferences. Using diverse resources, including newspaper interviews, speeches, and congressional reports, to examine changes in the representatives' behavior over time, the first case of Bundang revealed that the representative of Bundang 1 District became more conservative as a majority of voters in his constituency became richer. The other case of Dongjak 1 District presented a progressive representative reflecting his relatively poor district.

7.2 Contribution to the Field and Future Research

This dissertation examining how housing price inequality affects individual politicians' behavior in the legislature and during campaigns makes both empirical and theoretical contributions by using the case of Korea. Empirically, I built an original dataset of districtlevel wealth inequality with housing prices. It covers one-third of Korean households from 2000 to 2016, matched with representatives' preferences based on roll-call votes and campaign brochures relying on a text-as-data approach. Considering varying district conditions, which, I argue, are determined by housing price distribution, I theorize that when housing price inequality is high within a district and thus when inequality-related issues are more salient there, incumbents deviate from their co-partisans while candidates converge to their opponents in welfare rhetoric during campaigns even under party polarization. To my best knowledge, there are currently no candidate-level analyses on welfare rhetoric depending on the district-level wealth distribution despite new data that emerged from machine learning approaches. Findings have important implications for the positioning of politicians under party polarization as well as populist welfare rhetoric in a world of rising wealth inequality.

The theory and empirical considerations of my dissertation can provide several proposals for future research. My suggestions here are not limited to the Korean case but could be applied to different country settings.

First, one interesting future research would be to examine whether representatives' behavior or preferences change depending on redistricting. Redistricting should involve a change in the demographic composition of voters as well as changes in wealth distribution. Because these shifts will influence aggregate voter preferences, representatives will need to change their strategy to win (re)elections. Alternatively, if redistricting does not influence the responsiveness of the representatives, it will be also interesting to examine under what conditions they do not reflect the changed constituency preferences. Similarly, future research could examine whether campaign contents change depending on the constituency conditions. Lastly, future research could consider a survey method to unpack a causal mechanism on the relationship between wealth inequality and representation by, for example, examining whether candidates or incumbents respond to the voters' requests for constituency services differently depending on different wealth groups within a constituency.

Appendix

A.1 Selecting the Number of Topics to Estimate the Structural Topic Modeling

I initially tried with different topic numbers, from 5 to 20 topics (labeled as Mod5, Mod10, Mod15, and Mod20). Figure 34 presents four diagnostic values showing how the models are performing at various numbers of topics. First, held-out likelihood, which shows how well the documents generalize by holding out some proportions of the words, has a decreasing tendency although higher values is better. While values for residuals and lower bound should be lower to be a good model, it is better to have a higher value of semantic coherence, which is maximized when the most probables words in a given topic co-occur together. Even though there could be trade-offs for different numbers, we observe that the semantic coherence decreases significantly after around 7 to 9 topics, therefore the best results seem to be in this range. According to Roberts et al. (2014) who developed the R package "stm" manual, 3–10 topics can be considered appropriate for a small set of documents, for example a few hundred documents, especially if the collection of documents have a clear subject. In my case, with around 400 documents (campaign brochures) and also considering the subjects are clear in terms of policy areas that could be considered important by candidates and parties, considering 7-9 topics will be appropriate.

In addition, Roberts et al. (2014) suggest that it can be helpful to compare then semantic coherence to exclusivity, which involves how exclusive each topic is based on frequency. Figure 36 plots comparisons for four different number of models, from 5 topics to 20 topics. With the models with 5 and 15 topics having outliers, the two models with 10 and 20 topics appear fairly similar. However, considering Figure 34, I proceed with the model with 8 topics, which appears to be a good compromise considering both Figures.





Diagnostic Values by Number of Topics

Figure 35: Frequent words for each topic in detail

Topic 13

새만금, 이승, 성포, 운용, 문산, 이행기간, 경호, 우선순위, 월피, 본부, 세건금, 이승, 영호, 문향, 문영, 사이버, 가위, 영호, 부연, 가위, 영호, 부분, 보안, 범환, 영희, 탄소, 기금, 사이버, 가위, 도의원, 동일경제, 소하, 광덕, 첨단, 원곡, 수암, 도림, 소래, 시의원, 도의원, 동일경제, 소하, 광덕, 전라, 벌금, 재원조달, 혁신도시, 절차, 이광재, 저작권, 사퇴, 백제, 평산, 부곡, 계명, 미군, 관광학, 시년, 증기, 학회, 하안, 여당의원, 경상, 덕계, 정무비, 통일, 천의, 신길, 박사, 경관, 창회, 회장

Topic 2:

Topic 2: Topic 2: 탈성, 오송, 장유, 관련기관, 오창, 공덕, 내실화, 학대, 돌봄, 병점, 칩첩, 염리, 조기석, 사상, 센타, 생애, 배려, 엄마, 위례, 비스, 근로시간, 행복, 맞춤형, 홍덕, 독순이, 감사패, 용강, 급여, 사각지대, 장난감, 아빠, 오송역, 공정, 보험, 발달, 항노화, 오금, 사다리, 반월, 사상구, 최연소, 교복, 생명, 구직, 주기, 파크, 대성, 부모님, 우선, 장항선, 경감, 심대평, 간병, 의료비, 국가책임, 의무화, 태평, 칠산, 으거 문화 요건, 문학

Topic 3: 능곡, 장곡, 행신, 비억, 일산, 확포장, 시도, 덕양, 법사위원장, 박달, 석수, 국지도, 국도, 개량, 원국, 포곡, 농촌, 정비사업, 매화, 게이트볼장, 사업, 인삼, 배수, 빨간운, 행신역, 화전, 삼송, 송내, 전철, 행중, 목감, 안효대, 처인구, 개선사업, 주암, 농어촌, 관철, 하수관로, 교부세, 기재, 저수지, 억만, 온천, 완료, 과학, 요청, 신촉, 입도, 용호, 대교, 방어, 안락, 임사, 왜관, 행주산성, 플랜트, 공사, 재해, 원내대표, 크인 큰일

Topic 4:

Topic 4: Topic 4: 검사, 팔달, 송도, 호매, 정찬, 국제도시, 신월, 장안구, 사법시형, 번호사, 사당, 장안, 자식, 팔달구, 검단, 광교, 중곡, 이현주, 살림, 영통구, 아버지, 박원순, 찬성, 검찰, 법조, 짜일꾼, 당신, 수지, 꼴찌, 재벌, 우리, 흑석, 신정, 세금, 아이, 의원실, 시작, 소년, 청원, 권선구, 옥련, 난곡, 중원, 중원구, 나이, 세상, 방법, 봉천, 돌파, 불과, 트럭티미널, 송도유원지, 김정, 신림, 그것, 생각, 아내, 겨울, 기억, 프래포 플랫폼

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Topic 5: 귀포, 곤지암, 수산물, 지역민, 소스, 휴양, 군민, 농어민, 오포, 크루즈, 농산물, 생산, 천군, 해안, 관광지, 가공, 감귤, 표창, 과장, 입학금, 도청, 유통, 탈당, 산복, 지리산, 산림, 도당, 항만, 삼칙, 해양, 귀촌, 관광객, 상북, 생태관광, 배방, 선수, 수산, 귀농, 송악, 당나귀, 슈퍼맨, 치즈, 특별자치도, 청정, 고향, 농어촌, 설악, 탁월, 부지린, 산단, 겸직, 농협, 집권여당, 도민, 불합리, 풍부, 농축수산물, 지역발전, 유기농, 전라

Topic 6:

Topic 6: Topic 6: 기장, 가계부채, 김대종, 파탄, 실업률, 심판, 정권교체, 불평, 노무현, 정권, 연평균, 경제성장률, 경제정책, 기흥, 국정원, 소득, 채무, 무상급식, 한국은행, 해고, 양극화, 민주정부, 재별, 최저임금, 경제통, 경제, 임금제, 실패, 안희정, 만원, 경춘선, 세월호, 야권, 법제화, 무책임, 비정규직, 최저, 총소득, 요건, 인상, 청량리역, 자료, 방지법, 하락, 생활임금, 단일, 사회적, 정부, 반토막, 문재인, 급여, 민주화, 추락, 중단기, 유급휴가, 업종, 참사, 비율, 상위, 중산층

Topic 7:

Topic 7: 장림, 정왕, 반송, 암사, 다대, 풍무, 청라, 탄신, 고덕, 계송, 강릉, 월곷, 고촌, 하단, 트램, 사우, 수택, 울주, 패션, 괴정, 감천, 내선, 신평, 둔촌, 루원시티, 석대, 정자, 마곡, 센텀시티, 로봇, 다대포, 강일, 문현, km, 보호관찰, 광역시, 성내, 방화, 이미지, 광안, 정왕역, 수내, 교문, 매립지, 제개발, 평창, 올림픽, 금곡, 등급, 강변, 김상훈, 농소, 차질, 브랜드, 구미, 한강, 완공, 월곡, 풋살, 도매시장

Topic 8

Topic 8: 종은, 상계, 주안, 호계, 중계, 정릉, 가좌, 홍제, 비산, 도화, 급식실, 평촌, 엘리베이터, 대림, 연희, 가제, 방수, 세곡, 쌍문, 관양, 창호, 사당, 신촌, 냉난방, 울시, 화장실, 교체, 갈산, 간선도로, 보정, 간담회, 옥상, 바닥, 보도, 인덕, 횡단보도, 구립, 기부, 의천, 본관, 영통, 연합뉴스, 신길, 인왕, 지하철, 신용카드, 개관, 강당, 면담, 수수료, 급행, 재울, 기존도시, 총영사, 부도로, 완료, 사당로, 산곡, 삼선, 화곡

Figure 36: Comparing exclusivity and semantic coherence for the models of different topic numbers



Comparing exclusivity and semantic coherence

Note: **Semantic coherence** on the x axis presents how often do words that have a high probability of belonging to one topic, also co-occur in the respective document. **Exclusivity** on the y axis shows us how exclusive are the words that occur with high probability for a topic. In other words, exclusivity presents whether the words appears in other topics is very unlikely.

Word (Korean)	Translated
강화	enforcement
개발	development
개선	improvement
개설	opening
건립	building
건설	construction
교체	replacement
구축	building or setting up
달성	accomplishment
도입	introduction
마련	preparation, provision, arrangement, plan
발전	development
설립	establishment
설치	installation
시작	initiation
신설	establishment
신축	(new) construction
실현	realization
연장	extension
완공	complete construction
운영	manage, operate
유치	attraction
육성	promote, support
이전	relocation
조성	create, promote
준비	preparation
지급	provide or pay
지원	support
작공	begin construction
장줄	creation
해결	settlement or solving a problem
확대	enlargement
확보	securing (budget)
확상	expansion
확중	supplement
활성(화)	vitalization

A.2 Summary Statistics (Chapter 5)

	count	mean	sd	min	max
Promise Gap	199	38.75	36.05	0	231
Gini	199	0.21	0.05	0.11	0.33
P90/P10	199	2.81	0.73	1.59	5.31
No. of Candidates	199	3.71	1.18	2	10
Vote Margin	199	0.14	0.11	0	0.54
Ideology Gap	199	0.18	0.22	0	0.82
No. of Voters	199	165497.67	30505.79	111876	235228
Mean Price	199	0.53	0.59	0	3.15
TK region	199	0.07	0.25	0	1
Honam region	199	0.10	0.29	0	1
Price Level	199	1.9	0.6	1	3
Observations	199				

Table 14: Summary Statistics

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