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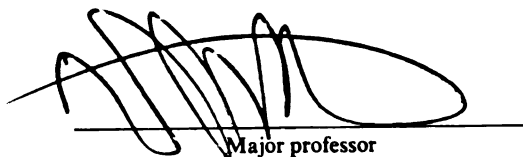
The Electoral Consequences Of Mixed Electoral Systems:  
Contamination Effects And Strategic Behavior In Japan

presented by

Misa Nishikawa

has been accepted towards fulfillment  
of the requirements for

Ph.D. degree in Political Science



Major professor

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**THE ELECTORAL CONSEQUENCES OF MIXED ELECTORAL SYSTEMS:  
CONTAMINATION EFFECTS AND STRATEGIC BEHAVIOR IN JAPAN**

**By**

**Misa Nishikawa**

**A DISSERTATION**

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## **ABSTRACT**

### **THE ELECTORAL CONSEQUENCES OF MIXED ELECTORAL SYSTEMS: CONTAMINATION EFFECTS AND STRATEGIC BEHAVIOR IN JAPAN**

By

**Misa Nishikawa**

Two types of mixed electoral systems have been used in Japan's post-war history. These mixed systems combine a proportional representation rule with either a single member district system or a medium size district system to decide seat allocations. The use of these mixed electoral systems has produced a number of political parties that violates our expectations as stated in Duverger's Law and the M+1 Rule. In this dissertation, I explain why our expectations do not hold up and replace them with different expectations that are more sensitive to the institutional features of mixed electoral systems. The focus of my argument is how the use of a proportional representation rule contaminates the effects that are normally associated with plurality rules, especially how voters contribute to violating Duverger's Law and the M+1 Rule.

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**For My Parents  
and Brother**

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**Part I.**

**Introduction**

## **Chapter 1**

### **Introduction**

In the last two decades, more and more democracies have adopted mixed systems under which to conduct elections to their national legislatures.<sup>1</sup>

These mixed systems are composed of two distinct sets of electoral rules that include district systems with a plurality rule and a proportional representation (PR) rule.<sup>2</sup> These more recent mixed systems are different from the more well known form of mixed electoral systems, such as that found in Germany, because in the German mixed system, the PR component is used to compensate for the disproportionality that is caused by the single member district (SMD) component of the system.<sup>3</sup> Newer mixed election systems are true parallel systems that were intended to operate independently of each other.

Electoral institutions are usually changed with some political purpose in mind. Such purposes typically involve attempts to improve the quality of a nation's electoral politics in some way, but changes in electoral rules are tricky because they always touch directly on the electoral fortunes of elected officials and the parties to which they belong. We know much about the impacts that certain electoral institutions carry for political actors, but we know

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<sup>1</sup> For example, these countries include Russia, Ukraine, Lithuania, Armenia, Azerbaijan and Georgia.

<sup>2</sup> Seats are distributed to political parties based on their vote shares and are allocated proportionally to political parties.

<sup>3</sup> With an SMD plurality rule, a candidate who gains the largest number of votes in a district wins a seat.

little about the partisan consequences of mixed systems especially those mixed electoral systems that have been adopted in the more recent past. The focus of dissertation then is to demonstrate how these mixed systems influence party systems.

The effect of mixed electoral systems is unclear so far because such systems have not influenced party systems in the way that some scholars expected. The cases of Japan (1993) and Russia (1994) adopting mixed systems for elections to their Lower Houses are illustrative. Until 1993, Japan's Lower House held its postwar elections under a medium-sized district system with a single nontransferable vote (SNTV) rule.<sup>4</sup> In the late 1980s and the early 1990s, the Japanese government was under constant pressure from the general public to carry out political reform because of repeated incidences of corruption. One of the political reforms that the government chose to carry out was a change in its electoral rules. It chose to do so since some scholars suggested that its medium size district system promotes corruption. The reason for this is related to the fact that major political parties have to place more than one candidate in each district to win a majority in the Diet. The resultant intra-party competition was said to promote corruption.

The Liberal Democratic Party (LDP), the largest party in Japan, tried to adopt a mixed system that would reflect the characteristics of the regular plurality SMD rule. LDP leaders advocated this system because they

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<sup>4</sup> Under a medium size district system, multiple representatives are elected. For this reason, the system should be called a multimember district system. However, I will use the name, the medium size district system, in order to distinguish it from proportional representation rules.

expected such a system to give them a substantial seat bonus. LDP leaders also expected the system to produce a two party system in which the LDP could maintain its majority party status for at least the foreseeable future. Although the regular SMD system was more attractive to the LDP members, a mixed system with an SMD component was proposed instead. This is because the mixed system was expected to have a greater likelihood of passing in both houses. Having lost its majority in the Upper House of the Diet in 1989, the LDP needed the support of other parties to pass an electoral reform bill. The mixed system that was ultimately advanced utilizes a PR rule that would distribute seats more proportionately with parties' vote shares compared to the regular SMD system. With a PR rule, small parties could expect to survive and, as a result, were expected to support the mixed system.

The reason why LDP leaders expected their party to benefit from the use of the regular SMD system is found in scholarly writing. Many researchers expected that the mixed system that Japan was to adopt would reduce the number of parties. They came to this conclusion because they expected the SMD portion of the system to be dominant. The reasoning behind this view is based on Maurice Duverger's idea that a plurality SMD system leads to two party competition at the district level (Reed and Thies 2001). For example, Murakami (1991) suggests that the mixed system would create a two-party system in Japan because of the use of SMDs. Murakami also suggests that

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The medium size district system uses a plurality rule, whereas the multimember district systems usually use proportional representation rules.

the use of eleven separate electoral districts in the plurality section of the system, instead of the use of a single national district, would further enhance the system's ability to reduce the number of competitive parties (Murakami, 1991). Miyake (1989) suggested that the mixed system's ability to reduce the number of parties will be stronger, compared to Japan's old medium size district system with SNTV.<sup>5</sup> Budge et al. (1997) indicates that the mixed system would work more like the plurality SMD rule except that the impact on electoral outcome would be "softened."<sup>6</sup>

The case of Russia also illustrates the point that political actors have attempted to adopt an electoral system for some political purpose. When democracy was established, reformers were divided over what kind of electoral system would maximize their benefits, i.e. the number of seats. Some reformers expected that they would do well in the next election if they adopted the regular SMD system since the latest referendum at the time showed that the Russian electorate was more pro-reform than anti-reform. What this means is that, based on Duverger's Law, these reformers expected the system to produce a two party system in which reformers would dominate (Remington and Smith 1996).

Although the regular SMD rule was attractive to these reformers, other reformers in Russia were not sure about the benefits of the regular SMD

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<sup>5</sup> Miyake (1989) states that the impacts of the mixed system are closer to that of the plurality SMD than that of the SNTV medium size district system when the constituency is divided into districts by prefectures. Miyake also states that in the mixed system with compensatory seats, the impacts come more from the PR portion of the system.

<sup>6</sup> Sato (1997) also reports that the electoral reform was carried out because the practitioners expected a superposition system to produce a two party system.

system. Reformers understood that they would have difficulties in placing candidates in some of the rural districts where communists were still dominant, even though they knew that they would do well in large cities. Moreover, reformers themselves were composed of a number of small parties that may not do well under the regular SMD rule. Under such conditions, the use of a mixed system with a PR rule appeared to be the best solution. Russian reformers expected that they could benefit from the SMD rule in Russia's cities, while the plurality section of the system would reduce the fragmentation of parties (Remington and Smith 1996, White, Wyman and Kryshtanovskaya 1995).

Unfortunately for those involved in the creation of these two mixed systems, election results have proven to be disappointing. The problem is that the Japanese and Russian mixed systems have not reduced the number of parties to the level that Duverger's Law predicted. Briefly, the mixed system of Japan's Lower House produced a 4.1 effective number of political parties in 1996, while the SMD portion of the system alone produced a 2.9 effective number of parties.<sup>7</sup> This means that the SMD part of the system produced one extra party than Duverger's Law predicts.<sup>8</sup> Russia's mixed system as a

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<sup>7</sup> The description on the number of parties will be seen in more detail in Chapter 2.

<sup>8</sup> There is a .9 difference between the number that Duverger's Law predicts and the number that the Japanese Lower House election produced. The effective number of 2.9 is substantially larger compared to the numbers that other countries with plurality SMD have produced. For example, the values for the U.S. House and Turkey are 2.1. The values for the U.S. Senate and Norway are 2.2. The values for South Africa and Sweden are 2.3. New Zealand has produced 2.4, and United Kingdom has produced 2.5. Substantively, the difference of .9 means that the mixed system produced one extra party, compared to the regular SMD system.

whole produced 5.6 in 1995, while the SMD part alone produced 4.7, that is, at least two more parties than the law predicts.

One explanation for these unexpected results can be attributed to time, that is, the data that are available now are insufficient to judge the long-term effects of these new mixed electoral systems.<sup>9</sup> The idea that electoral rules take some time to shape party systems is also based on Duverger's Law. More specifically, Duverger's Law is formulated on the idea that voters are strategic in that they try not to waste their votes by supporting a competitor who has little chance of winning. Moreover, political contributors will not waste their resources by investing in competitors who are not likely to win. The point is that such decisions may take some time because they require that voters and contributors identify which candidates and parties will never be electorally competitive.

Even though there may be some truth to the argument that electoral institutions require more than one election to shape party systems, time may not be the principal factor explaining why the Japanese and Russian Lower Houses have not produced two party systems. This is because there is one other case in which a mixed electoral system has not produced the expected outcome, even though elections have been held a number of times. The

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<sup>9</sup> It is usually expected that electoral systems take some time to shape a party system. According to Horie (1989), a simultaneous change of a party system was not seen in 1924 when a medium size district system replaced a single member district system in Japan. The change from a two party system to a multiparty system was observed around 1931.



reference here is to Japanese Upper House elections which have produced results that do not follow Duvergerian expectations.<sup>10</sup>

Japan's Upper House is composed of a medium size district system with an SNTV rule and a PR rule.<sup>11</sup> A large number of researchers accept the idea that the number of parties should approach  $M+1$  under the SNTV rule where  $M$  is the district magnitude (Ishikawa 1981; Miyake 1989; Reed 1990; Cox 1997). The relationship between Duverger's Law and the  $M+1$  Rule is that the  $M+1$  Rule is considered to be a more generalized version of Duverger's Law. This is because both the SMD system and the medium size district system utilize a plurality rule. The difference is that a single winner is produced in the SMD system and multiple winners are elected in the medium sized district system.

What we see in the election results under the Upper House version of the Japanese election system is that the numbers of competitors have long been above the expected equilibrium. The effective number of parties for the medium size district portion of the system in 1983 is 5.15 where the district magnitude is 3.<sup>12</sup> The numbers for the 1986 and 1992 were 4.9 in both years. Overall, the mixed system for Japan's Upper House has produced two more effective parties than the  $M+1$  Rule predicts.<sup>13</sup> What these results suggest is

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<sup>10</sup> The Upper House has carried out elections by using a mixed system for six times.

<sup>11</sup> With the SMD rule, one representative is elected from each district, while two to four representatives are elected with the medium size district system.

<sup>12</sup> The score is the mean effective number of parties. The score is calculated based on districts that have a district magnitude of 3.

<sup>13</sup> The Lower House used a regular medium size district system with the SNTV rule, until it adopted a mixed electoral system in 1994. The effective number of parties for the Lower House Election in 1986 is 4.4. There is a .5 difference between the regular medium size district system that is used in the Lower House before 1994 and the medium size district part

that researchers have missed a factor inherent in mixed systems that produces more than the number of parties predicted by Duverger's Law.

The purpose of this dissertation then is to show what is missing in current assessments of mixed electoral systems and explains why these systems will produce more than the number of parties that are specified in Duverger's Law and the M+1 Rule. I argue that Duverger's Law and the M+1 Rule do not hold under the plurality component of mixed electoral systems because the effects of the SMD elections or medium size district elections (hereafter, I will refer the SMD and medium size district elections as plurality elections) are contaminated by that of the PR elections.

The logic behind the contamination effect is quite intuitive. Voters have two ballots under a mixed system, casting one ballot for a candidate under the plurality section of the system and another for a party under the PR component. Because voters make choices in the two parts of the system simultaneously, the choice made in one part of the election is contaminated by the choice of the other.

This simultaneous decision-making on the part of voters, in turn, influences how parties expect voters to perceive their popularity. More specifically, political parties have an incentive to place more candidates in the plurality component of an election system because placing a candidate in such districts will help them gain extra votes in the corresponding PR districts. This is because political parties achieve more visibility in the PR districts by

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of the mixed system. The difference seems to be important since the difference of .5 means that we will have an additional small to medium size party under the mixed electoral system,

having candidates stand in the plurality portions of those same PR districts. The only prerequisite for making individual candidates help a party in the PR districts is that these candidates expose voters to their respective party labels.<sup>14</sup>

For example, Mizusaki and Mori (1998) found that in the 1996 Japanese Lower House election, the placement of a candidate in a single member district improved parties' performance in corresponding PR districts. Mizusaki and Mori found such an improvement in party performance by comparing a party's results in districts in which it placed its candidate with those in which it did not. Herron and Nishikawa (2001) extended the work of Mizusaki and Mori by adding other controlling variables to the model. Herron and Nishikawa also improved the previous studies by adding Russia's Lower House elections. Herron (2000) further developed the study of contamination effects by applying the idea to a larger number of countries.

What we may conclude from this research is that an incentive exists for parties to put up candidates in SMDs even if they have no chance of winning. The reasoning behind such an incentive is that party leaders believe that placing a candidate will give voters the impression that their respective parties are performing well in the district and may also perform well in the election as a whole. Contrarily, party leaders believe that if voters do not see a candidate from their respective organizations, they may interpret this as a sign of

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compared to the regular medium size district system.

<sup>14</sup> Some researchers have applied this idea to mixed electoral systems that combine SMD and PR rules found that the placement of a candidate in an SMD did indeed help that

weakness. In short, the placement of a candidate has an advertising effect for that particular party. The creation of an incentive also inflates the number of candidates because of the change in strategic entries of marginal competitors.<sup>15</sup>

While we have learned much from existing research, it is necessary to point out that previous studies have shown only that *the number of candidates* who are placed in the SMD part of a mixed system will be larger than Duverger's Law suggests. In light of this, existing research can be improved in two ways. First, previous research has been carried out only on mixed systems with an SMD rule. As a result, the idea that the plurality section of a mixed system will violate Duverger's Law has not been generalized to those mixed systems that combine a medium size districts with an SNTV rule and a PR rule. We should be able to observe the contamination effect in other mixed systems that have two separate components that work independently, because the violation of expected equilibria should be applicable to other mixed systems.

Secondly, and perhaps more importantly, previous research has not examined what role voters play in shaping party systems under these condition. Existing research has only shown that the number of candidates will be inflated because of the change in strategic entries of marginal

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particular party to gain an extra vote shares in a corresponding PR district (Mizusaki and Mori 1998, Herron and Nishikawa 2001, Herron 2000).

<sup>15</sup> Mizusaki and Mori (1998) may not agree with this idea. Mizusaki and Mori may not agree with this idea. They suggest that this tendency to improve the performance in the PR election only helps large parties since small parties cannot place many candidates in the plurality election.

competitors in the plurality section of a mixed system. It would be most useful to determine how voters under such conditions cast their ballots for these marginal competitors. As mentioned above, mixed systems create an incentive for parties to place candidates in the plurality component of the system. This change in incentive produces an opportunity to vote for a marginal candidate who would not be running if an election was carried out in a regular plurality system. If voters, who happen to prefer one of these extra candidates, actually cast their ballots for these candidates, we can expect that the number of parties will be inflated, leading to the violation of Duverger's Law. If voters do not vote for these candidates, the number of parties would conform to the Duvergerian expectation.

The literature on strategic voting does not confirm that voters necessarily cast their votes for these extra candidates. Strategic voting refers to the voting pattern in which a voter casts her ballot for a less preferred candidate.<sup>16</sup> The voting literature suggests that voters do not waste their votes by casting ballots for candidates who are manifestly unable to win. Where voters prefer a candidate who is only marginally performing, they are likely to either abstain from voting or vote for other candidates who are more likely to win. This pattern of behavior is especially found in plurality systems.

Although no studies have been carried out to find out how voters play a role in shaping party systems in mixed systems, a significant number of scholars have argued that a substantial amount of strategic voting is also

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<sup>16</sup> The definition of strategic voting will be discussed more thoroughly later.

present in mixed systems (Barnes et al. 1962, Fisher 1973, Jesse 1988, Bawn 1993 and 1999, Kohno 1997, Reed 1999). If we follow their argument for now and assume that a significant amount of strategic voting is present, it can lead us to believe that the number of parties may not be as inflated as we may expect, even though mixed systems tend to increase the number of candidates in plurality districts. This is because candidates who are more likely to win get most vote shares, while marginally performing candidates receive little to no support, adhering to Duverger's Law or the M+1 Rule.

However, we wonder if we can accept above conclusion without analyzing voters' behavior further. This is especially true because we find some problems in the approach that the existing studies followed. One problem with existing research is that it assessed strategic voting without considering how the two components in mixed systems may interact, so that voting behavior in mixed systems may be different from that in regular plurality systems. More specifically, existing research ignored the contamination effect of the PR district elections on the plurality elections. It would be more appropriate to assess voters' behavior by taking the contamination effect into account.

The other problem with previous studies is that it tested strategic voting only by looking at district level data. Since strategic voting is an individual level phenomenon, analysis with district level data may result in an ecological inference problem. The main purpose of my dissertation then is to assess voting behavior in mixed systems by taking the contamination effect into

account and assess voting behavior with both individual level and aggregate level data. By doing so, I will show that voters do not vote strategically in the plurality component of mixed systems as originally thought.

To address the problems that have been described above, this dissertation will be organized as follows. Chapter 2 provides an overview of Japan's two mixed electoral systems. The first system refers to Japan's Lower House (House of Representatives), which is a mixed system composed of a plurality SMD rule and a PR rule. The second system refers to Japan's Upper House (House of Councilors), which is a mixed system that uses an SNTV rule and a PR rule. This chapter will provide the description of Japanese mixed systems and the empirical descriptions of the results produced under these rules with the idea being to show how Duvergerian expectations never accurately described election results produced in these mixed rule systems.

Chapters 3 and 4 will describe the theory that explains why the plurality portions of Japan's mixed superposition systems violate Duverger's Law and the M+1 Rule. In these two chapters, I will discuss the idea behind contamination effects in mixed systems in more detail. I will do this by discussing how the behavior of political parties and voters in a mixed system deviates from the behavior that Duverger's Law predicts. I will show that these deviations take place because of the contamination effects by the presence of PR districts. These deviations in voter behavior in turn lead mixed electoral systems to produce a higher number of political parties.

The strategic behavior of parties will be discussed in Chapter 3 while the strategic behavior of voters will be discussed in Chapter 4. In Chapter 3, I will discuss how the presence of the PR districts contaminates the behavior of political parties in the plurality districts. I will especially focus on the fact that extra vote shares will be obtained in the corresponding PR district by placing a candidate in the plurality portion of the system. This promotes political parties to place their candidates in the plurality section of the system. For party decisions on candidate entries, it is important to focus on candidates who are only performing marginally since the placement of marginal competitors plays a key role in increasing the opportunity for voters to spread their votes to minor parties. I will also generalize the idea that parties with marginal competitors develop an incentive to place these competitors in the plurality component of a mixed system with a medium size district rule.

In Chapter 4, I will show that strategic voting is not a dominant choice among voters in mixed electoral systems. I will do so especially by describing how two features of a mixed system prevent voters from behaving strategically. The first is that mixed electoral systems create voting conditions in which voters cannot easily engage in strategic voting. Briefly, one of the most important factors that specifically reduces the occurrence of strategic voting in mixed systems is that they create the condition in which some voters have an opportunity to vote for their most preferred candidate, while others do not. This will make strategic voting impossible to occur among the latter group of voters.



The second is that mixed systems encourage voters to vote for marginal competitors even when the voting environment allows voters to behave strategically. In particular, I will argue that the presence of PR districts encourages voters to cast their ballots for a marginal candidate in systems.

In Chapter 5, I will derive two hypotheses based on the theory of strategic entry of political parties from Chapter 3. The first hypothesis will deal with parties' strategic entries in the mixed system that combines an SMD rule and a PR rule. This hypothesis applies directly to Japan's Lower House, which uses a mixed system with SMD and PR rules. The second hypothesis will deal with strategic entries in a mixed system with an SNTV rule and a PR rule. This is one that relates to Japan's Upper House elections. After deriving the hypotheses, I will describe the methods and data that will be used to test these two hypotheses for parties' strategic entries. Specifically, electoral returns at the district level will be utilized for these hypotheses. The results of empirical tests conducted in this chapter will show that parties have an incentive to place their candidates in the plurality portions of mixed systems, even when these candidates have little chance of winning a seat.

In Chapter 6, I will empirically support that the plurality component of the systems create a voting environment that prevents voters from engaging in strategic behavior. I will also show that the occurrence of strategic voting is rare in mixed electoral systems, so that they do not reduce the number of parties as Duverger's Law and the M+1 Rule suggest.

Chapter 7 will be devoted to testing the impact of sincere voting on party systems. Although Chapter 6 will be informative in showing that voters rarely vote strategically in mixed systems, it is not sufficient to say that a significant number of voters cast their ballots sincerely so that the number of parties will be inflated.<sup>17</sup> In Chapter 7, I will show how the increase in the number of candidates is directly related to the inflation of the number of parties in mixed electoral systems.

Chapter 8 will conclude this dissertation by summarizing its findings and discussing their implications. In particular, I will discuss potential impact of mixed systems on democratic performance. Finally, I will end the discussion by considering the generalizability of the study findings in Japan to other countries.

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<sup>17</sup> Sincere voting refers to the voting pattern in which a voter casts her ballot for her most preferred competitor.

## **Chapter 2**

### **Mixed Electoral Systems in Japan**

Although studying Japan's mixed systems in the Lower and Upper Houses is attractive, we need to be cautious about the comparability of the two systems. This is especially true because the electoral rules of mixed systems are rather complex, and moreover, the rules have been changed over time in Japan. In addition to the description of Japan's mixed systems and the comparison of the systems between the Lower and the Upper Houses, they should be compared with mixed systems in other countries. There are many types of mixed systems in the world today, and a significant number of studies have been carried out to study these systems. This suggests that it is necessary to clarify what type of mixed systems Japan uses and how they are classified in the literature on mixed systems.

For example, Japan's mixed systems are different from the system that has been traditionally used in Germany. Japan's systems do not use the PR component of the system to compensate for disproportionality that is created in the plurality section, whereas the German system corrects for such disproportionality. Moreover, there are other rules that vary across different countries, and as a result, other factors that determine the classification of Japan's mixed systems along with whether or not Japan's mixed systems have a compensatory mechanism should be examined cross-nationally.

Another important task that needs to be completed before we start to analyze the impact of Japan's mixed systems is the description of election outcomes. In Chapter 1, I briefly sketched election outcomes in terms of the effective number of parties and argued that Japan's mixed system has produced the results that do not follow our expectation based on Duverger's Law and the M+1 Rule. However, a more complete discussion of election outcomes is essential. This is especially because since there are some scholars who argue that the plurality component of the Lower House elections does not violate a Duvergerian equilibrium (Kohno 1997, Reed 2001). For example, Kohno states that a mixed electoral system as a whole produces a multiparty system. However, the single member district (SMD) part produces a two party system, suggesting that the system does not violate the Duvergerian expectation.

Under such circumstances, it is important to describe both the plurality component of the election outcomes and the proportional representation (PR) section more carefully and show that the plurality component has produced a party system that does not conform to a Duvergerian equilibrium. In particular, I will show the tendency that the plurality section of a mixed system produces a larger number of parties is maintained even when it is compared with the election results under regular plurality systems.

There is another reason why the description of election outcomes should be carefully done before we begin the analysis on how mixed systems influence party systems. This has to do with the fact that election rules take a

while in shaping party systems. As was mentioned earlier, only two elections were carried out under a mixed electoral system in the Lower House, including the 1996 and 2000 elections. The outcomes so far support the idea that mixed systems inflate the number of parties. Arguably, however, this does not necessarily lead us to conclude that mixed systems will lead to the inflation of the number of parties. This is because the mixed system may produce a two party system if enough elections are carried out in the future.

Under the situation, it is important to analyze the Upper House election outcomes more carefully since mixed electoral systems have been used a number of times in the Upper House elections. If the outcomes in these elections show that the number of parties is inflated, it would be stronger evidence to support that the plurality component of the mixed system inflates the number of parties.

Given the concerns stated above, I will describe Japan's systems in more detail including the background on how they were adopted and will add the information on where Japan's system fit in the world's mixed systems. Second, I will describe Japan's election outcomes in the Lower and Upper House elections.

### **History of Mixed Electoral Systems in Japan**

Mixed electoral systems have been used in the most part of Japan's postwar history, during which Japan experienced variations of mixed systems. The first mixed system was used in the 1950 Upper House election. The

mixed system at the time combined a nation-wide multimember district system with a plurality rule, i.e. single non-transferable vote rule (SNTV), and forty-seven multimember prefecture districts with a plurality rule. The nation-wide district elected 56 councilors, while the prefecture districts elected 76 councilors (Asahi Nenkan 1951).

In 1981, the Liberal Democratic Party (LDP) proposed to change the plurality rule that was used for the nation-wide multimember district rule to a closed-list PR rule (Asahi Nenkan 1982). The LDP proposed to change the old system because many politicians complained that the system was one of the worst electoral rules because of the nonpartisan nature of the election. Moreover, the old system required an unusual amount of funding since candidates had to cover the entire nation-wide district in their campaign, while the system promoted intra-party competition (Ramseyer and Rosenbluth 1993).

Despite of the disadvantage of the old mixed system, some small parties opposed to the proposal to change the nation-wide multimember district. These parties included the Clean Government Party (CGP), Minshato, Japan Communist Party (JCP), Niin Club, and Ichinokai. These parties were against the proposal for a number of reasons. First, they argued that the party oriented aspect of the closed list goes against the idea of practicing bicameralism (Asahi Nenkan 1982). They argued this because they thought that the elections of Lower House at the time promoted party based

elections.<sup>18</sup> As a result, making the Upper House election more party base elections would produce election results that are similar to those of the Lower House elections. Second, small parties argued that the proposed new system would constrain candidacy of particular group of candidates including those who are unaffiliated with a political party and those who belong to a small party that does not fulfill the requirement to become an official party. As a result, the proposed rule violated “fairness under the law” and “freedom of organization” (Asahi Nenkan 1982). Despite the opposition by the small parties, the proposal was passed in 1982 (Asahi Nenkan 1983). This was made possible because the LDP made an alliance with the New Liberal Club (NLC), which was composed of the former LDP members.

By the end of the 1990s, the LDP again proposed to change the system in the Upper House. This time, the LDP produced to use an open list PR system instead of the closed list PR system, while the multimember prefecture districts with an SNTV rule was retained. The LDP argued that the closed list PR rule deprived voters of the right to choose individual candidates. However, if an open list PR rule is adopted, it would give voters a chance to select a candidate since voters can choose a candidate on a party list. These votes in turn are used to determine the ranking of the candidates within the party list. Moreover, an open list PR rule can promote party based elections,

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<sup>18</sup> This may be a debatable argument since the Lower House of the time used a multimember district system with an SNTV rule where average district magnitude was between three and four. As a result, the SNTV system also promoted intra-party competitions, since major parties needed to place more than one candidate in each district to win a majority.

since these ballots for a particular candidate were counted toward a party that the candidate has an affiliation.

Although the argument sounded plausible, the real purpose of the LDP proposing the open list PR was to save the LDP from losing seats in future elections. The LDP was suffering from a declining level of party support in the 1990s, and the LDP leaders thought that they could save the LDP seats in the Upper House if the election was carried out under an open list PR rule. The LDP leaders expected that the new system would be beneficial to them since they could nominate well-known candidates, including professional sports players, academics, and commentators.

The proposal was passed in both houses in 2000, and the first election under an open list PR system was carried out in 2001. As a result, the Upper House currently uses a nation-wide district with an open-list PR rule and forty-seven multimember prefecture districts with an SNTV rule.

The Lower House started to use a mixed electoral system more than four decades after it was first used in the Upper House. The Lower House had used the SNTV system most of Japan's postwar period. Despite the use of the SNTV system for such a long period of time, it was changed because it was said to promote corruption. The problem with the SNTV system was that it promoted intra-party competition which was led to promote corruption since politicians depended on pork barrel type politics to win an election. The LDP leaders originally preferred to adopt the SMD system to replace the SNTV system since the SMD system would distribute more seats to the LDP relative



to their vote shares. Because of the benefits with the SMD system, the LDP leaders tried to adopt the SMD system as early as 1956.

As we can imagine, however, the political parties that would not benefit from the use of the SMD system opposed to adopt the SMD system. These parties include the Japan Socialist Party (Social Democratic Party after 1996) and the Japan Communist Party (JCP). Because of the resistance by the opposition parties, the LDP could not pass the bill at the time.

Being unable to pass the bill for the SMD system, the LDP leaders started to consider the use of a mixed system in 1962 along with a PR system (Reed and Thies 2001) since minor parties can secure their seats through PR elections. One of the mixed systems under the consideration was a system without a compensatory mechanism, while the other was with a compensatory mechanism. The former type was mainly supported by the LDP, while minor parties supported the latter type. However, some parties including the Clean Government Party (CGP) opposed any of these proposals. The First Advisory Committee was formed to promote the electoral reform. However, the parties never came to a consensus.<sup>19</sup> Despite the effort, the SNTV rule was kept unchanged, except that its districts were redrawn from time to time.

The desire to change the SNTV system, however, became prominent again in the early 1990s. This was especially because the on-going corruption was reducing the popular support of the LDP and was eroding political trust among the general public. Under the situation, the opposition parties,

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<sup>19</sup> Since mixed systems were first considered 1956, eight Advisory Committees were formed until 1992.

including the socialist party and the CGP came to a consensus that they would support the mixed electoral system with a compensatory mechanism. It is especially meaningful that the CGP agreed to adopt a mixed system with a compensatory mechanism this time.

However, the cabinet of the time that was led by the Prime Minister Miyazawa introduced the bill for the SMD plurality rule, even though the cabinet members expected the opposition by the socialist and the CGP members. It was also expected that some of the LDP members would oppose the bill. As a result, the bill did not pass. Moreover, some significant number of the LDP members left the party in protest and formed new parties. This led to the creation of the non-LDP alliance in the Diet. The only party that did not join the alliance was the JCP. Under the non-LDP coalition, the Lower House successfully adopted a mixed system that combines an SMD plurality rule and a PR rule in 1994. The first election under the mixed system was carried out in 1996.

The Lower House has experienced some changes in the rules since 1996. Before the second election in 2000, the LDP proposed to reduce the number of seats that were allocated by the PR section of the system from two hundred to one hundred and eighty. This was carried out in part to increase the level of public trust toward politicians. Japan has been in recession since the beginning of the 1990s, and a large number of businesses have been cutting the number of employees to lower the cost and make their businesses work more efficiently. The government needed to appeal to the public by

showing that it also was suffering with the public and was trying to make the government function more efficiently by cutting the number of the Diet members. Although this argument sounds convincing, it was proposed because it would increase the proportion of seats that was held by the LDP members.

### **Description of Japan's Mixed Electoral Systems**

Japan's mixed electoral systems have been labeled in many ways. For example, they are often referred to as parallel systems. This seems to be a direct translation of the Japanese name, *Heiritsusei*, in which *Heiritsu* means parallel, while *Sei* means a system. The name, *Heiritsusei*, is used basically among Japan specialists.

The Japanese mixed systems are also called mixed superposition systems (Massicotte and Blais 1999)<sup>20</sup> or mixed member majoritarian systems (Shugart and Wattenberg 2001). Superposition systems are defined as rules in which voters are subjected to two different electoral formulae that involve two independent sets of districts (Massicotte and Blais 1999). On the other hand, mixed member majoritarian systems are defined as systems that combine two different types of rules, such as a plurality rule and a PR rule (Shugart and Wattenberg 2001).

Between the two definitions, I use Massicotte and Blais's definition and call the Japanese mixed systems superposition systems for the purpose of

simplicity. This is because their definition encompasses all of the Japanese mixed systems into one group, while the definition by Shugart and Wattenberg does not.<sup>21</sup> According to the definitions above, the first mixed system that the Upper House adopted in 1950, as well as the system that was adopted in 1983, would be considered as a superposition system. On the other hand, the rule adopted in 1950 is not classified as a mixed member majoritarian system, while the rule that is adopted in 1983 is a mixed member majoritarian system. This is because the system of 1950 used two plurality rules, including the nation-wide multimember district system and the prefecture districts. Since both parts use a plurality rule, it will not be classified as a mixed member majoritarian system, even though the 1950 system combines two sets of rules that greatly differ in terms of the district magnitude.

Table 2-1 shows the electoral rules of Japan's Lower and Upper Houses. Among the mixed superposition systems that were used in Japan's postwar history, I will focus on two systems. The first is the 1996 Lower House election. The 1996 election is chosen mainly because of the availability of public opinion data. A survey for the 1996 election is publicly available while that for the 2000 election has not been available yet.

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<sup>20</sup> Massicotte and Blais (1999) define superposition systems in which "all electors are subjected to the two formulas and independent sets of districts are established for each formula."

<sup>21</sup> See Appendices 2-1 and 2-2 for the countries that fit into the two definitions.

**Table 2-1: Electoral Rules for the 1996 and 2000 Lower House Elections**

	LOWER HOUSE ELECTION	UPPER HOUSE ELECTION
Term of Office	Four years	Six years (A half of the Councilors' Membership expires every three years)
Number of Districts	SMD <sup>a</sup> : 300 PR: 11	MSD <sup>b</sup> : 47 PR: 1
No Seats	SMD: 300 PR: 200 <sup>c</sup>	MSD: 76 PR: 50
District Magnitude	SMD: 1 PR: 11	MSD: 1 to 4 PR: 50
Ballot	One ballot for a candidate Other ballot for a party	One ballot for a candidate Other ballot for a party
Double Candidacy	Allowed for candidates who belong to a party	Not allowed
Threshold for a Seat	None	None
Qualifications for Political Party	SMD: 1. Five representatives belong to the organization; or 2. Has more than 2% of vote share in any plurality or PR election in either Lower or Upper House.  PR: Qualifications 1 and 2 above, or 3. The number of cand. in each district exceeds 20% of the district magnitude.	MSD: 1. Five representatives belong to the organization; or 2. Has more than 2% of vote share in any plurality or PR election in either Lower or Upper House.  PR: Qualifications 1 and 2 above, or 3. The number of cand. on the PR list in the Upper House election exceeds 10.
Date Adopted	1994	1983

a: SMD: Single member district. b: MSD: Medium size district. c: The number was reduced to 180 before the 2000 election.

Source: Senkyoseido Kenkyukai

The second is the system that was used in the Upper House elections between 1983 and 1993. As discussed earlier, the mixed system in this period applied a closed list PR system. This period is chosen for the Upper House instead of the 2001 election for the same reason that I chose the 1996 election in the Lower House. A public opinion survey is available for an election in this period, while no survey is accessible for the 2001 election in which the Upper House started to use an open list PR system.

The table shows that even though certain features of electoral rules differ between the Lower and the Upper Houses, they seem to cause no serious problems for us to examine how Duverger's Law and the M+1 Rule may work in the two houses. More specifically, the seat allocation mechanism of the two houses is similar in how it utilizes a plurality rule and a PR rule. The Lower House allocates 300 seats by an SMD rule, while 200 seats are decided by a PR rule.<sup>22</sup> On the other hand, the Upper House allocates 75 seats by the multimember districts with an SNTV rule, while 50 seats are decided by a PR rule. In both houses, a plurality rule determines 1.5 times more than a PR rule. What this may suggest is that the ability of a PR rule to inflate the number of parties may be similar in the two houses.

One of the features that can cause the two houses to develop a different incentive pattern is in the use of double candidacies. Double candidacies refer to the practice in which candidates are allowed to run in both a plurality election and a PR election. The Lower House allows double

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<sup>22</sup> The number of seats in the PR portion in the Lower House has been reduced from two hundred to one hundred and eighty seats.

candidacies, while the Upper House does not. We can expect that the cost of parties in placing candidates in plurality districts would be lower if double candidacy is allowed. This may suggest that the Lower House is more inclined to inflate the number of parties than the Upper House.

In the Lower House elections, most of the political parties practiced double candidacy. Of those parties, the Liberal Democratic Party (LDP) and the Democratic Party of Japan (DPJ) utilized double candidacy the most in the 1996 election. About 80% of the LDP candidates who are on the PR list also entered into SMD elections, and 90% of the DPJ candidates did so.

Another feature that we should be aware of concerns district magnitude. The number of districts for the PR component in the Lower House is 11, while that in the Upper House is 1. What this may suggest is that a larger number of parties may exist in the PR section of the Upper House, compared to that of the Lower House. As a result, the inflation in the number of candidates in the plurality section of the system may be larger in the Upper House than the Lower House. This suggests that the intensity of the contamination effect may be stronger in the Upper House. However, since the Upper House uses an SNTV system for the plurality component of the election, whereas the Lower House uses an SMD plurality rule, the intensity of the contamination effect from the use of the nationwide district in the Upper House may cancel out. This is because the ability to reduce the number of parties in the SNTV election is lower than the SMD elections.

## **Election Results**

There may be a number of ways to describe election outcomes and to show what party systems Japan's superposition systems may have produced. I will mainly depend on two ways to describe election outcomes. One is to describe the election outcomes by looking at seat shares of each party as we see in regular news reports. Observing an election outcome in this way will be able to give us a basic understanding on what party systems are produced.

Although such basic reports are important, they are difficult to be used when we need to compare a large number of elections. The second way may make the comparisons easier by using an indicator such as the effective number of parties (Laakso and Taagepera 1979).<sup>23</sup> I will calculate both the effective number of legislative parties and the effective number of elective parties. If we use seat shares, the effective number of legislative parties is calculated, while the use of vote shares calculates the effective number of elective parties.<sup>24</sup>

The use of both types of effective number of parties is useful in this study since they can reveal the effects of mixed superposition systems in a meaningful way, since it is important to analyze how voters behave and how their votes are translated into seats. The idea supported in this study is that political parties have an incentive in placing candidates in the plurality section

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<sup>23</sup> The effective number of parties is calculated with the following formula:  $N=1/\sum p_i^2$  where  $p_i$  stands for fractional shares of each party. The effective number of parties is created based on the inverse of Herfindahl-Hirschman concentration index,  $\sum p_i^2$ , where  $p_i$  stands for the fractional share of  $i$ .

<sup>24</sup> The effective number of parties is often used to measure party systems. Another indicator is the Molinar index.



of superposition systems, and as a result, the number of candidates is inflated. The increase in the number of candidates leads to the inflation of number of parties since voters are willing to vote for marginal candidates.

If the idea is true, the number of legislative parties in the plurality component of superposition systems may not be greatly different from other regular plurality systems, although we may still see small differences. On the other hand, we should see a substantial gap between the plurality section of superposition systems and regular plurality systems when we use the effective number of elective parties. This is because the use of plurality rule in distributing seats in a superposition system will be unfriendly to marginal parties, and it creates relatively a large number of wasted votes in the plurality component of the system. The share of wasted votes is large in the plurality section of a superposition system because voters are more willing to cast their ballots for marginal candidates since marginal parties can survive through the plurality section of the system.

What this process suggests is that the number of legislative parties will not be inflated greatly in the plurality component of superposition systems, even when voters cast their ballots for marginal candidates. On the other hand, the number of elective parties as an indicator should show a substantial difference between the plurality section of a superposition system and a regular plurality system because it is calculated based on vote shares.

The election outcomes described with basic reports and the effective number of parties supports the idea that the plurality component of

superposition systems produces a larger number of parties than other regular plurality systems. This tendency is especially true when we look at the effective number of electoral parties as we expect.

Tables 2-2a and 2-2b and Tables 2-3a and 2-3b show the raw election results for the Lower and Upper House elections respectively. In Tables 2-2a and 2-2b, Japan's Lower House elections of 1996 and 2000 are reported, while Tables 2-3a and 2-3b report the results for the Upper House elections between 1983 and 1998. For the Lower House, both elections are important to be reported since the 1996 election will be used to carry out individual level analysis in later chapters. It was also the first superposition system in the Lower House. The 2000 election is important since it is the most recent election for Japan's Lower House. The report on the 1996 and 2000 elections together should give us a basic idea of how the superposition system have shaped the party systems to date. More importantly, however, these are the only two elections that were carried out under a superposition system in the Lower House.

The two years for the Upper House are selected for the same reason. The 1983 election is important since it is the first election under the superposition system with an SNTV rule and a closed list PR rule. The 1983 election is also important since it will be used for individual level analysis in later chapters. The 1998 election is selected because it is the last election under the closed list PR rule. As is the case for the Lower House elections,

**Table 2-2a: The 1996 Lower House Election Results**

	SEAT TOTAL	SEAT PR	SEAT SMD
LDP	239	70	169
NFP	156	60	96
DPJ	52	35	17
JCP	26	24	2
DSPJ	15	11	4
NPH	2		2
Minkairen	1		1
Unaffiliated	9		9
Total	491	200	300

**Table 2-2b: The 2000 Lower House Election Results**

POLITICAL PARTIES	SEAT TOTAL	SEAT PR	SEAT SMD
LDP	233	56	177
DPJ	127	47	80
CGP	31	24	7
Liberal Party	22	18	4
JCP	20	20	0
SDPJ	19	15	4
Conservative Party	7	0	7
Jiyu Rengo	1	0	1
Mushozokunokai	5	0	5
Unaffiliated	15	0	15
Total	480	180	300

**Table 2-3a: Number of Seats by Political Parties in the 1983 Upper House Election Results**

POLITICAL PARTIES	SEAT TOTAL	SEAT PR	SEAT SNTV
LDP	68	19	49
JSP	22	9	13
CGP	14	8	6
Minsha	6	4	2
JCP	7	5	2
Shinjiyukurabu Minshurang	2	1	1
Niinkurabu	1	1	
Fukushi	1	1	
Salaryman	2	2	
Others	2		2
Unaffiliated	1		1
Total	126	50	76

**Table 2-3b: Number of Seats by Political Parties in the 1998 Upper House Election Results**

POLITICAL PARTIES	SEAT TOTAL	SEAT PR	SEAT SNTV
LDP	44	14	30
DPJ	27	12	15
CGP	9	7	2
SDPJ	5	4	1
JCP	15	8	7
Liberal Party	6	5	1
Unaffiliated	26	0	20

the observation of the two elections should give us a basic idea on how party systems, or have not, changed over time.

In both 1996 and 2000 Lower House elections, a large number of parties were successful gaining seats in the Lower House, and we can observe that the superposition systems produced multiparty systems. This tendency seems to be kept unchanged between the two time points. Seven parties are successful obtaining a seat in the 1996 election, while there are 9 successful parties in the 2000 election. This tendency to produce a multiparty system is also true even when we look at the two parts of the system independently. The number of parties that were successful in obtaining seats in the plurality section of the system is 6 in the 1996 election, while it increased to 7 in the 2000 election. For the SMD plurality section, the number of parties with seats is 7 parties in 1996, while that in the 2000 election is 8 parties.

Table 2-3a and 2-3b also reveal that superposition systems produced a large number of parties in the Upper House. The system with SNTV and PR rules together produced 11 parties in the 1983 election, while 9 parties were produced in the 1998 election. The tendency to produce a large number of parties is seen even when we look at each part of the system separately as it is the case in the Lower House elections. The numbers of parties with seats in the plurality section are 9 and 6 parties in the 1983 and 1998 elections respectively. The multimember district with a plurality rule produced 8 in the 1983 election and 6 parties in 1998 election.

Table 2-4 gives us an idea where the Japanese superposition systems are located in terms of their legislative number of parties compared to those of other systems in the world. The comparison between Japan's superposition systems with the superposition systems of the world shows that Japan's Lower House produced results that are slightly larger than the world's average. The effective numbers of legislative parties in Japan's Lower House is 2.9, while that of the world is 2.8. The effective number for the Upper House is also larger than the world average. The figure for Japan is 3.1. The Upper House produced a larger number probably because it uses a multimember district system with an SNTV rule instead of the SMD plurality rule.

It is also worthwhile noting that the average effective numbers of legislative parties of corrective systems and PR list systems are the only systems that produced a substantially larger number of parties compared to superposition systems. The figures for corrective systems and PR list systems are 3.6 and 3.7.

The election outcomes in the table also suggest that the SMD part of Japan's Lower House produced a larger number of legislative parties than regular SMD systems of the world. However, the difference is not so large as we expected. A small gap is seen because the measurement is based on seat shares instead of vote shares. The effective number of legislative parties in Japan's Lower House is 2.2, while that in regular SMD systems is 2.0.



**Table 2-4: Mean Effective Number of Legislative Parties for Different Electoral Systems**

	TYPES OF ELECTORAL SYSTEMS	MEAN $N_s$
Japan's Superposition Systems	Lower House 1996, 2000 (Two Parts)	2.9
	Upper House 1983~1998 (Two Parts)	3.1
Mixed Systems from Other Countries	Lower House 1996, 2000 (SMD plurality section)	2.2
	Superposition (Two parts)	2.8
	Corrective (Two parts)	3.6
Standard Electoral Systems	SMD plurality	2.0
	Majority runoff	2.9
	Single nontransferable vote	2.5
	Single transferable vote	2.4
	List proportional representation	3.7

Note:  $N_s$  is the effective number of parties based on seat shares (Taagepera and Shugart 1989).

Source: The results for the mixed systems from other countries and standard electoral systems are from (Herron and Nishikawa 2000). Others are calculated by the author.

Although the difference of 0.2 is not so great, it is worthwhile noting that it still reflects a substantial difference in party systems. This becomes clear if we compare how a typical system with 2.0 is different from a system with 2.2. Table 2-5 is the election outcomes for the U.S. Congressional elections in 2000. This election produced two effective number of legislative parties for both House and Senate elections. When the effective number of parties is 2.0, seat shares are more evenly distributed between two parties. The U.S. case is a representative case of such a party system. Both the Republican Party and the Democratic Party obtained 50% seat shares. However, when the number of parties is 2.2, we tend to see some extra parties with a substantial number of seats in the legislature, as it is the case in Japan's Lower House. This is shown in Tables 2-2a and 2-2b.

The rest of the tables summarize election outcomes based on the effective number of elective parties. The difference between the plurality component of superposition systems and regular plurality systems is much more prominent when we look at the effective number of elective parties. Table 2-6a shows the results for the Lower House elections of 1996 and 2000 in Japan and those for the U.S. Congressional Elections. The figures are 2.9 and 2.7 for the Japanese case, while they are only 1.8 and 2.0 in the U.S. case. These figures reveal that the SMD plurality system so far produced a larger effective number of elective parties than other typical SMD plurality system, such as the U.S. case.<sup>25</sup>

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<sup>25</sup> The U.S. case is used in the analysis to represent the election results under the regular SMD plurality rule. It would be more appropriate, if I include cases from other countries. For

**Table 2-5: Seat Distribution and Effective Number of Legislative Parties in the U.S. 2000 Congressional Election**

POLITICAL PARTIES	HOUSE	SENATE
Republicans	220	18
Democrats	211	15
Others	2	
Total	433	33
ENLP	2.0	2.0

**Note:** ENLP stands for the effective number of legislative parties. The figure for ENLP is the same with or without the category of “others.”

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example, the Canadian election of 2000 produced about 2.7 effective number of electoral parties at the district level. The value in the Canadian case is closer to the Japanese case, compared to the U.S. case. This seems to be because the Canadian political environment is more prone to produce a larger number of parties because of the existence of French speaking people. As such, I avoid using the Canadian case to compare with the Japanese case.

**Table 2-6a: Effective Number of Electoral Parties in the SMD Plurality  
Section of Japan's Lower House and U.S. Congress**

ELECTIONS	ENEP
Japan's Lower House- 1996	2.9
Japan's Lower House- 2000	2.7
U.S. House	1.8
US. Senate	2.0

**Note:** ENEP stands for the effective number of electoral parties.

Table 2-6b shows the effective number of electoral parties for Japan's Upper House broken down by district magnitude. When the district magnitude is 1, the number of parties tends to be larger than 2. The figure for 1986 is 2.4, and it is 2.3 for the years of 1989 and 1992. The election returns from the Upper House also confirm that the effective number of elective parties is larger when a plurality election is carried out with a PR election.

The rest of election results also manifest that the number of parties in the plurality section of superposition systems are tend to be larger than other regular systems. Table 2-6c includes the results for Japan's Lower House under the SNTV system before it introduced a superposition system. The inclusion of these results makes comparisons of the number of parties between the plurality component of the superposition system and the regular plurality system possible since it controls for the differences in district magnitude.

When the district magnitude is 3, the smallest number of parties is equal to 4.8 in the superposition system, whereas the largest is 5.2. On the other hand, the smallest is 4.4 while the largest is 4.6 in the regular SNTV system (Table 2-6c). This shows that the difference is at least 0.2. It is also important to note that the regular SNTV election of 1993 when it produced 4.6 is the time when Japan was under a new party boom, and the election in 1993 should be considered to have produced a larger number of parties than typical years of elections.

**Table 2-6b: Effective Number of Electoral Parties in the Plurality Section of Japan's Upper House**

DISTRICT MAGNITUDE	1983	1986	1989	1992
1	2.4	2.4	2.3	2.3
2	3.5	3.3	3.4	3.2
3	5.2	4.9	4.8	4.9
4	a	a	a	a

**Note:** The figures are calculated without the vote shares of independent candidates.

**a:** There are only two districts.

**Table 2-6c: Effective Number of Electoral Parties in the Single Nontransferable Vote Systems – the Japanese Lower House Between 1983 and 1996**

DISTRICT MAGNITUDE	1983	1986	1990	1993
1	b	b	d	b
2	a	c	b	3.4
3	4.4	4.4	4.4	4.6
4	5.6	5.5		6.2
5	6.3	6.3		

**Note:** The figures are calculated without the vote shares of independent candidates. Some districts have the district magnitude of 6. However, they are not reported in the table since there are not enough cases

- a: There is only one district
- b: There are only two districts.
- c: There are only four districts.
- d: There are no cases.

## **Part II.**

### **Explaining Japanese Party System**



## Chapter 3

### Strategic Behavior of Political Parties

The French political scientist, Maurice Duverger was the first to identify mechanisms by which electoral rules affect the number of political parties. In his classic work on political parties, Duverger states that “the simple-majority single-ballot system favors the two-party system” (217). Duverger claims that the association is strong and the relationship comes close to “a true sociological law.” Similarly, the extension of Duverger’s Law, the M+1 Rule, is supported widely in the literature (Ishikawa 1981, Reed 1990, Cox 1997). The M+1 Rule generalizes Duverger’s Law in terms of district magnitude, M, and states that the number of parties will approach M+1.

The effectiveness of Duvergerian equilibria, however, is not without a limit. The plurality component of superposition systems inflates the number of parties more than Duvergerian equilibria suggest.<sup>26</sup> When a single member district (SMD) system with a plurality rule is combined with a proportional representation (PR) rule, the SMD part of the system tends to produce a multiparty system instead of a two party system. Similarly, the use of multimember districts with a single nontransferable vote (SNTV) rule leads to the creation of the number of parties that is greater than M+1.

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<sup>26</sup> The argument that Duverger’s Law does not work in mixed superposition systems can be extended to other mixed systems, such as corrective systems. However, the inclusion of corrective systems at this point will be beyond the reach of this dissertation and will not be discussed here.

The inflation of the number of parties originates in the change of behavior that takes place among political parties in the plurality component of superposition systems. Political parties place a greater number of candidates than the equilibria suggest. The number of candidates will be larger than two when superposition systems adopt an SMD rule, while it will exceed  $M+1$  with an SNTV rule.

In this chapter, I will discuss the mechanism in which superposition systems change the behavior of political parties, thereby creating the origin of the violation of Duverger's expectations. I will do so especially by focusing on a certain aspect of Duverger's Law, namely a psychological effect. The explanation of Duverger's Law is composed of two factors, including mechanical and psychological factors. The mechanical effect refers to how an electoral rule translates votes into seats, while the psychological effect reflects how political actors may react to the mechanical effect. Since Duverger's Law works based on the two effects, I believe that the mechanism of how mixed superposition systems violates Duvergerian equilibria can be revealed by analyzing how the two effects work differently between the plurality component of superposition systems and regular plurality rules.

To achieve the above, I will have a detailed discussion on the two effects under regular electoral systems first. I will then extend the analysis to superposition systems and show that the psychological effect does not work in the same way in the plurality section of mixed electoral systems as it does in regular plurality systems. I will especially focus on the presence of the

contamination effect and show how the psychological effect on political parties is altered by the contamination effect.

There is another important task that needs to be carried out in this chapter. A particular assumption of the contamination effect needs to be satisfied. The contamination effect works based on an assumption that political parties can place candidates to plurality districts where they have little chance of winning or that candidates voluntarily enter into these districts. The basic argument of the contamination effect is that political parties create an incentive to place candidates in the plurality districts of superposition systems since political parties can gain extra vote shares in corresponding PR districts. By doing so, political parties can maximize their party's seat gains collectively.

However, the attempt of political parties to place candidates may be resisted by some candidates. It is often argued that politicians are ambitious and seek to maximize their chance of winning (Dawns 1957, Schlesinger 1991). If this describes a true characteristic of candidates, we notice that it is irrational for them to enter into a district where they have little chance of winning. Instead, candidates will try to run in a district where they would have more popular support, or they may simply refrain from entering.

More specifically, a candidate's party may be popular in urban areas than rural areas. This candidate may want to enter into a district that is located in an urban area where he has a better chance of winning and wants to avoid a district, which is in an rural area. There may also be other candidates from the same party who may want to enter into an urban district.

Under such circumstances, the party would have many candidates who would want to enter into an urban district, while they have no candidates who would want to enter into a rural district. Under the condition, the political party may have to reduce the number of candidates to one to avoid intra-party competition in urban districts, while it has to encourage some candidates to enter into rural districts. The above suggests that it is necessary to reveal how political parties overcome the conflict with their candidates.

The purpose of this chapter is two fold. First, I will discuss how the psychological effect on political parties is contaminated by the presence of the PR component, and as a result, political parties try to maximize their vote shares by placing more candidates than Duverger's Law expects. Second, because of the contamination effect, political parties try to place some of their candidates into a plurality district where they have little chance of winning and may face a resistance by the candidates, party leaders have a mechanism that helps to place candidates, so the contamination effect is maintained. Before I get into these two aspects, I will discuss how Duverger's Law works in general. I will also extend the discussion to the M+1 Rule.

### **Duverger's Law**

As it was briefly discussed earlier, Duverger explains that simple-majority SMD systems favor two party systems because of two factors: a mechanical and a psychological factor. The mechanical effect refers to how votes are translated into seats. Because of the use of a plurality rule and

single member districts, small parties' seat shares are likely to be smaller than their vote shares, and as a result, minor parties are usually "under-represented." For example, if there are three parties, one being a minor party and the other two being major parties, the minor party has difficulty in winning a seat since their votes may be spread across different plurality districts.

The presence of such a mechanical effect influences political actors' behavior, leading to the creation of a psychological effect; another effect which hurts small parties even further. The minor party will find that the system is mechanically working against the party because of under-representation. Under such circumstances, the minor party would either try to merge with one of the major parties or refrain from entering. It is also conceivable that political contributors, such as interest groups, stop contributing to the minor party or the members of the party, since they realize that the candidates from the minor party have little chance of winning a seat.

Even when marginal competitors enter into a district by overcoming these weaknesses, plurality SMD systems will further give disadvantages to minor parties. More specifically, voters in the simple SMD system soon find out that their votes are wasted every time they vote for the third party. This in turn leads voters to start transferring their ballots to "the less evil of its two" (226). Thus voters are polarized into two camps. As a result of the mechanical and psychological effects working together, simple SMD systems create a political dualism in a party system. Duverger also points out that the process of polarization may take place overtime since voters are at first do

not know what party may be trailing. However, as soon as voters find out who is trailing, they start transferring their votes to one of the two major parties.

The above argument can be extended to other plurality systems, such as an SNTV rule. With a multimember district rule, the number of candidates should approach  $M+1$ . The political parties that are ranked lower than  $M+1$  in their popularity should be considered marginal competitors. As an illustration, if the district magnitude is 3, the number of candidates in districts should be close to 4. Other candidates who are ranked 5 or lower would have difficulty in surviving in the system because of the mechanical and psychological effects.

Duverger (1954) identifies another relationship between electoral systems and party systems. Duverger states that “the simple-majority system with second ballot and proportional representation favor multi-partism” (239). Although how a simple majority rule with the second ballot system and a PR rule create a multiparty system is different, we notice that they both do not force political actors to create a political dualism in a party system that the simple SMD system does.

For example, a majority is required to win an election under the two-ballot SMD system. If no candidates obtain more than 50% vote share, the system requires another round of the election between the top two candidates. With this process, minor parties do not have to be concerned about under-representation by the mechanical effect in the first round of the election, since the second round takes place frequently with a two-ballot system. Moreover,

they can always regroup in the second round of the election, if it is necessary. Voters also do not have to be concerned about wasting their votes under the system. Voters who prefer a minor party can vote for the minor party in the first round. If the second round takes place, they can then consider voting for one of the two major parties.

Under PR systems, the mechanical effect is also less of a concern for minor parties since the system translates votes into seats more proportionally. As is the case under the second ballot SMD system, voters do not have to worry about wasting their votes in PR rules. Moreover, political contributors may not stop supporting small parties in these systems. As a result, PR systems create a multiparty system.

Duverger's findings in the above are now recognized as Duverger's Law and Hypothesis: the former refers to the association of the plurality SMD rule with two party systems, and the latter refers to the association of the second ballot SMD rule and a PR rule with multiparty systems. These propositions by Duverger and his explanation of how the propositions work can especially give us insights into how mixed superposition systems may shape party systems. If we can find out how the mechanical and psychological effects work in each part of mixed electoral rules, we will have a better understanding in how the electoral process under these rules influences party systems. In the following section of this chapter, I will discuss how Duverger's Law is violated in the plurality component of superposition systems with more detail.

## **Duverger's Law and Mixed Superposition Systems**

As suggested earlier, how the psychological effect is influenced in the plurality component of superposition systems is the key to the explanation of the increased number of parties. This is evident, if we look at each part of superposition systems and compare the effects of each part with regular electoral rules. More specifically, the mechanical effect works similarly between the PR component of a mixed system and a regular PR system. Votes are translated into seats proportionately in the PR section of a mixed system and in a regular PR rule. The mechanical effect between the plurality component of superposition systems and regular plurality systems also works in the same way. They both translate votes into seats in a way that is not friendly to small parties.

The psychological effect in the PR component of a mixed system and a regular PR system also works similarly. Votes are translated into seats proportionately in the PR section of mixed systems. Under these conditions, minor parties do not have to be concerned about under-representation. Voters who prefer a minor party also do not have to transfer their votes to other parties that are more likely to win an election.

Only the psychological effect in the plurality section of mixed systems works differently from the standard plurality systems. More specifically, the psychological effect is inhibited from working in the plurality part of the mixed systems in the same way as it does in a regular plurality system. This is



because the PR component of the system is carried out simultaneously with the plurality section, while the presence of the PR election changes political parties' strategies in placing candidates.

The changes in parties' strategies happen because political parties perform better in the PR election by placing candidates in plurality districts. If political parties place their candidates in plurality districts, their candidates will be physically present in the plurality districts during the election campaign. Their presence would be reported in local newspapers and TVs. A large number of posters would also be put up on the streets of the districts. More importantly, each candidate would carry out a campaign with a party label. As a result, parties that place their candidates are more likely to be recognized by voters in PR districts. This recognition leads to an improvement of party performance.

Moreover, some voters may pay attention to the plurality component of an election first and decide whom to vote for in the PR component. They may then select a party in the PR component that is consistent with whom they voted for in the plurality race.

It is possible that political parties or party leaders may not realize the interactive effect between the two parts of the mixed system in the first election. However, they would soon recognize the effect and try to place their candidates even when their candidates have little chance of winning an election.

A significant number of politicians indeed have noticed the effect already. For example, Hiroshi Kumagai, the deputy secretary general of the Democratic Party of Japan who was the head of the election committee for the 1996 Lower House election, states that by placing a candidate in an SMD plurality district, a vote share for the corresponding PR district would be increased substantially.<sup>27</sup> Moreover, Kumagai states that the PR district without a candidate in the corresponding SMD district did the worst in gaining a vote share compared to other PR districts.<sup>28</sup> Kumagai also suggests that a similar effect exists in the Upper House election in which a mixed system with an SNTV rule is applied. Kuniji Toda who is a councilor from the Liberal Party also agrees that political parties can gain an extra share of votes by placing a candidate in plurality districts.

In short, the presence of a PR rule is expected to contaminate the psychological effect of Duverger's Law in mixed superposition systems. Political parties develop an incentive to place candidates even when their candidates have little chance of winning a seat. As a result, the number of candidates in the plurality section of mixed systems is inflated. This suggests that the number of candidates will also exceed an  $M+1$  number of candidates, when an SNTV rule is used.

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<sup>27</sup> The comment was obtained by conducting a face-to-face interview with Hiroshi Kumagai.

<sup>28</sup> The comment was also obtained by an interview with Kuniji Toda.

## **Contamination Effects and Candidate Nomination Process**

The contamination effect works based on the idea that political parties develop a motivation to place candidates in plurality districts in which candidates may have little chance of winning. This suggests that some candidates have to enter into a district where they may not want to enter. The argument of the contamination effect then needs to be reconciled with the idea that candidates are rational actors and try to maximize their chance of winning a seat.<sup>29</sup> I argue that the entrance into these districts do not necessarily eliminate the chance of winning for these candidates. Instead, it may help their career as a politician. There are a number of reasons why the entrance into a plurality district may help candidates. The first reason has to do with the fact that elections are repeated over and over and are not a one-shot game. Under the condition, candidates may understand a loss in a plurality district election as a necessary step to become a successful politician who will be able to win in succeeding elections.

The notion of repeated games in rational choice theory seems to support this idea. A number of scholars who practice rational choice theory suggests that games are usually repeated in politics (Morrow 1994). As a result, political actors may make a decision that would look as if they made an

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<sup>29</sup> The information on how candidates are put up is found in different ways. The easiest way is to find a written document that describes a candidate nomination process in each party. There are three parties that have the information in their constitution. These parties include the Liberal Democratic Party (LDP), Social Democratic Party of Japan (SDPJ), and Democratic Party of Japan (DPJ). For other parties, the information was obtained by writing to the party's headquarter directly. The information for the Japan Communist Party (JCP) was obtained in this way. Additional information was found in the documents that are available through each party's home page. The information is difficult to be obtained for some parties

irrational choice. However, if we consider the fact that games are repeated, their action does not look as irrational. We can apply the notion of repeated games to elections since elections are carried out repeatedly. If candidates see that the chance of getting elected in a succeeding election increases by entering into a plurality district, candidates may be more willing to enter.

This may be especially applicable to young politicians. A young ambitious politician may be told to enter into a plurality district where there is a popular incumbent. She may think that there is little chance of winning a seat for the first time she enters. However, the incumbent politician may be old and will be replaced by another candidate sooner or later. When that replacement takes place, the young politician may have a great chance of winning a seat, if she has carried out an election campaign in previous elections. This is because the level of recognition by her constituents may be higher.

Kuniji Toda, a councilor from the Liberal Party in Japan, suggests that young politicians are indeed more willing to enter into districts where they have little chance of winning.<sup>30</sup> Toda mentions that this is because they may understand that they would have to go through a loss before they actually win a seat. If this is how candidates see winning an election, they may perceive a benefit in entering a plurality district.

The above does not mean that the concept of repeated elections is nonexistent in regular plurality elections. The difference between the plurality

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since these parties do not exist anymore and the documents that give us the information are not available.

component of mixed systems and regular plurality elections rests in the fact that small parties are more likely to survive in a longer term in mixed systems than in regular plurality systems because of the use of PR rules. As a result, candidates in mixed systems do not have to worry about their party's survival as much as in regular plurality systems.

The second reason why political parties can place candidates in the plurality component of mixed systems has to do with the fact that election outcomes are not always easy to predict and may magnify the perceived chance of winning in an election. For example, there is always a possibility that even a strong incumbent may lose. We can see such an uncertainty of an outcome in recent elections, including the 2000 Lower House election.

Masayoshi Takemura, who is a former Minister of Finance, lost his seat in the 2000 Lower House election. Takemura was also the chairman of a party called the New Harbinger Party and was a well-respected politician. His loss was reported in news media as a surprise. If a politician like Takemura can lose in an election, candidates may see a chance of winning, even in a district where there is a strong incumbent. Moreover, the perceived chance of winning will be magnified when we think about the fact that elections are repeated, since an unexpected outcome may take place in one of the many following elections.

The third aspect that promotes candidate entries to plurality districts has to do with how political parties increase the chance of winning for their

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<sup>30</sup> The comment is obtained by an interview.

candidates by using double candidacy. The Public Office Election Law provides political parties an ability to promote the placement of candidates. Candidates who belong to a political party are allowed to run in both parts of the system under the law. With the use of double candidacy, political parties can promote candidates' entrance into plurality districts since political parties usually decide the candidates' ranking on the PR list. Because parties have a control over the ranking, candidates who are on the PR lists especially have an incentive to follow their parties' suggestion that they should enter a plurality district.

Hiroshi Kumagai, the deputy general secretary of the Democratic Party of Japan, states that political parties have difficulty in placing candidates where they have little chance of winning. However, double candidacy helps parties to place candidates in these difficult districts by using double candidacy.<sup>31</sup> In fact, a large number of political parties practices double candidacy. Kumagai's party, the Democratic Party of Japan (DPJ) is one of them. The examples of other parties would be the Liberal Democratic Party (LDP), the Liberal Party, the New Progressive Party, the New Harbinger Party, and the New Japan Socialist Party.

Finally, political parties have tremendous power over the decision on how candidates are placed in plurality districts. If political parties have control over candidate actions, political parties can force some candidates to enter into districts. It is true that candidates can run as an independent candidate

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<sup>31</sup> The comment is obtained by an interview.

who does not belong to a political party, so that they can threaten their parties. However, if candidates do not belong to a political party, they will face many disadvantages in elections. These candidates do not have as much government support as other candidates who belong to a political party.

In particular, how much individual candidates can campaign is more limited if they are not endorsed by a party. For example, the government provides a certain length of airtime on television to candidates who belong to a party for their campaign, whereas candidates without a party are not given such a privilege. Similarly, the number of posters that candidates can put up will be reduced for those candidates who run as an independent candidate (Ozawa 1997). Under such circumstances, candidates are expected to stay with a political party and, as a result, these benefits give political parties a leverage over the placement of candidates.

What is more, how political parties can exercise control over candidates are also suggested in party constitutions, which specify party activities in elections. For example, the Committee for Election Strategy and the Permanent Secretariat in the Democratic Party of Japan (DPJ) direct a wide range of election related activities.<sup>32</sup> The Committee for Election Strategy in the DPJ nominates candidates and the Permanent Secretariat confirms the nominations.<sup>33</sup> The Social Democratic Party also has the

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<sup>32</sup> The translation, the Executive Standing Committee, is made by the author and is not an official translation. It is originally called "Jyoninkanjikai."

<sup>33</sup> The Committee for Election Strategy is set up by the DPJ's National Convention, and the members of the committee are selected by the chair of the Committee who is appointed by the DPJ's Diet members. For the Lower and the Upper House elections, the Permanent Secretariat decides the ranking of the nominees for the PR section. The Permanent

Committee for Election Strategy.<sup>34</sup> The final approval for the selection of candidates is made by the Executive Standing Committee of the SDP.

For the case of the Japan Communist Party (JCP), the party's control over the candidate nomination process is not specified in the constitution. However, the constitution states how the party is organized and suggests that the party has a control over the candidate nomination process. The Constitution of the JCP states that the party follows the principle of "democratic centralism" (Article 14). The centralization of the organization gives power to the JCP. More specifically, the Central Committee is the executive organization of the JCP that has control over wide range of party activities (Article 25). The area of control also includes the candidate nomination process.<sup>35</sup>

The constitution of the LDP does not state who finally confirms the nomination, even though it states that the LDP has the Election Strategy Headquarters (Article 51- 54) in its constitution. However, the LDP has local organizations that coordinate candidate placement. The LDP has prefectural branches that coordinate candidate nomination and give advice to candidates. When they do so, they follow the LDP Headquarter's request.

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Secretariat also has the authority to cancel any of the nominations (Article 20). The translation, "National Convention" is done by the author. The original is "Totaikai". The translations, "National Federation" and "the Committee for Election Strategy" are made by the author and are not official translations, either. The original in Japanese are "Zenkoku kaigi" and "Senkyo Taisaku linkai."

<sup>34</sup> The Committee for Election Strategy is set up by the party's National Federation (*Zenkoku ren-go*). The translation, "the Committee for Election Strategy" is made by the author. The original in Japanese is "Senkyo Taisaku linkai."

<sup>35</sup> The Executive Standing Committee makes decisions on candidate nomination for both the Lower and the Upper Houses. The translation, the Executive Standing Committee, is made by the author. It is originally called "Jyoninkanbukai."



For example, *Asahi Shimbun Senkyo Hombu* (1997), a division of *the Asahi Newspaper* that specializes in elections, reports that in the 1996 Lower House election, the Shimane prefecture had four potential LDP candidates, while there were only three SMD districts in the prefecture. The candidates were Yoshio Sakurauchi, Hiroyuki Hosoda, Noboru Takeshita, and Hisamoto Kamei. The LDP Shimane Prefectural Convention<sup>36</sup> (*Jimintokenren*) negotiated with Yoshio Sakurauchi and requested that he pulled out of the SMD district race and run in the PR race. Since Sakurauchi pulled out of the SMD race, the remaining candidates could run in the three SMD districts in the Shimane prefecture.

Furthermore, the evidence of the LDP's control over the candidate nomination through its local organization is seen in *Weekly Jimin*, the magazine that the LDP publishes weekly. It reports a meeting that was held in Kyushu, one of Japan's four main islands, which is located in a southern part of Japan and corresponds with one of the twelve PR districts. The meeting was held by Kyushu Block Chief Secretaries and Kyushu Block Secretary General (*Kyushu Block Kanjicho, Jimuchokucho Kaigi*). The meeting was joined by three LDP members who were from the LDP headquarter. The report suggests that the LDP's headquarter has the ultimate control over the candidate nomination process. It describes the struggle the LDP's local organizations went through because they often have to coordinate LDP

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<sup>36</sup> The translation, "the LDP Shimane Prefectural Convention" is not an official translation.

candidates in their districts and suggest some of them to pull out of a district, as it was the case in the Shimane prefecture.

It is also important to note that a coalition among some parties can reduce the number of parties. This is especially true if political parties have a control over the candidate placement. If the creation of a coalition happens successfully, the number of candidates can be reduced to the level where Duvergerian equilibria predict. However, creating a coalition can be difficult since it requires coordination and may not be achieved.

For example, the alliance between the LDP and the CGP in the 2000 Lower House election is characterized as a failure of such an attempt. The LDP and the CGP agreed not to place candidates in seventeen districts if the other party decides to place their candidate. The LDP placed three candidates in these districts, while the CGP placed ten candidates. Despite the effort to coordinate between the two parties, the CGP candidates did not win a seat in five districts. The reason why this occurred was that some of the LDP candidates who could not get support from the LDP ran as unaffiliated candidates and won. Kensaku Morita, a former actor, who ran as an unaffiliated candidate in Tokyo is a representative case that destroyed the coordination between the two parties.<sup>37</sup>

In summary, mixed superposition systems create an incentive among political parties to place candidates, even when they have little chance of

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<sup>37</sup>See Yomiuri Shimbun (June 26, 2001).

winning. By placing candidates in plurality districts, political parties can gain extra vote shares in the corresponding PR districts. Candidates may resist against parties' attempt to place them into a plurality district where they have little chance of winning. Even though small parties may have a limit in their resources to place candidates, the fact that superposition systems motivate political parties to place more candidates contribute to the increase in the number of candidates. Under the conditions, if voters cast their ballots in these extra candidates who would have not been placed, if an election is carried out in a regular plurality system, the number of parties will be larger than Duverger's Law or than the M+1 Rule may predict.

## **Chapter 4**

### **Strategic Behavior of Voters**

Chapter 3 showed how political parties inflate the number of *candidates* in the plurality section of mixed superposition electoral systems. To support the idea that the plurality component of a superposition system produces a larger number of parties than Duverger's Law predicts, the effects of the increased number of candidates on voters' behavior are shown in this chapter. If the increased number of candidates leads more voters to behave strategically by not voting for marginal candidates, we can conclude that the plurality component of the system will produce a Duvergerian outcome. On the other hand, if the increase leads them to vote for marginal candidates, it will produce a non-Duvergerian outcome.

The concept of strategic voting is described by Duverger (1954) as the voters' tendency to avoid "wasting" their votes. Duverger's argument is especially relevant to elections under single member district (SMD) systems. According to Duverger, constituents often avoid "wasting" their votes in a plurality SMD system by casting a ballot for a candidate who has manifestly no chance of winning. By engaging in strategic voting, voters transfer their ballots from the most preferred competitor who has little chance of winning to a less preferred but more competitive candidate. In this way, voters can minimize the probability of creating the worst outcome.

By studying mixed electoral systems, many scholars conclude that strategic voting exists in countries that use a mixed system. The studies of Japan's mixed systems are no exceptions to this rule. Kohno (1997) finds evidence of strategic voting in Japan's superposition system by comparing how voters behave within the two segments of the system. This approach is followed because how voters behave in the PR section can be used to assess the existence of strategic voting in the plurality component. Voters behave sincerely in the PR section of the system since they are less likely to waste their votes under that system. Contrarily, voters are more likely to vote strategically in the plurality section since they may waste their ballots if they vote sincerely. Under such assumptions, the assessment of strategic voting is possible by comparing how voters behave between the two systems.

With this approach, Kohno studies three political parties, including the Liberal Democratic Party (LDP), New Frontier Party (NFP) and Japan Communist Party (JCP) and finds that a major party, such as the LDP, gains more vote shares in the SMD part of the system, while there is no such tendency is found in a minor party like the JCP.

Similarly, Reed (1999) analyzes the existence of strategic voting in the 1996 Japanese Lower House election. Reed also compares voters' behavior between the PR section and the plurality component and finds "strong evidence for strategic voting: candidates with a good chance of winning

receive more SMD than PR votes, and those with little chance of winning receive more PR votes” (257).<sup>38</sup>

As these studies may demonstrate, it is tempting to support the idea that strategic voting exists in mixed superposition systems. This is because the existence of strategic voting is supported in regular SMD plurality systems both theoretically (Farquharson 1969, McKelvey and Ordeshook 1972) and empirically (Abramson et al. 1992 and 1995, Kim and Fording 2001). If a mixed system is composed of an SMD plurality rule and a PR rule, it may look rather natural that the SMD part produces strategic voting. Moreover, Scholars have found strategic voting in other electoral rules, including majority runoff systems (Cox 1997), multimember district systems with a single non-transferable vote system (SNTV) (Reed 1991, Cox 1997), and approval voting (Cox 1984, Niemi 1984).

Perhaps, the most important evidence that leads scholars to support the occurrence of strategic voting in superposition systems, though, is that a significant number of studies support the presence of strategic voting in other mixed systems, including the one that is used in Germany (Barnes et al. 1962, Fisher 1973, Jesse 1988, Bawn 1999, Cox 1997). As discussed in an earlier chapter, the German mixed system is called a corrective system (Massicotte and Blais 1999) since the PR section of the system is used to “correct” a disproportionality that is caused by the use of a plurality rule. Finding strategic voting under various electoral rules, including corrective

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<sup>38</sup>Onizuka (2002) also finds the presence of strategic voting in the Japanese mixed superposition system.

systems, seems to lead scholars to think that strategic voting should be present in mixed superposition systems. Indeed, Reed (1999) states that the existence of strategic voting “should come as no surprise” (258).

Although existing studies on strategic voting in mixed systems consistently report that strategic voting is evident, we wonder if strategic voting takes place in mixed systems as much as the previous studies suggest. This occurs for two reasons. First, these studies have not considered how the two components of the mixed systems may interact with each other so that they may produce outcomes that were not expected originally. Specifically, scholars have not considered how the presence of PR in the system may contaminate the effect of plurality systems that we usually see. Hence, the underlining logic of strategic voting in regular plurality systems may not be applicable to the plurality component of superposition systems. This is true for both superposition systems and corrective systems.

Second, the previous studies on mixed superposition systems measured strategic voting only at the aggregate level, even though there are some studies with individual level data on regular plurality systems (Cain 1978, Abramson et al. 1992 and 1995). For example, to study strategic voting in a superposition system, Kohno uses election returns that are aggregated at the prefecture level in Japan, while Reed uses those that are aggregated at the candidate level. Since strategic voting is an individual-level phenomenon, assessing strategic behavior at an aggregate level needs a caution since it

may cause an ecological inference problem (Kramer 1983, King 1997).<sup>39</sup>

Moreover, the studies on mixed corrective systems were also carried out by using aggregate level data (Fisher 1973, Barnes et al. 1962, Cox 1997, Bawn 1999). This suggests that the empirical support of strategic voting in mixed systems may not be as firm as we originally thought.

One of the specific purposes of this chapter then is to investigate voting behavior in superposition systems and improve on previous studies by especially focusing on the contamination effect by abandoning the assumption that the two segments of mixed systems do not interact with each other in influencing how voters behave. By doing so, I will show that the contamination effect creates conditions in superposition systems that reduce the occurrence of strategic voting. The other problem which should be dealt with is the ecological inference problem. However, I will deal with the question in one of the empirical chapters (Chapter 6) since it is more related to measurement issues.

In the following sections, I will discuss how the contamination effects in superposition systems create voting conditions that prevent voters from behaving strategically and how the use of aggregate level data can overestimate the occurrence of strategic voting. Before turning to the primary discussion, however, I will review political parties' behavior briefly and develop how voters may make decisions given specific conditions. Voters' behavior will be preconditioned by how political parties place their candidates,

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<sup>39</sup> Both Reed (1999) and Kohno (1997) point out that there is a potential problem in using aggregate level data to assess strategic voting.



so that it is important to analyze the condition in which voters may make decisions.

More specifically, as Chapter 3 shows, the expected pattern of candidate placement by political parties changes, when we take the contamination effect into account. The expected number of candidates increases in the plurality component of the system when the contamination effect is present. The increase in the number of candidates in turn is expected to influence what candidates are available for voters to choose and thus influence voters' behavior as well.

In addition to analyzing voters' decisions to cast their ballots for marginal or top running candidates, I will also analyze voters' decisions to abstain from voting. An abstention as a choice needs to be investigated since the idea that voters would vote sincerely in the plurality section of a mixed system may be undermined if we consider the fact that an abstention as a choice is also available to voters. For voters whose most preferred candidate happens to be trailing in the plurality component of the election, an abstention as a choice may be dominant over sincere voting.

### **Strategic Voting and Contamination Effects**

If we assume that the two components of a mixed system work independently, voters are expected to behave strategically in the plurality component of the system while they would vote sincerely in the PR component of the system. That is, voters would behave as if they vote in two

separate elections. In other words, voters make a decision under the conditions which work against marginally performing candidates. Under such circumstances, a voter engages himself in strategic voting by casting his ballot for a less preferred candidate, even when he happens to prefer a marginal candidate.

More specifically, a voter can maximize his expected utility by voting for one of the top candidates in the plurality election, while he votes for the most preferred competitor in the PR section of the election. The notion of expected utility is widely used in political science. Utility measures actors' preferences over outcomes. An expected utility is the probability of producing an outcome multiplied by its associated utility (Morrow 1994). If expected utility for a particular competitor is high, voters are more likely to cast their ballot for the competitor.

As an illustration, if there are three competitors whose popularity is  $C_1 > C_2 > C_3$ , and a voter's preference ordering is  $C_3 > C_2 > C_1$ , the particular voter would vote for  $C_2$  to avoid the worst outcome if the plurality section of the system applies SMD system. However, the voter will vote for  $C_3$  in the PR district election.

Similarly, if the plurality component uses a multimember district system, and if there is an  $M+2$  number of candidates in a plurality district, a voter will avoid voting for the  $M+2^{\text{nd}}$  running candidate, if she is trailing in the district. Thus, strategic voting takes place among voters who happen to prefer the  $M+2^{\text{nd}}$  running candidate, although these voters are still expected to vote

sincerely in the PR component of the system. What the above suggests in terms of mixed systems is that voters would engage in strategic voting in the plurality part, although they vote sincerely in the PR component.

However, if we take the contamination effect into account, our expected model of how voters behave will be altered. The contamination effects of mixed systems create some unique conditions that may not be observed if each component of the system is carried out separately. More specifically, voters will be influenced by being in the condition that a mixed system may create. This suggests that we need to consider the effects of mixed systems by two phases. The first is to consider what kind of voting conditions mixed systems may create. The second is to analyze how voters may behave under different voting environment.

For the voting conditions, as Chapter 3 suggests, the number of candidates will be increased in the plurality section of mixed systems. If a mixed system combines a plurality SMD system, the number of candidates will be larger than two, while it will be larger than  $M+1$  if a mixed system is composed of multimember district system. Such an increase in the number of candidates should influence the patterns of voting that are available to voters and how they choose to vote.

More specifically, the increase in the number of candidates creates two patterns of voting conditions. Some voters find a candidate who is from their most preferred party, while others do not. As it was suggested, political parties create an incentive to place their candidates in the plurality districts.

However, this does not mean that all parties can place their candidates in all districts since their ability to place their candidates varies from party to party. Large parties are more likely to place candidates in most of the districts, whereas small parties cannot do so because their resources are more limited. Moreover, small parties may make an arrangement with other parties in deciding where to place their candidates, so that they can secure a seat in some districts. As a result, voters who prefer a small party may not see a candidate who is from their most preferred party.

The above does not suggest that the existence of such two patterns of voting conditions do not exist in regular plurality systems. However, an increase in the number of candidates is expected to spread voters' party preferences. This will lead to the increase in the number of voters who do not find their most preferred candidate, and this, in turn, magnifies the importance in differentiating the two voting conditions in mixed systems.

If voters are in the condition in which they do not find their most preferred candidate, they are forced to transfer their votes to other parties. If this happens, voters are more likely to transfer their votes to the most preferred candidate who is available. Although this may look as if they voted strategically at the aggregate level, this pattern of behavior does not fit with the definition of strategic voting since voters should be considered to have voted for the most preferred candidate who is available in their district.

The other pattern of candidate placement for voters is that voters find a candidate who is from their most preferred party. This pattern actually creates

an opportunity for voters whose most preferred candidate is less likely to win to cast their ballots strategically. Indeed, the increase in the number of candidates suggests that a higher portion of voters will prefer one of the marginal candidates, compared to the case in which a small number of candidates are running in districts. This may lead us to think that a substantial number of voters may vote strategically.

However, in the plurality component of the mixed system, such strategic voting is less likely to occur. Cox (1997) specifies the conditions under which strategic voting is unlikely to occur. One of the conditions is when voters are not oriented with a short-term instrumental motivation. Some voters may think that their most preferred candidate may have a chance of winning when elections are repeated, even though the candidate does not have a chance of winning in a current election. If this is how voters perceive, they are more willing to vote for marginal candidates.

If we consider a mixed system with the contamination effect, it is likely that the system creates a longer-term incentive among voters. This is because small parties can survive because of the presence of the PR election, so that small parties would not at least disappear quickly as they may do in a regular plurality SMD election. As a result, voters may be more willing to support their most preferred candidate to keep them in the plurality section of the system, hoping that the candidate would win in a future election.

There is another reason why mixed systems may promote sincere voting for those voters who have an opportunity to engage in either sincere or

strategic voting. Cox suggests that when voters have difficulty in guessing who is trailing in the district, voters are more likely to vote sincerely. If we apply this idea to the plurality component of the mixed systems, we can expect that voters are more likely to vote sincerely than in a regular plurality system, since a large number of candidates will run in plurality districts. With an increased number of candidates, compared to regular plurality systems, the system will create close races between top running candidates and marginal candidates in plurality districts. If a marginal candidate who a voter prefers most is perceived to gain a significant amount of vote share, she would be more willing to vote for the candidate.

For example, compare the following two situations. One is that an election is held under an SMD plurality rule, and voter's most preferred candidate is expected to gain about 20% of the total vote share, while the top two candidates are perceived to gain about 40% each. The other is that voter's most preferred candidate is expected to have 10%, while the top two candidates are expected to gain 45%. The voter who is under the first condition is more likely to vote sincerely compared to the voter under the second condition.

It is also important to notice the increase in the number of candidates can lead to the promotion of strategic voting, while it can also discourage strategic voting depending on the situation. This is because the increase in the number of candidates may create a close race between the top running candidates, while it also creates a close race between the top candidates and

marginal candidates. More specifically, when the race between the top candidates is close, voters who happen to support a marginal candidate is more likely to engage in strategic voting and cast a ballot for one of the candidates who they prefer more. On the other hand, if the race between the top two candidates is not close, and if the race between the top and marginal candidates is close, voters are more likely to vote for the marginal candidate who is their most preferred candidate. What this suggests is that the increase in the number of candidates can have positive or negative pressure on strategic voting. At this point, whether or not the increase in the number of candidates creates a positive or negative pressure should be left as an empirical question.

Nonetheless, if we observe the entire picture of what takes place in the plurality section of superposition systems, mixed systems seem to produce a large number of voters who do not have a chance to vote strategically. Moreover, the voters' tendency to cast their ballots sincerely should be substantially greater than that in regular plurality systems. The tendency for sincere voting would be larger in the SMD plurality component of a mixed system than in the regular SMD plurality rule. The tendency should also be larger in the multimember plurality component of a mixed system than in a regular multimember plurality system.

## **Abstention and Contamination Effects**

What is the relationship between abstention and the contamination effect? It is possible that abstention as a choice may influence how voters behave. To support the argument that a substantial number of voters in the plurality section of a superposition system vote sincerely even further, I will discuss the relationship between abstention and the contamination effect and show that the presence of an abstention as a choice does not undermine the idea that the likelihood of sincere voting is larger in the plurality component of the mixed system than in a regular plurality system.

The literature on turnout suggests that voters are more likely to turn out in PR rules than in SMD systems (Reynolds and Reilly 1997). This is because fewer voters are alienated in PR rules than in SMD rules. Voters whose most preferred candidate has no chance of winning are less likely to turn out since their votes will not give an impact on election outcome.

The formal literature also supports why PR rules creates a higher likelihood of turnout. According to Riker and Ordeshook (1968), one of the key factors in influencing turnout is the probability to cast a decisive vote.<sup>40</sup> If a voter perceives that the chance of casting a decisive vote is high, she is more likely to turn out. The work done by Riker and Ordeshook can guide us in determining how the plurality section of a mixed system influences turnout.

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<sup>40</sup> Riker and Ordeshook operationalize by using the following formula.

$$R = PB + D - C$$

where R is the utilities that an individual benefits from act of voting, P is the probability of casting a decisive vote, and B is the differential utilities that are associated with an outcome. D is the selective benefits which are obtained from casting a vote, such as the pleasure they get by fulfilling the duty of voting as a citizen. Finally, C is the cost of voting, such as to gather



The probability of casting a decisive vote is a factor that varies significantly across different electoral systems. For example, the probability of casting a decisive vote is larger in a PR rule than in an SMD rule. If we assume that the contamination effect is not present, the rate of turnout will be similar between the plurality component of the system and a regular plurality system. The PR section of the system will also maintain a similar rate of turnout compared to standard PR systems.

Assume that there is no contamination effect on voters but political parties are influenced by the contamination effect. The increase in the number of candidates occur in the plurality section of the election, while the plurality component of the election would produce a lower level of turnout than in a regular plurality system. As it was suggested earlier, the increased number of candidates in plurality districts spreads voters' support to marginal candidates. However, these voters who prefer these extra candidates in the plurality districts do not have a chance in influencing an election outcome. Since a larger number of voters may happen to prefer marginal candidates in the plurality section of a mixed system compared to a regular plurality election, the probability of abstention may be greater in the plurality section of a mixed system.<sup>41</sup>

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information about candidate and to physically get to the poll. If  $R$  is positive, voters will turn out to vote. If  $R$  is negative, voters abstain.

<sup>41</sup> McKelevey and Ordeshook (1972) generalize the formula for a multicandidate race. The formula for multicandidate competition is as follows:

$$E^k - E^0 = B^{k1}p^{k1} + B^{k2}p^{k2} + \dots$$

Based on the equation above, McKelvey and Ordeshook (1972) compare a two way race with a three way race that apply a regular plurality rule and suggest that adding another competitor to a race does not necessarily increase turnout, although it may be counter intuitive at first. The addition of a competitor may decrease the likelihood of turnout among

However, if we consider the contamination effect even further and think that voters are also influenced by it, the turnout in the plurality component of the election is not necessarily lower than the plurality component of the system. This is because rational voters will cast their ballots in the PR component of the system, and, as a result, voters would cast their ballots in the plurality component of the system, rather than to abstain in the plurality section. This happens because the cost of voting, such as going to a poll on the election day and paying attention to campaign and gaining relevant information, will be lowered to vote in the plurality component of the system since rational voters gather the information to vote in the PR section regardless of their decisions in the plurality section. This suggests that an abstention as a choice does not refrain voters who happen to prefer a marginal competitor from going to a poll, as much as we may expect, otherwise. If these voters turn out, the choice that they make is between strategic voting and sincere voting. Between the two choices, voters are expected to vote sincerely.

### **Impact of Sincere Voting on Number of Parties**

The above discussion suggests that some voters would not have their most preferred candidate in their plurality district, even though political parties

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certain groups of voters. For example, if a voter is indifferent between competitors 1 and 2 and prefers these two competitors to competitor 3, the likelihood of turnout may decline, if we assume that voters are uncertain about who will win. This is because the voter is not concerned about breaking a tie between candidates 1 and 2. The voter is only concerned about breaking a tie between candidates 1 and 3 or 2 and 3. Since the probability in breaking a tie between these candidates is smaller than that of breaking a tie between candidates 1

develop an incentive to place their candidates in the plurality component. This leads us to think that Duverger's Law may be maintained in the plurality component of the mixed system if there are not too many constituents who have a chance to vote for a marginal candidate. If no voters cast their ballots for a marginal candidate, the number of parties will not be inflated by voters, and thus lead the system to produce a Duvergerian equilibrium. In other words, to support the idea that the number of parties is inflated in superposition systems, I need to show that there are enough voters who contribute to the inflation of the number of parties by voting for marginal candidates. The final section of this chapter addresses whether or not voters will contribute to the increase in the number of parties by voting for a marginal candidate.

The argument here is a rather simple one. If a significant number of voters cast their ballots for a marginally performing candidate given a larger number of candidates in plurality districts, then the number of parties will be larger than that in a regular plurality election. That is, even when a number of voters do not have an opportunity to vote for the most preferred candidate, as long as some significant number of voters cast their ballots for marginal competitors, the plurality section of the system would produce an inflated number of parties, leading to the violation of a Duvergerian equilibrium. As it was mentioned earlier, voters' tendency to cast their ballots sincerely creates a violation of the Duvergerian equilibrium.

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and 2, the addition of the third candidate discourages voters who have the above preference to turn out.

In the following three chapters, we will turn to empirical analysis. Chapter 5 demonstrates the change in the incentive structure of political parties in superposition systems leads to an inflation of the number of candidates. Chapters 6 and 7 focus on how voters contribute to shape party systems. Chapter 6 demonstrates how the increased number of candidates changes voting conditions and how the change in conditions lead to prevent voters from engaging in strategic voting. I will also return to a question of ecological inference problem in Chapter 6 and empirically show that the use of aggregate level data will overestimates the number of parties. Chapter 7 examines whether or not a superposition system creates a significant number of sincere voters so that the number of parties is inflated to a level that is larger than what Duvergerian equilibria expect.

### **Part III.**

## **Empirical Assessment of Strategic Behavior in Mixed Superposition Electoral Systems**

## **Chapter 5**

### **Testing Parties' Strategic Entries**

The idea of the contamination effects between the plurality component and the proportional representation (PR) component of a mixed superposition system suggests that political parties would perform better in the PR component of an election by placing their candidates in plurality districts. The contamination effects have actually been found in the system that combines single member district (SMD) and PR rules.<sup>42</sup> Japan's Lower House elections and Russia's Duma elections are the examples of such cases.

As it was mentioned earlier, Japan practices two types of mixed systems. The Lower House uses a mixed system that combines an SMD rule and a PR rule. The Upper House applies a mixed system with a plurality multimember district rule and a PR rule. If we find the contamination effects in the Upper House elections, the idea that political parties gain more votes in the PR section by placing candidates in the plurality districts will be strengthened since the results are robust, even when it is tested in a different type of superposition system. The purpose of this chapter, then, is to test the robustness of the contamination effects by testing the idea in Japan's Upper House elections.

Although testing the contamination effects in Japan's Upper House is the main goal of this chapter, the empirical pattern of how candidates are

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<sup>42</sup> For example, the study carried out by Mizusaki and Mori (1997) is on the Japanese Lower House elections. Herron and Nishikawa (2001) also studied Japan's Lower House elections.

placed will also be included. This is because the map of how candidates are placed in different districts will give us a preliminary understanding on whether or not the number of candidates is inflated in the plurality section of superposition systems. However, a careful description of how candidates are placed has not been carried out in previous studies.

The organization of this chapter is as follows. First, I will show that the number of candidates is inflated substantially in the plurality component of Japan's superposition systems, including the Lower and the Upper Houses. Second, I will test the contamination effects in both the Lower and the Upper House elections. The results for the Lower House will be a reproduction of the test done by Herron and Nishikawa (2001). Although such a reproduction of the results may be redundant, it will be added to the chapter. In this way, the flow of the analysis will be smoother. Moreover, the comparison of the results between the Lower House and the Upper House will be more thorough, if the results for both the Lower and the Upper Houses are presented.

For testing the contamination effects, two hypotheses will be used, one for the Lower House and the other for the Upper House. I will then describe how Herron and Nishikawa (2001) tested the hypothesis for the Lower House, followed by their empirical finding. After the description of the results for the Lower House, I will carry out the analysis for the Upper House in a similar manner.

## **Empirical Patterns of Candidate Placement**

Table 5-1 shows the number of candidates in the SMD and PR components in the 1996 and 2000 Lower House elections. It shows that the number of candidates is substantially larger than what a Duvergerian equilibrium suggests. The number of candidates is larger than two in the plurality component of the Lower House elections since they use an SMD plurality rule. Only 1.7% of the districts has two candidates in the 1996 election. The result is the same for the 2000 election, showing that only 1.7% of the districts has two candidates. The typical number of candidates in these districts are higher than two and falls somewhere between three and five. The districts with three to five candidates make up more than 85% of the cases. In both the 1996 and 2000 election, the mean number of candidates is four.<sup>43</sup>

Table 5-2a presents the number of districts broken down by district magnitude. The information on district magnitude is added before the presentation of the patterns of candidate placements, since candidate placements are largely influenced by district magnitude.

The table shows that the largest frequency (i.e. mode) of district magnitude is one. Twenty-six districts have the magnitude of 1 between 1983 and 1992.<sup>44</sup> The next largest is the district magnitude of 2 followed by 3 and 4. There are only two districts that produce four seats between 1983 and 1992. These districts are Hokkaido and Tokyo prefectures.

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<sup>43</sup>The number of candidates broken down by political parties is shown in Appendix 5-1.

<sup>44</sup> The same district magnitude was kept between 1983 and 1992. However, it was adjusted before the 1995 election.



**Table 5-1: Patterns of Candidate Placement in the Lower House Elections – 1996 and 2000**

NUMBER OF CANDIDATES	1996	2000
2	1.7	1.7
3	27.3	34.3
4	38.0	37.0
5	20.7	18.7
6	8.3	7.0
7	3.0	1.3
8	1.0	0
Total	100%	100%
Mean	4.21	3.99
N	300	300

**Table 5-2a: District Magnitude in the Plurality Section of the Upper House Elections Between 1983 and 2001**

	DISTRICT MAGNITUDE				
Year	1	2	3	4	Total
1983-1992	26	15	4	2	47
1995	24	18	4	1	47
2001	27	15	4	1	47

Note: The total number of seats is 76.

Before the 1995 election, the number of seats in Hokkaido was reduced to two.

Table 5-2b presents the patterns of candidate placement in the Upper House elections between 1983 and 2001 in the same way as the table for the Lower House elections.<sup>45</sup> Since the district magnitude varies from district to district, it is difficult to determine whether or not the numbers of candidates are higher than what Duvergerian equilibria suggest in this table. However, the table reveals that only a few districts have two candidates, although there are more than twenty-four districts that produce one seat.

One of the interesting features that the table reveals is that the number of candidates has not decreased over time, although we see a structural break between 1992 and 1995 when the district magnitude is adjusted in some districts. These results are rather counterintuitive if we follow the idea that Duvergerian equilibria are reached over time; that is, the number of parties will be reduced over time. The table, as a result, may suggest that an important factor may be interfering with the system to reach to a Duvergerian equilibrium.

Since Table 5-2b is not adequate to see how the number of candidates is larger than Duvergerian equilibria suggest, the next table (Table 5-2c) shows the number of candidates controlled for district magnitude. The columns represent district magnitude, while the rows reflect the number of

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<sup>45</sup> The same superposition system was used between 1983 and 1998. They used a closed list PR rule. The system in 2001 uses an open-list PR rule.

**Table 5-2b: Patterns of Candidate Placement – the Upper House Elections Between 1983 and 2001**

NUMBER OF CANDIDATES	1983	1986	1989	1992	1995	1998	2001
2	2.1	2.1	0	2.1	2.1	0	0
3	42.6	40.4	34.0	42.6	17	6.4	2.1
4	23.4	34.0	21.3	25.5	27.7	21.3	27.7
5	14.9	2.1	14.9	8.5	25.5	36.2	34
6	6.4	6.4	2.1	4.3	12.8	2.1	10.6
7	4.3	4.3	12.8	6.4	2.1	6.4	6.4
8	0	6.4	2.1	2.1	2.1	10.6	6.4
9	0	2.1	4.3	0	0	2.1	0
10 or more	6.4	2.1	8.5	0	10.6	14.9	12.8
Total	100%	100%	100%	100%	100%	100%	100%
N	47	47	47	47	47	47	47

**Table 5-2c: District Magnitude and Patterns of Candidate Placement – the Upper House Elections Between 1983 and 2001**

	DISTRICT MAGNITUDE				
Excess Candidates	1	2	3	4	Total
0	2.2	3.6	0	0	2.4
1	46.4	30.0	3.4	0	35.6
2	29.1	23.6	17.2	9.1	25.5
3	20.7	13.6	24.1	27.3	18.8
4	0.6	9.1	3.4	9.1	4
5 or more	1.1	20.0	51.7	54.5	13.7
Total	100%	100%	100%	100%	100%
N	179	110	29	11	329

excess candidates. The number of excess candidates equals the number of candidates minus  $M+1$ . For an illustration, if there are three candidates when the district magnitude is 1, the number of excess candidates is 1 since  $3-2=1$ .

The table shows that the numbers of candidates in the Upper House elections tend to be larger than the  $M+1$  Rule predicts. The tendency that the number of candidates reaches the level that is higher than the  $M+1$  Rule predicts are more prominent when the district magnitude is larger. More specifically, the mode is one excess candidate (46.4%) when the district magnitude is 1. When the district magnitude is 4, none of the districts are close to the level that Duvergerian equilibria suggest. Fifty-five percent of the districts have five or more excess candidates.<sup>46</sup>

### **Hypotheses for Strategic Entries**

The first hypothesis focuses on the strategic party entries into the SMD part of a mixed system in Japan's Lower House elections. If the idea of advertisement effect is correct, we expect parties who place candidates in SMD districts to do better in the PR districts compared to others who do not place candidates. Based on the idea, the following hypothesis is tested.

*Hypothesis 1. The performance of political parties in the PR portion of the mixed system is improved by placing a candidate in corresponding single member districts (Herron and Nishikawa 2001).*

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<sup>46</sup> The number of candidates broken down by political parties is shown in Appendix 5-2.

If Hypothesis 1 is supported, we can expect that parties' candidate nomination strategy in the SMD portion of the system will be contaminated by the PR portion. If this is the case, we can predict that the SMD elections, under a superposition system will not follow Duverger's Law in terms of party entries.

As is the case for the Lower House elections, we expect that parties who place candidates in the plurality component of the Upper House election perform better in the corresponding PR districts. If this is true, a following hypothesis should be supported empirically.

*Hypothesis 2. The performance of political parties in the PR portion of the mixed system is improved by placing a candidate in corresponding multi-member districts.*

Hypothesis 2 is similar to Hypothesis 1 in that both hypotheses examine the impact of placing a candidate in the plurality portion of the system on parties' performance on the PR portion. Hypothesis 1 examines the impact in the mixed system with the SMD rule, while Hypothesis 2 examines the effect in the mixed system with the medium size district rule. However, the hypotheses are different in terms of the district magnitude in the plurality section of the election. As it was mentioned, Hypothesis 1 has already been tested by Herron and Nishikawa (2000). If Hypothesis 2 is supported, the idea of the contamination effects will be bolstered further.

## **Testing Hypotheses for Mixed Superposition Electoral System with SMD and PR**

The first hypothesis is that the performance of political parties in the PR portion of the superposition system is improved by placing a candidate in corresponding single member districts, demonstrating contamination effects. The dependent variable in the analysis is performance of the party in the PR component. The data from the 1996 Lower House election are used to measure each party's performance in the PR component of the election. The dependent variable reflects the proportion of PR vote received by the given party in the corresponding single member district. The unit of analysis is districts. The number of cases is 300 since there are 300 single member districts.

There are three independent variables in each model. The primary independent variable is candidate placement in SMDs. It is coded 1 if a candidate of the given party participated in the district, and it is coded 0 if the party did not field a candidate. If it is statistically significant, party performance in PR is improved by candidate placement, indicating that there is a contamination across the two components of the mixed system.

The second and the third independent variables provide a control for the main hypothesis. More specifically, while we anticipate that the advertisement effect, in part, explains party performance in the PR section, one could argue that careful candidate placement is a more appropriate explanation. That is, a party will place candidates in districts where it knows that the party enjoys a high level of popularity.



To account for this alternative, two variables are introduced to the model. One is the variable for incumbency. Parties can expect that incumbents will do well in general, and thus, adding information on incumbency can be a proxy for popularity. A dummy variable, INCUMBENT, is added to all models. The variable is coded 1 if the candidate running in the district is an incumbent who won her seat in the previous election and 0 if the candidate is not an incumbent.<sup>47</sup> The other control variable is how well parties performed in different districts in the 1995 Upper House elections.<sup>48</sup> The Upper House election has fifty districts, and we can acquire detailed information regarding in which district each party is popular.

The Ordinary Least Squared (OLS) estimates are used to find out whether or not the SMD variable has a positive impact on parties' performance in the PR section of the election. It is ideal to test the hypothesis with all of the parties. However, some parties will be excluded from the analyses. For example, the Liberal Democratic Party (LDP) and the Japan Communist Party (JCP) will not be included since they place candidates in most of the single member districts. As a result, the independent variable will not have enough variance, and the performance of OLS estimation will be impossible.

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<sup>47</sup> INCUMBENT was coded 1 if the candidate was an incumbent. That is, candidates are coded 1 even when they are not from the district in which she ran in the election under the analysis.

<sup>48</sup> The 1995 Upper House election results are used instead of the 1993 Lower House election results. This is because some new parties were created or some old parties are merged into different parties between 1993 and 1996. As a result, it is difficult to use the 1993 Lower House election to assess the popularity of party in 1996.

Similarly, some parties are excluded from analyses since they place their candidates in only a few districts. Placing only a few candidates also prevent the independent variable from creating enough variance. Some parties are excluded since they do not run in the plurality component of the election.

In a similar manner, the addition of a control variable cannot be carried out for some parties, since these parties do not have enough variation in a control variable. For example, some parties are new and were created just before the 1996 election. As a result, these parties do not have an electoral history to create the POPULARITY variable. For these parties, the analysis is carried out without the POPULARITY variable. The results are also shown separately from other parties that have both INCUMBENT and POPULARITY variables as control variables.

The results that include both INCUMBENT and POPULARITY variables are shown in Table 5-3. The parties that are included in this table are the New Frontier Party (NFP) and the Social Democratic Party (SDP). The table supports the idea of contamination effects. The variable of our interest, SMD, is significant, even after controlling for INCUMBENT and POPULARITY. For example, for the NFP, the coefficient is 3.174, and it is statistically significant at the 99% confidence level. Substantively, this means that, on average, the NFP gained an extra 3 percentage points in a corresponding PR district by placing a candidate in a single member district. Similarly, the coefficient for the SDP is 2.264 and statistically significant.

**Table 5-3: OLS Results for the 1996 Lower House Election with INCUMBENT and POPULARITY Variables**

	NFP	SDPJ
Constant	4.720*** (1.278)	.610* (.335)
SMD	3.174*** (.687)	2.264*** (.347)
Incumbent	1.995*** (.569)	7.052*** (.570)
Popularity	.643*** (.043)	.331*** (.019)
Adjusted R <sup>2</sup>	.565	.758
N	299	286

Dependent Variable: SMD vote share for the specified party in the PR component of the ballot. Standard errors are shown in parentheses.

\*\*\* = significant at the .01 level

\*\* = significant at the .05 level

\* = significant at the .10 level

Note: The problem of collinearity is not substantial since the Variance Inflation Factor (VIF) for each variable was close to 1.00 in each equation. The elimination of outliers does not affect the output substantively.

Source: Herron and Nishikawa (2001)

This suggests that the SDP gained 2 percentage points more in PR districts by placing candidates in the SMD part of the election.

Table 5-4 shows the results for parties that do not include POPULARITY as a control variable. The results for six parties are shown in the table. These parties include the Democratic Party of Japan (DPJ), Jiyurengo (JIYU), the National Frontier Party (NFP), the New Harbinger Party (NHP), and Shinshakaito. The results support that the parties gain an extra vote share by placing candidates in the SMD part of a mixed system. The coefficients for the SMD variable are positive for all the parties and statistically significant at the 99% confidence level. These positive coefficients suggest the presence of contamination effect in mixed electoral systems.

### **Testing Hypotheses for Mixed Electoral Systems with SNTV and PR**

The hypothesis for the mixed system with a single nontransferable vote (SNTV) rule is tested by using the data from election returns, as it was the case for the first version of the mixed system. Hypothesis 2 tests whether or not the performance of political parties in the PR portion of the mixed system is improved by placing a candidate in corresponding medium size districts. If they improve their performance in the PR component of the system, we can consider that the improvement was caused by advertisement effects. This, in turn, suggests the existence of contamination effects.

**Table 5-4: OLS Results for the 1996 Lower House without POPULARITY Variable**

	DPJ	JIYU	NFP	NHP	SDPJ	SHINSH AKAITO
Constant	11.859*** (.379)	.732*** (.104)	22.166*** (.706)	1.285*** (.080)	6.129*** (.141)	1.632*** (.091)
SMD	7.903*** (.615)	.802*** (.218)	5.737*** (.881)	3.501*** (.670)	2.202*** (.496)	1.164*** (.274)
Incumbent	3.208*** (.867)	15.271*** (1.196)	2.838*** (.750)	8.913*** (.781)	8.893*** (.561)	5.684*** (1.080)
Adjusted R <sup>2</sup>	.471	.451	.236	.663	.505	.160
N	299	232	299	153	286	299

Dependent Variable: SMD district-level percent of vote for the specified party in the PR component of the ballot. Standard errors are in parentheses.

\*\*\* = significant at the .01 level

\*\* = significant at the .05 level

\* = significant at the .10 level

Note: The problem of collinearity is not substantial since the Variance Inflation Factor (VIF) for each variable was close to 1.00 in each equation. The elimination of outliers does not affect the output substantively.

Source: Herron and Nishikawa (2001)

The dependent variable will be the PR vote shares of parties that correspond with the medium size district in the 1983 Upper House election. The unit of analyses is each medium size district. The number of cases is 47 since there are forty-seven districts.<sup>49</sup> The independent variable of our interest is whether or not candidates are placed in the plurality districts.

The two independent variables are again used to give controls for the primary independent variable. The control variables are added to the analyses for the same reason as for the Lower House. We can expect that parties may know in what districts they have a chance to win a seat. That is, according to their knowledge, they place their candidates. The vote shares in these particular districts are expected to be higher than other districts. In other words, parties do better in these districts, not because they place their candidates, but because they are popular in these districts.

The first control variable is whether or not the nominated candidates are incumbents. The other control variable is the popularity variable. The popularity variable is created based on how well each party performed in each district in the 1980 Lower House election.

As was the case for the mixed system with an SMD rule, the JCP is excluded from the analysis. This is because the JCP placed their candidates in all of the plurality districts, and the independent variable will not have any variance at all. As a result, the OLS estimation cannot be carried out. For a

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<sup>49</sup> These districts correspond with prefectures.

similar reason, the analysis on New Party Harbinger (NPH) does not have the INCUMBENT variable.

Table 5-5 shows the results for parties that have both INCUMBENT and POPULARITY variables as control variables. The table basically supports the contamination effects, even though the results are not as consistent as the ones for the mixed system with an SMD rule (Table 4-1). More specifically, the table shows that the coefficients for the medium size district system (MSD) variable are positive and statistically significant for the Japan Socialist Party (JSP) and the New Frontier Party (NFP), while it is not significant for the Liberal Democratic Party (LDP). The coefficients for the JSP and NFP are 2.955 and 3.184 (the former is statistically significant at the 95% confidence level, while the latter is significant at the 90% confidence level.). These coefficients suggest that the JSP and NFP on average gain extra 3 percentage points in the PR section of the system by placing their candidates in the medium size districts.<sup>50</sup>

The results for a party which does not have the INCUMBENT variable are shown in Table 5-6. The party that is analyzed here is the NPH. The results support the hypothesis that the contamination effect exists. The coefficient for the SMD variable is 4.49. The association is statistically significant at the 99% confidence level. The coefficient suggests that the

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<sup>50</sup> The effects on the LDP do not exist after controlling for other independent variables. This is only a speculation but the reason for this is because the LDP has been a ruling party of Japan for most of its postwar history. As a result, the advertisement effect is not as effective and does not give an extra vote share to a large party like the LDP, as it does to small parties. In other words, voters in Japan know enough about the LDP, and the placement of a candidate does not help the party as much as it helps other parties.

placement of a candidate improves NPH's performance in the PR component of the system by 4.5 percentage points.

## **Summary**

The findings in this chapter support that the number of candidates is larger in the plurality component of a mixed system, compared to that of a regular plurality rule. This is especially because small parties develop an incentive to place their candidates to gain an extra vote share in the PR component of a mixed system. As a result, even when small parties expect that their candidates would not win a seat, they would chose to place candidates.

Overall, the results for Hypotheses 1 and 2 support that the number of candidates will be larger in the plurality component of a mixed system. These results suggest that the number of candidates is more likely to be larger than 2 in the SMD part of the mixed system (Hypothesis 1), while the number of candidates would be larger than  $M+1$  (Hypothesis 2).

What these suggest is that the change in parties' behavior will give increased opportunity for voters to spread their votes. In other words, this chapter showed that parties created the foundation for violating Duverger's Law and the  $M+1$  Rule. If voters indeed spread their votes to small parties ranked lower than two in the SMD part of a mixed system or  $M+1$  in the medium size district part, we can expect that the plurality section of a mixed system has a tendency to violate Duverger's Law and the  $M+1$  Rule.



**Table 5-5: OLS Results for the 1995 Upper House Election with INCUMBENT and POPULARITY Variables**

	LDP	JSP	NFP
Constant	16.348*** (2.929)	5.955*** (2.159)	19.606*** (2.062)
MSD	0.251 (2.138)	2.955* (1.491)	3.814** (1.717)
Incumbent	1.713 (.569)	1.639 (1.632)	.265 (2.708)
Popularity	.313*** (.058)	.613*** (.136)	.290*** (.070)
Adjusted R <sup>2</sup>	.377	.727	.346
N	47	47	47

Dependent Variable: Vote share for the specified party in the PR component of the ballot. Standard errors are shown in parentheses.

\*\*\* = significant at the .01 level

\*\* = significant at the .05 level

\* = significant at the .10 level

**Table 5-6: OLS Results for the 1995 Upper House Election without INCUMBENT Variable**

	NPH
Constant	1.755*** (.299)
MSD	4.490*** (1.089)
Popularity	.378*** (.051)
Adjusted R <sup>2</sup>	.728
N	47

Dependent Variable: Vote share for the specified party in the PR component of the ballot. Standard errors are shown in parentheses.

\*\*\* = significant at the .01 level

\*\* = significant at the .05 level

\* = significant at the .10 level

## **Chapter 6**

### **Voting Environment and Occurrence of Strategic Voting**

As was discussed in Chapter 4, the previous studies on voting behavior find the evidence of strategic voting in mixed electoral systems. However, if we take the existence of the contamination effect into account, the occurrence of strategic voting should not be as frequent as the literature suggests. In this chapter, I will empirically show that strategic voting rarely occurs in mixed superposition systems.

I will carry out two tasks to achieve the above. First, I will show that few voters are in an environment that promotes strategic voting in superposition systems. As it was argued in the theoretical section for voting behavior, voters need to be in a certain voting environment for strategic voting to take place. Superposition systems tend to create conditions that prevent voters from behaving strategically. As a result, the occurrence of strategic voting is reduced more than we may expect. Second, I will show that the proportion of voters who engage in strategic voting is actually small in superposition systems. In particular, I will classify voters into different groups, based on their voting pattern, and show that the proportion of voters who belong to the group of strategic voters is small.

In the following section of this chapter, I will first discuss how certain voting environment reduces the occurrence of strategic voting in more detail. I will especially focus on two aspects, including the opportunity factor and the

expected utility factor. I will also discuss the reason why the use of aggregate level data may overestimate the occurrence of strategic voting in superposition systems. I will especially discuss how the contamination effects relate to an overestimation of strategic voting when aggregate level data are used.

### **Contamination Effects and Voting Conditions**

The use of aggregate level data overestimates the occurrence of strategic voting because it ignores the existence of voting conditions that prevents strategic voting from occurring. I argue that the occurrence of strategic voting is reduced by two major factors, including the opportunity factor and the expected utility factor. Briefly, the opportunity factor refers to whether or not voters' most preferred candidate is available in their plurality district, while the expected utility factor refers to whether or not voters can increase their utilities by voting for a less preferred candidate.

For the opportunity factor, it plays an important role in creating a different pattern of voting behavior between the plurality component of superposition systems and regular plurality systems. The opportunity factor leads superposition systems to reduce the occurrence of strategic voting. Superposition systems create a condition in which voters face different choice sets in terms of political parties.<sup>51</sup> Political parties create an incentive to place candidates in the plurality districts of a superposition system. However, this

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<sup>51</sup> The idea that voters' choice sets influence voting behavior is introduced in Blais and Nadeau (1996).

does not mean that parties can always place their candidates in all of the districts. As a result, voters face different patterns of candidate placement across districts. This creates the condition in which some voters have an opportunity to vote for a candidate who is from their most preferred party in their district, while others do not. If we ignore these different voting environments by measuring strategic behavior only at an aggregate level data, it will lead to an overestimation of the occurrence of strategic voting. As an illustration, the definition of strategic voting is to transfer a vote to a less preferred candidate to maximize a voter's expected utility. More specifically, a voter's preference ordering is  $C_3 > C_2 > C_1$ , where candidates  $C_1$  and  $C_2$  are front runners while candidate  $C_3$  is a marginal candidate. If the voter transfers his ballot to  $C_2$  to maximize his expected utility, his behavior is considered to be strategic.

An important assumption involved in the definition is that a marginal candidate who the voter prefers most runs in his district. If his most preferred candidate is not available in the district, the voter is forced to transfer his vote to one of the other two candidates who are available in the district. In the above example, the voter is expected to vote for  $C_2$  since he prefers  $C_2$  to  $C_1$ .

This pattern of voting may look as if the voter engaged in strategic voting, if we only look at aggregate level data. For example, Reed (1999) supports the presence of strategic voting by showing that the first and second finishers get more SMD votes compared to PR votes, while the third and fourth finishers get more PR votes than SMD votes. However, a problem with

this approach is that the opportunity factor is not taken into account. Voters who do not have an opportunity to vote for their most preferred candidate are expected to transfer their ballots to other candidates. If they do so, they look as if they voted strategically, even though transferring their vote from a marginal candidate to a front runner was out of their control. If a large number of voters transfer their ballots to one of the front runners instead of a marginal candidate, this will look as if a large number of voters behaved strategically at aggregate level data.<sup>52</sup>

The analysis of two public opinion surveys, including the 1996 Japan Election and Democracy Study (JEDS96) and the 1983 Japan Election Study (JES83), suggest that researchers need to be cautious about the opportunity factor. The surveys show that there are a significant number of voters who do not have an opportunity to vote for their most preferred candidate. There are feeling thermometer questions on political parties in the surveys. The party

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<sup>52</sup> Reed (1999) states that the JCP candidates gain more votes in the PR component than in the SMD part. The fact that the JCP places candidates in most of the districts suggests that the above pattern is created by the presence of strategic voting. However, the difference is only 0.18 percentage points. This may suggest that JCP supporters vote sincerely, but does not necessarily support the presence of strategic voting. Another evidence that Reed uses is that the first and the second finishers get more SMD votes than PR votes. This may have an ecological inference problem. This is because there is a variation in candidates' placement across districts, and voters who do not have an opportunity to vote for their most preferred candidate may choose to vote for one of the front runners. For example, there are voters who prefer the Democratic Socialist Party (DSP). If these voters do not have an opportunity to vote for a candidate from the DSP, they have to transfer their votes to one of the other candidates. If the voters are more likely to transfer their votes to a front runner instead of a marginal candidate, the overall percentage of vote shares among the first and the second finishers in the plurality component will be larger in the SMD part than the PR component. Indeed, the JEDS96 survey reveals that 82% of the DSP supporters with no opportunity, transferred their votes to a non-JCP candidate, while only 18% transferred to the JCP candidate. Given that JCP candidates are usually marginal candidates, this suggests that more voters transfer their ballots to a front running candidate than marginal candidates.

that has the highest value is considered to be a voter's most preferred party.<sup>53</sup>

If a voter prefers a particular political party, we can project that the voter is likely to prefer a candidate who is from that party.<sup>54</sup> Since we can locate what district respondents came from, we can find out whether or not they have an opportunity to vote for their most preferred candidate.

According to the JEDS96, 91% of the electorate had an opportunity to vote for their most preferred candidate in the Lower House election, while 9% did not. The result is similar in the 1983 Upper House election, where 92% had an opportunity and 8% did not. The figures show a substantial reduction in the number of potential strategic voters (i.e. 9% in the Lower House election and 8% in the Upper House election).

The second aspect of voting conditions that we need to pay attention to is the expected utility term. In addition to finding out if voters' most preferred candidate is running in their districts, it is necessary to see if they actually need to vote strategically. More specifically, another assumption of strategic voting is that a voter happens to prefer a marginal candidate. A voter

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<sup>53</sup> Even though there may be some problems in using thermometer questions in surveys, using these questions is considered to be one of the best ways to measure voters' preferences and is widely used.

<sup>54</sup> It is also possible to rank candidates instead of political parties since candidates play an important role in Japan's elections (Miyake 1989; Rochon 1981). However, it nonetheless seems to be appropriate to depend on the preference ordering of parties as the proxy for the preference ordering of candidates for two reasons. First, since the SMD rule was only introduced in the 1996 Lower House election, and thus about 50% of the candidates in each district were new to voters, it is impossible for voters to rank the popularity of candidates apart from their party membership. The second reason applies to the Lower and Upper House elections. Some researchers have shown that political parties play a substantial role in Japan's elections (Kobayashi 1991; Miyake 1995; Richardson 1988). In other words, ranking parties may be a better solution than ranking candidates. Moreover, to rank candidates in terms of the likelihood of winning a seat is a complicated task since we always see some mobility in the entry of new candidates in an election. Using actual election results in 1983 is one of the best solutions to solve this problem, even though the ranking is done ex ante.

who prefers a front-runner does not have to transfer her vote to maximize her expected utility. Only those voters who prefer a marginal candidate have to choose whether or not to behave strategically. When a voter prefers a front runner, she can simply cast her ballot for the most preferred candidate since their sincere preference and sophisticated choice coincide. When she casts her ballot for her most preferred candidate, she is called a straightforward voter (Farquharson 1969).

The existence of straightforward voters suggests that it is important to consider the marginality of candidates.<sup>55</sup> We need to detect who happens to prefer a front running candidate and exclude these voters from the group of potential strategic voters. Since the previous studies use aggregate level data, they cannot find the size of straightforward voters in the electorate. By identifying who prefers a marginal candidate, we can measure the occurrence of strategic voting more precisely.

According to the two surveys, including the JEDS96 and the JES83, the marginality factor reduces the occurrence of strategic voting greatly.<sup>56</sup> A vast majority of the electorate happens to support a front running candidate and does not have to vote strategically to maximize their expected utility. In

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<sup>55</sup> This does not suggest that it is not necessary to consider the existence of straightforward voters in regular plurality systems since the marginality factor can play a role in reducing the number of potential strategic voters in both regular plurality systems and superposition systems. However, since detecting the size of straightforward voters is important, the analysis on the marginality factor is included.

<sup>56</sup> We can create the marginality variable by looking at how voters answered feeling thermometer questions on political parties and how candidates performed in the election. Candidates will be considered marginal when their vote shares are the third largest or lower in Japan's Lower House election since it applies a superposition system with an SMD plurality district. When candidates' vote shares are  $M+2^{\text{nd}}$  or lower in Japan's Upper House election,



the Lower House election, 77% of the electorate belongs to this category, while 72% belongs to this category in the Upper House election.

The reduction in the occurrence of strategic voters is even more substantial, if we consider how the opportunity and marginality factors together decrease the size of potential group of strategic voters. Tables 6-1a and 6-1b show the results. As described earlier, the 9% does not have an opportunity to vote for their most preferred candidate in the Lower House. Moreover, 77% belongs to the voting condition in which they do not have to vote strategically since they happen to prefer a front runner. This means that 86% (9%+77%) of the electorate is not in the condition that promotes strategic voting (Table 6-1a). In the Upper House, the figures are 8% and 72% respectively. This shows that 80% of the electorate in the Upper House is not in the condition to vote strategically (Table 6-1b).

Besides the marginality factor, there are other factors that relate to expected utilities. Voters' perceptions of candidates' probability of winning and utility differences also need to be in a certain condition to promote strategic voting. More specifically, it is not rational to vote strategically even when the opportunity and the marginality factors promote them to vote strategically. This is especially because of voters' perceptions on candidates' probability of winning and utility differences. As an illustration, a voter's preference ordering is  $C_3 > C_2 > C_1$ . The voter perceives that candidate  $C_1$  is leading the race in an SMD plurality election. However, the competition

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they will be considered marginal since the election utilizes a multimember plurality district rule.

**Table 6-1a: Reduction in the Size of Potential Strategic Voters by Opportunity and Marginality Factors - Lower House**

	OPPORTUNITY		
MARGINALITY	Yes	No	Total
Front Candidate	77%	0%	77%
Marginal Candidate	14%	9%	23%
Total	91%	9%	100%
N			963

**Table 6-1b: Reduction in the Size of Potential Strategic Voters by Opportunity and Marginality Factors - Upper House**

	OPPORTUNITY		
MARGINALITY	Yes	No	Total
Front Candidate	72%	0%	72%
Marginal Candidate	20%	8%	28%
Total	92%	8%	100%
N			1329

between  $C_2$  and  $C_3$  is close, even though  $C_2$  may be leading slightly. Under such circumstances, it is more rational for the voter to behave sincerely because it is rather difficult to determine which candidate ( $C_2$  or  $C_3$ ) is trailing in the district (Cox 1997).

Similarly, there may be some voters who prefer a particular candidate with a strong intensity and do not perceive much difference among other candidates in terms of utilities. In this case, the voter is not expected to vote strategically since casting a decisive ballot among the rest of the candidates yields similar utilities in the election outcome. Under the condition, voters are discouraged to vote strategically (Cox 1997).<sup>57</sup>

Table 6-2 shows the percentage of people who belong to a group in which voters would not increase their expected utility by transferring their ballots. The analysis includes respondents who have an opportunity to vote for their most preferred candidate and happen to prefer a marginal candidate in the Lower House election (i.e. 14% of the electorate). The respondents are categorized based on the values on the expected utility term for the most preferred candidate minus the second most preferred candidate that is calculated based on an equation developed by McKelvey and Ordeshook

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<sup>57</sup> McKelvey and Ordeshook (1972) developed a formula for a multicandidate race in a plurality SMD rule. It summarizes different conditions that may encourage or discourage strategic voting. The formula is as follows:  $E^k - E^0 = \sum_{i \neq k} [p_{ik} (u_k - u_i)]$  where  $E^k$  is the expected utility that a voter will gain by voting for candidate  $k$ , and  $E^0$  is the expected utility that is associated with abstention. The term  $p_{ik}$  is the probability that the voter will cast a decisive vote in between the candidates  $i$  and  $k$ . The term  $(u_k - u_i)$  shows the utility of voting for the candidate  $k$  instead of  $i$ .

**Table 6-2: Reduction in the Size of Potential Strategic Voters by Candidates' Probability of Winning and Utility Differences**

<b>MOST PREFERRED – SECOND PREFERRED</b>	<b>%</b>
<b>-7.99~-1.00</b>	<b>14.0</b>
<b>-0.99~0.93</b>	<b>15.1</b>
<b>0.93~2.99</b>	<b>34.9</b>
<b>3.00~25.00</b>	<b>36.0</b>
<b>Total</b>	<b>100%</b>
<b>N</b>	<b>86</b>

(1972).<sup>58</sup> Respondents who have a negative value are the ones who tend to increase their expected utilities by engaging in strategic voting, whereas respondents who have a positive value should vote sincerely to maximize their expected utility. Only about 30% of those who are included in this analysis have a positive value.<sup>59</sup> This means that only about 4% (30% x 14%) of the electorate is in the condition that encourages voters to behave strategically in the 1996 Lower House election.

Furthermore, the reduction in the number of strategic voting may not stop here. In the plurality component of the mixed system, strategic voting is less likely to occur even when above three conditions promote strategic voting. This also has to do with the contamination effect by the presence of PR elections. More specifically, strategic voting requires more conditions in order to make voters behave strategically. One of these conditions is that voters need to be oriented with a short-term instrumental motivation (Cox 1997). Some voters may think that their most preferred candidate may have a

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<sup>58</sup>Based on the work done by McKelevey and Ordeshook (1972), the following equation is introduced by Black (1978). The formula states:  $E^1 - E^2 = 2 p_{12} (u_1 - u_2) + p_{13} (u_1 - u_3) - p_{23} (u_2 - u_3)$ . Black states that if  $E^k - E^0 > 0$ , the rational voter casts a vote for candidate 1, when  $E^1 - E^2 > 0$ . It leads to sincere voting. If  $E^1 - E^2 < 0$ , the voter will vote for candidate 2 and is classified as a strategic voter. The formula suggests that candidates' probability of winning and utility differences should fit in a certain pattern to promote strategic voting. For example, the probability of casting a decisive vote for the first preferred candidate ( $p_{12}$  or  $p_{13}$ ) should be small to promote strategic voting. The utility difference between the first preferred candidate and the second, ( $u_1 - u_2$ ), or the third, ( $u_1 - u_3$ ), should also be small. Moreover, the utility difference between the second preferred candidate and the third preferred candidate ( $u_2 - u_3$ ) should be substantially large as well as their race should be close, i.e.  $p_{23}$  should be large. If these conditions do not meet, it is not rational for voters to engage in strategic voting.

<sup>59</sup> We can assess  $E^1 - E^2$ , if we know the values for the term  $p_{ik}$ , and the term  $(u_k - u_i)$ . I will use actual vote shares of candidates to create the term  $p_{ik}$ . It may be better to use public opinion survey data to find out voters' perceptions. However, I will use election outcomes since no surveys have enough cases in each plurality district to project how voters perceive candidates' probability of winning. To reflect  $(u_k - u_i)$ , feeling thermometer questions in a public opinion survey will be used. For example, a voter answers 100 degrees for competitor

chance of winning when elections are repeated, even though the candidate does not have a chance of winning in a current election. If this is how voters perceive a candidate's chance of winning, they are more willing to vote for a marginal candidate.

If we consider a mixed system with the contamination effect, it is likely that voters under mixed system have a longer-term incentive. This is because small parties can survive due to the presence of the PR election, so that small parties would not at least disappear as they may do in a regular plurality SMD election. As a result, voters may be more willing to support their most preferred candidate to keep them in the plurality section of the system, hoping that the candidate would win in a future election.

Another reason why mixed systems promote sincere voting is because the contamination effects increase the number of candidates in plurality districts. The increase, in turn, can decrease the frequency of strategic voting. This is true even when all of the conditions that are discussed above (i.e. the opportunity and the expected utility factors) promote strategic voting.

When voters have difficulty in guessing who is trailing in the district, voters are more likely to vote sincerely (Cox 1997). If we apply this idea and compare the plurality section of superposition systems and regular plurality systems, we can expect that voters are more likely to vote sincerely in superposition systems than in regular plurality systems because the system is expected to create close races.

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$C_1$ , 90 degrees for competitor  $C_2$  and 80 degrees for competitor  $C_3$ . The voter's utility distance between the first and the second candidate is 10 since  $(u_1 - u_2) = 100 - 90$ .

What the above discussion suggests is that mixed systems produce a large number of voters who are in the condition that prevents or discourages voters from behaving strategically. The occurrence of strategic voting is rare even some factors may promote strategic voting. In the following section of this paper, I will classify voters, based on their voting patterns, and show that the percentage of strategic voting is actually small in the plurality part of superposition systems.

### **Classification of Voters**

To measure the frequency of strategic voting, it is necessary to investigate how voters actually behave in the plurality section of superposition systems. The goal here is to detect voters who cast their ballots strategically.<sup>60</sup> To do so I will classify voters into several groups depending on their voting pattern. The first group of voters is strategic voters who happen to prefer a marginal candidate and transfer their votes to a less preferred competitor who is one of the front runners in their district.

The second group of voters is sincere voters. Sincere voters have a similar condition as the first group in terms of the opportunity and marginality factors. Voters have an opportunity to vote for their most preferred candidate, and their most preferred candidate is a marginal performer. The difference between the first group and the second group is that voters in the second

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<sup>60</sup> It is also possible to classify voters in terms of candidates' probability of winning and utility differences. However, since it is difficult to apply the equation for expected utility to the Upper House, these factors will not be considered in classifying voters in this part of the analysis.



group vote for the most preferred candidate instead of transferring their votes to a less preferred candidate.

The third group is straightforward voters. These voters happen to prefer a front running candidate and vote for their most preferred candidate. The fourth group is the voters who do not have an opportunity to vote for their most preferred candidate and, therefore, vote for one of the front running candidates. These voters should probably be categorized as sincere voters since they vote for their most preferred candidate among those who are available in their district. However, I will call them non-opportunity voters to distinguish from strategic and sincere voters.

The fifth group of voters is irrational voters. Voters who are categorized into this group are not necessarily irrational despite its label. For example, a voter's preference ordering is  $C_1 > C_2 > C_3 > C_4$ . The candidates' popularity is  $C_4 > C_3 > C_2 > C_1$ . Under the situation, the voter can improve her expected utility by voting for  $C_2$ , although  $C_2$  may be considered as a marginal candidate. It is especially rational to vote for  $C_2$  when the race between  $C_2$  and  $C_3$  is close. However, the voter will be classified as irrational since she did not transfer her ballot to one of the front runners. In this way, we do not have to make a large number of categories to classify voters in a more complicated way and can focus on the analysis on the occurrence of strategic voting in superposition systems.

Similarly, when a voter does not have an opportunity to vote for her most preferred candidate and transfer her vote to a less preferred candidate

who is also a marginal candidate, she will be classified as an irrational voter, even though she did not necessarily behave irrationally. It is possible that the voter behaved rationally under the condition, since she might have transferred her ballot to another marginal candidate based on her perception on candidates' probability of winning and utility differences.<sup>61</sup>

The final group is the voters who abstained from voting in the plurality component of the superposition system. There may be a variety of reasons why voters abstain. For example, a voter may abstain since her most preferred candidate is not present in her district. It is also possible that a voter is indifferent toward the candidates. As a result, the voter is not motivated to turn out. Although there may be many reasons for abstention, voters who abstain from voting are classified as one single group in this analysis.

To create the outcome variable based on the above six categories, I will use the opportunity and marginality factors as well as the information on how voters actually voted. The opportunity and marginality factors are created based on feeling thermometer questions and election returns. Feeling thermometer questions are used to find voters' preferences, while election returns are used to gain the information on who is placed in plurality districts or who may be trailing.<sup>62</sup> For the information on voting behavior, the questions

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<sup>61</sup>There are still other voters who are classified as irrational voters. Some voters prefer a marginal candidate and may transfer their ballot to a less preferred candidate who is also a marginal candidate. These voters are not necessarily irrational since it is possible that they may be able to improve their expected utility. However, as mentioned in the text, I will avoid creating a large number of categories to keep the analysis simple.

<sup>62</sup>It is also important to note that the JEDS96 survey provides thermometer questions for six political parties. Some parties, such as Shinshakaito and Jiyurengo, are not included even though they place candidates in some plurality districts. As a result, these parties are dropped

on which party candidate the survey respondents voted for in the plurality portion of the elections will be used.

To classify voters into the six categories, I will first identify respondents who have an opportunity to vote for their most preferred candidate, but the candidate is only performing marginally. If a voter casts her ballot for a less preferred candidate who is one of the front running candidates in the district, she is classified as a strategic voter. If the voter casts her ballot for the marginal candidate, she is classified as a sincere voter. When the voter casts her ballot for a less preferred candidate who is not a front running candidate, she is classified as an irrational voter.

Second, I will identify respondents who do not have an opportunity to vote for their most preferred candidate. If these voters cast their ballots for one of the front runners, they are categorized as no opportunity voters. If they vote for one of the marginal candidates, they will be classified as irrational voters.

In the next step, I will identify voters who prefer a front running candidate. If these voters cast their ballot for their most preferred candidate, they are categorized as straightforward voters. If not, they are categorized as irrational voters. These voters should be counted as irrational voters since they do not have to transfer their ballot to another candidate to maximize their expected utility.

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in calculating expected utilities. Since these parties' vote shares are minimal, the impact of dropping the parties should not influence the results substantially.

Finally, I will identify voters who did not turn out to vote. Detecting respondents who did not vote is achieved by using two sets of questions in the surveys.<sup>63</sup> The surveys ask whether or not respondents went to the poll at all. If respondents report that they did not go, they are categorized as voters who abstained. Another question asks what competitor respondents voted for in the plurality component of the system. If respondents answered that they did not vote in the plurality component, they are also categorized as respondents who abstained.<sup>64</sup>

### **Occurrence of Strategic Voting**

Table 6-3 shows the frequency of strategic voting and other types of voting patterns. The result suggests that a dominant strategy among voters who prefer a marginal candidate is to vote sincerely. The result shows that only 3% of the electorate engages in strategic voting in the Lower House election, while only 1% is categorized as strategic voters in the Upper House election. Sincere voting is 9% in the Lower House election, while it is 6% in the Upper House election.

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<sup>63</sup> A potential problem with this method is that voters have a tendency to report that they voted when they did not actually vote. Moreover, we can expect that respondents who are indifferent over competitors or who perceive that their votes do not have a chance to influence an election outcome are more likely to abstain from voting. This may suggest that an overestimation of turnout may be more likely to be found among respondents who fit a particular characteristic, and as a result, it may create a systematic error in the analysis. Indeed, if one compares between how the respondents in the JEDS96 survey reports with the actual turnout rate, she can estimate the overestimation to be about 13 percentage points. However, I will carry out the analysis with survey questions since they will be the best available method to detect who did not vote in an election.

<sup>64</sup> The question that asks what competitor respondents voted for in the PR part of the election is not used in the analysis since the focus should be on the plurality part of the election.

**Table 6-3: Occurrence of Strategic Voting**

CATEGORY	LOWER HOUSE	UPPER HOUSE
Strategy	3%	1%
No opportunity	5%	4%
Sincere	9%	6%
Straightforward	50%	55%
Absent	22%	30%
Irrational	11%	4%
Total	100%	100%
N	963	1329

The category for no opportunity voters is 5% in the Lower House and 4% in the Upper House. This shows that a substantial number of voters cast their ballots for one of the front runners, when they do not find a candidate from their most preferred party. The largest category is straightforward voting. Half (50%) of the electorate belongs to this group in the Lower House, while more than half (55%) belongs to the category in the Upper House. The values for abstention in the Lower House and the Upper House are 22% and 30% respectively. Irrational voting is 11% in the Lower House and 4% in the Upper House.

It is also important to note that there are some possibilities that the above estimates of strategic voting in the plurality section of superposition systems are overestimated, even though an individual level of data are applied instead of an aggregate level data. One is that the percentages of strategic voters in Table 6-3 include voters who do not have to vote strategically to maximize their expected utility in terms of candidates' probability of winning and their utility differences. We discussed how candidates' probability of winning and utility differences need to fit a certain condition to promote strategic voting. Some voters cast their ballots for a less preferred candidate and fit the pattern of strategic voting, but they may fall into the pattern even when they are not voting strategically.

The result also suggests that the percentages of strategic voting in the plurality component of superposition systems seems to be substantially smaller than the percentages that are produced in other regular SMD plurality

systems. The literature on strategic voting suggests that the percentages of strategic voting in regular SMD plurality systems are between 5% and 15% of the electorate (Black 1978, Kim and Fording 2001).<sup>65</sup> For example, Cain (1978) suggests that there is about 15% of the electorate voted strategically in the 1970 British General Election. Blais and Nadeau (1996) report that the percentage of strategic voting in the 1988 Canadian election in the entire electorate is at least 6%.

If we only focus on those who turn out in the plurality component of superposition systems, strategic voting in a superposition system is also smaller than the values that are reported in other countries with a regular SMD plurality system. Black (1978) reports that 12% of those who voted in the 1968 and 1972 Canadian elections voted strategically. This percentage seems to be substantially larger than the percentages obtained from Japan's Lower House election. Strategic voting among those who turn out in the 1996 Lower House election is only about 3%.

## **Conclusion**

The findings reported in this chapter show that strategic voting in the plurality component of superposition systems is rare since it creates voting conditions that prevent voters from voting strategically. The contamination effect in superposition systems is shown to create conditions that reduce the occurrence of strategic voting in superposition systems compared to other

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<sup>65</sup> Kim and Fording (2001) report that the percentage of strategic voting is somewhere between 5% and 10%.

regular plurality systems. Among these conditions, the opportunity factor plays an important role in reducing the occurrence of strategic voting. Moreover, even when voters have an opportunity to vote for their most preferred candidate, the dominant choice of voting pattern is to vote sincerely rather than strategically.

If we analyze voters' behavior by using only aggregate level data, non-opportunity voters may be unknowingly counted as strategic voters. Although it is rather difficult to calculate exactly how much an overestimation of strategic voting takes place with aggregate level data, the opportunity factor seems to be playing a key role in producing a lower number of strategic voting compared to regular plurality systems.

For future research, strategic voting in mixed corrective systems should be reanalyzed by taking the contamination effect into account. The findings in this study suggest the importance of taking the contamination effect into account when we study superposition systems. The argument can be generalized to the studies of corrective systems. In fact, the contamination effect influences voters' behavior more in corrective systems than superposition systems, because how seats are distributed is not independent between the two parts of the election in corrective systems, while they are allocated independently in superposition systems. The reanalysis of corrective systems seems to be especially important since previous studies only used aggregate level data to measure strategic voting.



## **Chapter 7**

### **Impact of Sincere Voting**

Chapter 5 empirically showed that the number of candidates in the plurality section of superposition systems is increased compared to regular plurality systems. Chapter 6 showed that only a few voters engaged in strategic voting in superposition systems. This also seemed to be true, even when they were compared to other regular plurality systems. These results lead us to expect that vote shares are spread across a number of candidates including marginally performing candidates when plurality elections are carried out under superposition systems. Chapters 5 and 6 together then can project that an increase in the number of candidates will lead to an inflation of the number of parties and that the number of parties will be greater than Duverger's Law and the M+1 Rule suggest.

Although the above effect of superposition systems on party system seems to exist, the connection is only indirectly shown so far. For this reason, I will carry out two sets of more direct analysis to make the connection explicit in this chapter. First, I have been arguing that one of the key factors that can explain the increase in the number of parties in superposition systems is how the increase in the number of candidates in plurality districts creates an opportunity for some voters to cast their ballots for a marginal candidate. What this suggests is that if the likelihood of voting for marginal candidates is larger when voters' most preferred competitor is present in their plurality

districts, the number of parties is expected to be inflated. This seems to be especially true since the increase in the number of candidates also inflates the number of voters who prefer marginal candidates.

The second part of the chapter brings the discussion to a district level hypothesis where Duverger's Law is originally designed to work. An earlier analysis focused on individual level data to overhaul the mechanism of how superposition systems inflate the number of parties. In the second part of this chapter, I will focus on district level hypotheses to see an overall impact of superposition systems on party systems by utilizing a bimodality analysis. With a bimodality analysis, I will show that a violation of a Duverger's equilibrium is caused by an increase in the number of candidates.

Cox (1997) developed a bimodality test to analyze the impact of electoral rules on party systems. A bimodality test uses SF ratios to find the impact by using district level data. An SF ratio is the ratio of the second loser to the first and shows the relative strength of the competitors. It can show whether or not a district is in a Duvergerian equilibrium or a non-Duvergerian equilibrium. I will apply the SF ratio tests in the second part of this chapter and discuss how the increase in the number of candidates lead to the creation of a non-Duvergerian equilibrium by using aggregate level data.

### **Significance of Opportunity Factor**

We need to determine whether or not the opportunity factor, i.e. whether or not a voter's most preferred candidate is present in her district,

plays a significant role in increasing the number of voters who cast their ballots for marginally performing candidates. If the opportunity factor plays a significant role for voters to place ballots for marginal candidates, the number of parties will be inflated in the plurality component of superposition systems.

Rational voters have three choices in an election. The first is to vote for a marginal candidate. The second is to vote for a front running candidate. The third is to abstain from voting. Under such circumstances, if voters who have an opportunity to vote for their most preferred candidate actually cast their ballots for a marginal candidate significantly more than other voters who do not have an opportunity, we can expect that the number of parties will be inflated. On the other hand, if there is no significant difference in the behavior of voters with and without an opportunity, the number of parties will not be inflated. That is, if voters cast their ballots for a front runner or simply abstain from voting, the number of parties will not be inflated.

As mentioned earlier, the Lower House uses a superposition system with single member district (SMD) and proportional representation (PR) rules. The Upper House uses single nontransferable vote (SNTV) and PR rules. The hypotheses are as follows:

*Hypothesis 1a: The likelihood of voting for marginally performing candidates instead of abstaining in the Lower House election increases when voters' most preferred competitors are present in their districts.*

*Hypothesis 1b: The likelihood of voting for marginally performing candidates instead of abstaining in the Upper House election increases when voters' most preferred competitors are present in their districts.*

*Hypothesis 2a: The likelihood of voting for marginally performing*

*candidates instead of voting for one of the top two candidates in the Lower House election increases when voters' most preferred competitors are present in their districts.*

*Hypothesis 2b: The likelihood of voting for marginally performing candidates instead of voting for one of the top  $M+1$  candidates in the Upper House election increases when voters' most preferred competitors are present in their districts.*

### ***Methods and Data***

The dependent variable contains three categories: voting for a marginally performing candidate, voting for a front running candidate, and abstaining from voting. The dependent variable is created based on the outcome variable that was created in the previous chapter. If a respondent is coded as a strategic voter, he is coded as a voter who casts a ballot for a front running candidate. If a respondent is coded as a non-opportunity voter, he is also coded as a voter who votes for a front runner. A voter who belongs to the category of sincere voters, he is categorized as a voter who casts his ballot for a marginal candidate. If a voter is categorized into the group of abstention, he is coded as a voter who abstains from voting. For voters who are categorized as irrational, I will categorize them as voters who vote for a marginal candidate or voters who vote for a front runner, depending on how they voted. Straightforward voters are excluded from this part of the analysis since the analysis should focus on voters who prefer a marginal candidate. In the case of the Lower House, voters who prefer the third ranked competitor or

lower are selected. In the Upper House, voters who prefer the competitor who is ranked lower than  $M+1$  are selected.<sup>66</sup>

The independent variable of interest is whether or not voters' most preferred competitors are present in their districts, so that they have an opportunity to vote for their most preferred candidate. If a voter has an opportunity to vote for the most preferred competitor, this particular voter is coded 1. Otherwise, the voter is coded 0. As was the case in the previous chapter, voters' preferences over candidates are determined based on their party preferences. If there is a candidate who is from their most preferred party, the voters are coded as having an opportunity.

I will also add control variables. These variables include factors that may be related to strategic choices of voters. For example, if voters have a sense of citizen duty to participate in elections, they are less likely to abstain from voting, even when they are indifferent over multiple candidates. The questions that are asked in the two surveys ask respondents whether or not voting is one of a citizen's duties. There are five answer categories, including "agree," "somewhat agree", "neither," "somewhat disagree," and "disagree."<sup>67</sup>

The second control variable is whether or not respondents support a party. If voters support a party, they are more likely to turn out to vote compared to other voters who do not support a party. This is because these

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<sup>66</sup> For the category of voting for a front running candidate, the classification will be different between the Lower House and Upper House. Since the Lower House uses an SMD rule for the plurality section of the mixed system, those voters who cast their ballots for the top two most popular candidates are included in this category. On the other hand, the Upper House uses a medium size district rule, so voters who cast their ballots for the top  $M+1$  candidates will be classified into this group.

voters tend to prefer one candidate to others with more intensity. These voters are more likely to care about who is elected into an office. Similarly, respondents who support a party may be less likely to vote strategically. A stronger intensity may discourage to desert their most preferred candidate even when the candidate is trailing in their district. Other usual socio-economic variables are also included in the models.

Multinomial logit models are used to test the hypothesis for both lower and upper house elections since the vote choice variables (the outcome variables) are nominal level variables and have three categories.<sup>68</sup> The three categories include voters who voted for a marginally performing competitor, voters who voted for a competitor with a larger chance of winning, and voters who abstained.<sup>69</sup>

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<sup>67</sup> See Appendixes 6-1 and 6-2 for question wordings.

<sup>68</sup> There are multiple ways to test the hypotheses. One way is to perform two logit models with sincere voting and abstention as two outcomes followed by sincere voting and strategic voting as two outcomes. Even though coefficients and test statistics may vary, this approach produces substantively the same results as a multinomial logit model. Another way is to perform multinomial probit models. Since multinomial probit models do not assume the IIA assumption, it is more appropriate than multinomial logit models. However, since there is no access to a statistical software that can perform multinomial probit models, I will use multinomial logit models. Moreover, it is often mentioned that the probit and logit models produce substantively similar results. The probit models are also much more difficult and time consuming to produce results than the logit models.

<sup>69</sup> The model is formally expressed as follows:

$$\text{Prob}(Y_i = j) = \frac{\exp(\beta_j'x_i)}{\sum \exp(\beta_j'x_i)} \quad (1)$$

## Results

The results from both the Lower and Upper Houses are shown in Table 7-1.<sup>70</sup> The results that are shown in the table support the two sets of hypotheses. The upper portion of the table shows the results for Hypothesis 1a and 1b that test whether or not the likelihood of voting for marginally performing candidates instead of abstaining increases when voters' most preferred competitors are present in their districts. Hypothesis 1a is the test for the Lower House election, while Hypothesis 1b is that for the Upper House election. The coefficient is  $-2.006$  for the OPPORTUNITY variable in the Lower House ( $p < 0.01$ ).

The coefficients in multinomial logit models can be converted into an odds ratio by raising  $e$  to the coefficient. For example,  $e^{-2.006}$  yields 0.13. Substantively, this suggests that after controlling for the other variables, the likelihood of abstention among voters who have an opportunity to vote for their most preferred competitor is about one tenth compared to voters who do not have an opportunity. Similarly, the coefficients can be expressed as changes in predicted probabilities after controlling for other variables.<sup>71</sup> Table 7-2 summarizes the results. According to the table, the probability of

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where  $Y$  and  $x$  represent the dependent and independent variables,  $\beta$  represents coefficients (Greene 1990).

<sup>70</sup> There is no multicollinearity since the values for bivariate correlation between the variables are smaller than or equal to 0.4 for both houses.

<sup>71</sup> See Appendix 7-1 for the calculation of predicted probabilities.

**Table 7-1: Impacts of Presence of Most Preferred Competitor**

OUTCOME	VARIABLES	B <sub>s</sub> LOWER HOUSE	B <sub>s</sub> UPPER HOUSE
Abstention	OPPORTUNITY	-2.006*** (0.516)	-1.618*** (0.516)
	DUTY	-0.807*** (0.274)	0.228 (0.156)
	PARTY SUPPOERT	-1.093* (0.510)	-1.254** (0.605)
	SEX	0.354 (0.469)	-0.603 (0.552)
	AGE	-0.024 (0.023)	-0.042* (0.022)
	EDUCATION	-0.094 (0.184)	-0.911** (0.402)
	INCOME	0.028 (0.129)	0.134 (0.112)
	UNION	0.051 (0.602)	0.074 (0.622)
	CITYSIZE	0.191 (0.159)	0.105 (0.253)
	Intercept	5.417 (1.903)	4.179 (2.068)
Front runners	OPPORTUNITY	-2.402*** (0.482)	-2.788*** (0.508)
	DUTY	-0.268* (0.313)	-0.152 (0.144)
	PARTY SUPPORT	-0.610 (0.455)	-0.110 (0.630)
	SEX	0.362 (0.440)	-0.013 (0.515)
	AGE	0.019 (0.021)	0.002 (0.020)
	EDUCATION	-0.180 (0.177)	-0.070 (0.368)
	INCOME	-0.030 (0.120)	-0.018 (0.107)
	UNION	-0.264 (0.617)	-0.636 (0.663)
	CITYSIZE	0.146 (0.149)	0.511** (0.246)
	Intercept	1.945 (2.000)	0.508 (1.952)



**Table 7-1 Continued**

	LOWER HOUSE	UPPER HOUSE
Pseudo R <sup>2</sup>	.376	.434
N	166	145

Note: Dependent variables are composed of three categories, including individuals who voted for a marginal competitor, voted for a front runner, and abstained from voting. Voters who voted for competitors who are marginally performing (i.e., sincere voters) are treated as the base category. Voters who voted for one of the top two candidates in the SMD or one of the top M+1 ranked competitors in the medium size district (i.e., strategic voters) are considered as front runners. These front runners are coded 2. Voters whose most preferred competitors are present are coded 1, otherwise 2. The explanatory variables do not have a problem of multicollinearity since the values for bivariate correlations between the variables are smaller than .32 for Lower House and smaller than .039 for Upper House. Fifty-four percent of the cases are correctly predicted for Lower House, while 54% is correctly predicted for Upper House.

Source: JEDS96, JES83

**Table 7-2: Predicted Probabilities- 1996 Lower House Election and 1983 Upper House Election**

	LOWER HOUSE	UPPER HOUSE
	<b>Marginal competitor</b>	<b>Marginal competitor</b>
No opportunity	0.08	0.18
Opportunity	0.46	0.68
	<b>Abstention</b>	<b>Abstention</b>
No opportunity	0.32	0.26
Opportunity	0.24	0.19
	<b>Front runners</b>	<b>Front runners</b>
No opportunity	0.60	0.56
Opportunity	0.30	0.13

abstention decreases from 0.32 to 0.24, when voters' most preferred candidate is present in their district.

The result for the Upper House election yields similar results. The coefficient for the OPPORTUNITY variable is  $-1.618$  and is statistically significant ( $p < 0.01$ ). This means that the likelihood of abstention is one fifth when voters' most preferred candidate is available compared to voters whose most preferred candidate is not available ( $e^{-1.618} = 0.20$ ). Substantively, this means that the probability of voting for a front runner decreases from 0.26 to 0.19 (Table 7-2).

The lower portion of the table shows the results for testing Hypotheses 2a and 2b. Hypotheses 2a and 2b test whether or not the presence of most preferred competitor increases the likelihood of voting for marginally performing candidates, instead of voting for a front running candidate. The coefficients for the OPPORTUNITY variable are  $-2.402$  ( $p < 0.01$ ) for the Lower House and  $-2.788$  ( $p < 0.01$ ) for the Upper House. The coefficient of  $-2.402$  suggests that the likelihood of voting for a front runner is about one tenth when voters' most preferred competitor is present compared to voters' most preferred candidate is not present ( $e^{-2.402} = 0.09$ ). Similarly, the coefficient of  $-2.788$  means that the likelihood of voting for a front runner is less than one tenth ( $e^{-2.788} = 0.06$ ). According to Table 7-2, the probability of voting for a front runner decreases from 0.6 to 0.3 in the Lower House and from 0.56 to 0.13 in the Upper House.

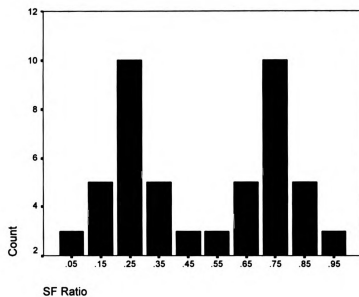
The result for hypotheses 1 and 2 suggest that the presence of voters' most preferred competitors encourage them to vote for marginally performing competitors, instead of abstaining from voting or voting strategically. Table 7-2 supports these tendencies clearly. Moreover, these tendencies are shown to be statistically significant (Table 7-1). These suggest that the plurality section of a mixed system has tendencies to inflate the number of parties, and as a result, Duverger's Law or the M+1 Rule is violated.

The effect of other variables is not consistent across the two houses except the PARTY SUPPORT variable. The coefficients for the party support variable for abstention are  $-1.093$  for the Lower House and  $-1.254$  for the Upper House and are statistically significant ( $p < 0.1$  and  $p < 0.05$  respectively). These coefficients mean that voters are less likely to abstain when they support a political party. As mentioned, this may be related to voters' intensity in preferences. Voters who support a party are more likely to prefer a party more intensely than other voters. As a result, these voters are more likely to turn out.

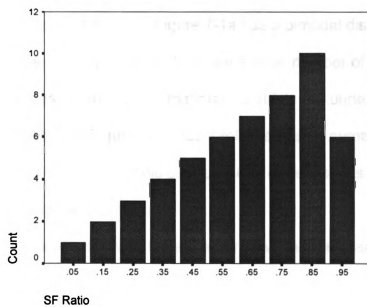
### **SF Ratio Test**

Cox (1997) applies bimodality tests to assess the existence of strategic voting. The bimodality test is done by calculating an SF ratio, the ratio of the second loser to the first, for each district. When the contest between the first loser and the second is close, the ratio approaches 1. On the other hand, when the contest is not close, the ratio becomes close to 0. Under a

**Figure 7-1a: Bimodal Distribution of SF Ratios**



**Figure 7-1b: Non-bimodal Distribution of SF Ratios**



Duvergerian equilibrium, the SF ratio will be near 0, while under a non-Duvergerian equilibrium, the ratio should approach 1. This is because Duverger's Law and the M+1 Rule suggest that in plurality districts, the second loser or other candidates who are ranked lower than the second loser have difficulty in obtaining votes. Under such circumstances, the ratio of the second loser to the first loser will approach 0. However, when Duverger's Law or the M+1 Rule is not at work, the vote shares between the first loser and the second will be similar. The SF ratio then should approach 1. If we classify districts based on SF ratios, we will see a large number of districts with the SF ratio of 0 or near 0, when a Duvergerian equilibrium is maintained among these districts. By using the approach above, Cox assesses the existence of strategic voting. Cox suggests that strategic voting is evident when the distribution of SF ratios is bimodal. As an illustration, Figure 7-1a and 7-1b show two distributions of districts. Figure 7-1a has a bimodal distribution, while 7-1b does not. In Figure 7-1a, there are a large number of districts with SF ratios of 0 or near 0, suggesting that many districts are under a Duvergerian equilibrium. Figure 7-1b has a relatively large number of districts with an SF ratio of 1 or near 1. This suggests that more districts tend to be under a non-Duvergerian equilibrium.

The analysis with SF ratio tests is informative but the assessment of strategic voting in this method can be problematic even though Cox applies them to assess strategic voting. This is because the use of aggregate level data to analyze an individual level phenomenon may cause an ecological

fallacy. As it was suggested in an earlier chapter, it is important to take the opportunity factor into account. The application of a bimodality hypothesis to assess strategic voting ignores the existence of different voting environment. That is, there are some voters who find a candidate who is from their most preferred candidate in their plurality districts, while there are others who do not find their most preferred candidates. Under such circumstances, the latter group of voters will transfer their votes to a candidate who is available. If they transfer their votes to a front runner, it will make the SF ratio closer to 0, while the true cause of the creation of the above pattern of voting behavior may be how political parties place their candidates.

Even though the use of a bimodality hypothesis to assess strategic voting could be problematic, SF ratios are a useful tool to assess the impact of superposition systems on party systems as a whole. We can analyze how the increase in the number of candidates impacts the creation of a Duvergerian equilibrium because a Duvergerian equilibrium is a district level phenomena.

If we classify districts according to the number of candidates in plurality districts and calculate SF ratios, we can examine how the increase in the number of candidates may influence a Duvergerian equilibrium. For example, we should see a relatively large number of districts with the SF ratios of 0 or near 0 when the number of candidates is small. On the other hand, when the number of candidates in districts is large, we should see more districts with a ratio of 1 or near 1. The above pattern should be true because the increase in

the number of candidates tend to create more voters who prefer a marginal candidate. Moreover, these voters' likelihood of voting for marginal candidates increases when their most preferred candidates are placed in their districts. Since political parties create an incentive to place candidates in the plurality component of superposition systems, the number of candidates is larger. This in turn leads to a violation of Duverger's Law.

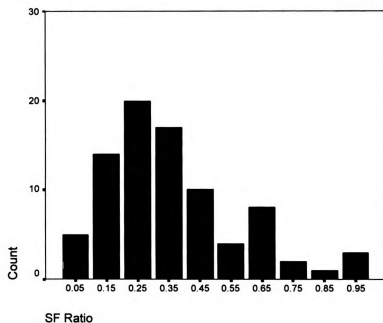
We can apply the same method to the plurality component of the Japanese Upper House elections. For the Japanese Upper House, multimember districts are used instead of single member districts. To make Japan's Upper House elections comparable with the Lower House elections, I will classify districts based on how many excess candidates are present. For example, if there are five candidates, where the district magnitude is two, the excess number is two given  $5-(2+1)$ , based on the  $M+1$  Rule. When there are few excess candidates, districts have a tendency to be in a Duvergerian equilibrium. This leads to create a large number of districts with SF ratios of 0 or near 0. When there are more excess candidates in a plurality district, we should see a larger number of districts with an SF ratio of 1 or near 1.<sup>72</sup>

### *Results*

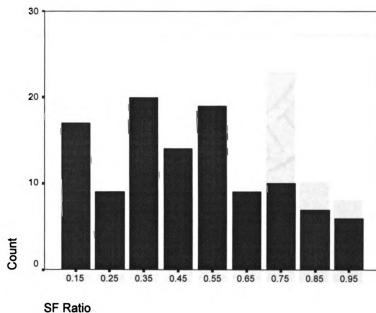
The results of the SF ratio tests support the idea that the increase in the number of candidates will lead to the creation of a non-Duvergerian equilibrium. Tables 7-2a through 7-2d show the results for Japan's Lower



**Figure 7-2a: SF Ratios in the 1996 Lower House Election - 2-3 Candidates**

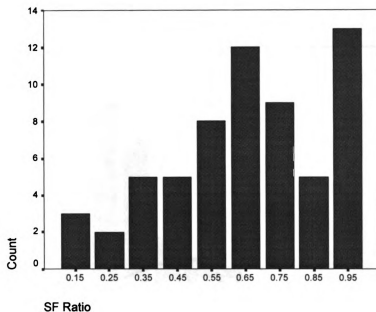


**Figure 7-2b: SF Ratios in the 1996 Lower House Election - 4 Candidates**

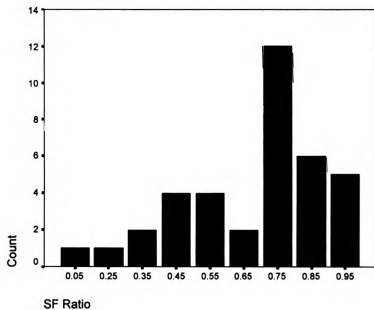


<sup>72</sup> Cox (1997) uses district magnitude to classify districts. However, since my focus here is to find the impact of the increased number of candidates in plurality districts of a superposition system, I classify based on the number of candidates.

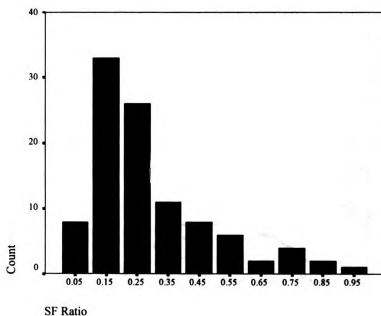
**Figure 7-2c: SF Ratios in the 1996 Lower House Election - 5 Candidates**



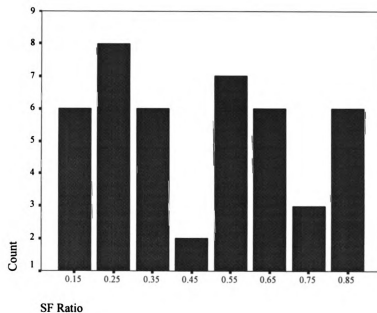
**Figure 7-2d: SF Ratios in the 1996 Lower House Election - 6 Candidates**



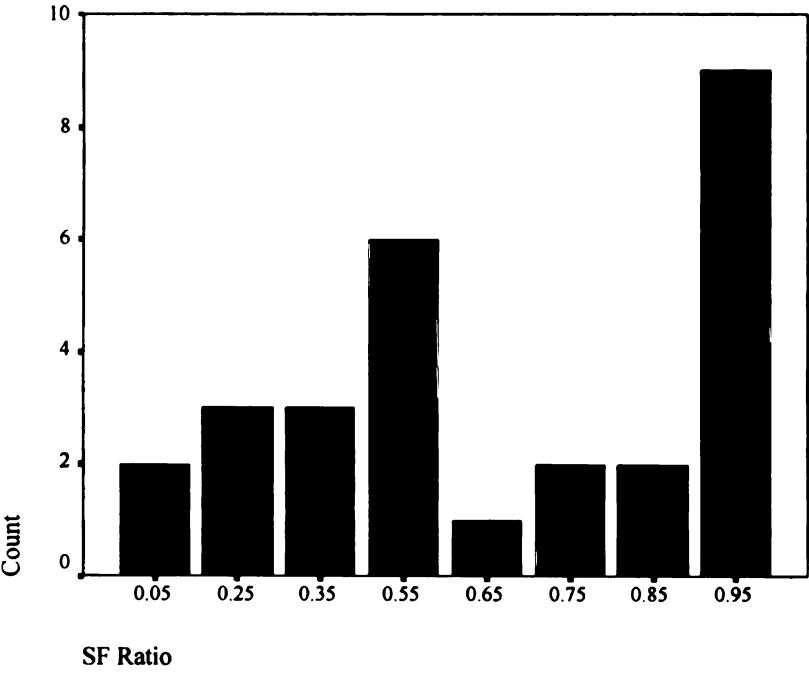
**Figure 7-3a: SF Ratios in the Upper House Election (1983-1992) - 0 to 1 Excess Candidates**



**Figure 7-3b: SF Ratios in the Upper House Election (1983-1992) - 2 Excess Candidates**



**Figure 7-3c: SF Ratios in the Upper House Election (1983-1992) - 3 or More Excess Candidates**



House election. When there are two to three candidates in a district, we see more districts with an SF ratio of 0 or near 0, suggesting that these districts are in a Duvergerian equilibrium (Table 7-3a). However, the distribution of SF ratios shifts as the number of candidates increases. When there are six candidates in districts, a large number of districts produce an SF ratio that is close to 1.

Similarly, Figure 7-3a through 7-3c show the results for the Upper House elections between 1983 and 1992. The figures also support that the increase in the number of candidates lead to a violation of the M+1 Rule. When there is only one excess candidate, the SF ratios are close to 0 among a large number of districts. However, the tendency to produce the SF ratios of 0 changes, as the excess number of candidates increases. This is similar to what happened in the Lower House election. When there are three or more excess candidates, districts are more likely to produce the SF ratios that are closer to 1.

## **Conclusion**

The plurality component of superposition systems is shown to produce a larger number of parties than Duverger's Law and the M+1 Rule suggest. This is true because parties have an incentive to place their candidates in the plurality component of a superposition system since they can get an extra share of vote in a corresponding PR district. As a result, a large number of candidates is placed. This leads to an increased opportunity for voting for

voters' most preferred competitor. This is especially true for voters whose most preferred competitor happens to be performing marginally.

The first part of this chapter showed that the existence of the relationship between the opportunity factor and the vote choice variable. It suggests that the increased number of candidates in the plurality section of a superposition system is important in explaining an inflated number of parties. It also shows that voters play a major role in inflating the number of parties. However, voters do so only under the condition that parties place a larger number of candidates in districts. The second part of this chapter also supports that an increase in the number of candidates leads to a violation of a Duvergerian equilibrium. This leads us to conclude that the plurality component of superposition systems tends to inflate the number of parties than regular plurality systems do. If an SMD plurality rule is combined with a PR rule, the SMD part is more likely to produce a number of parties that is larger than a standard SMD plurality rule would produce. If a multimember plurality system is used with a PR rule, the number of parties will be larger than the number of parties that may be produced by a regular multimember plurality rule.

### **Implication**

Perhaps one of the most important implications of this dissertation is that it will help answer the question of whether or not voters play a significant role in shaping party systems. A number of researchers have argued that

political elites, such as politicians, are the ones who play the principle role in shaping party systems (Meehl 1977; Riker 1982; Cox 1997). This is called “the elite-level hypothesis,” and its proponents begin with the notion that it is political elites who are experts in politics. This means that it is they who know the electoral potential of candidates who are in district elections, and, as a result, it is they who decide whether or not to enter a district contest.

According to the literature, party elites make such choices based on their evaluations of a candidate's potential for victory. The point here is that decisions on entry by political elites shape party systems, which then relegates any role voters may play in shaping a party system to obscurity.

What this point of view misses is that parties' decisions on candidate entry must consider how many votes a potential candidate is likely to receive. Specifically, elites must consider whether or not electors will avoid wasting their votes and cast their ballots strategically. The view that voters behave in this way is called “the voter based hypothesis” (Cox 1997), and its proponents argue that electors cast their ballots for candidates who are more likely to win a seat by in fact deserting their most preferred candidate. There is evidence that voters behave in this way (Barnes et al. 1962; Fisher 1973; Jesse 1988; Bawn 1993; Johnston and Pattie 1991; Heath et al. 1991; Niemi, Whitten and Franklin 1992; Crewe 1987; Catt 1989; Butler and Kavanagh 1988). What I showed is that voters rarely engage in strategic voting. This suggests that voters do not play a role in reducing the number of parties, since voters are

more likely to vote sincerely, although they contribute to inflate the number of parties.

It is also important to note that the support for contamination effects will imply that researchers need to be more cautious when they study mixed electoral systems. More specifically, many researchers carry out their studies by assuming that each component of the system works independently of the other (Jesse 1988; Bawn 1993; Cox 1997; Moser 1997, Reed 2000). That is, as if the plurality component of a mixed system works independently of the PR section of the system. Jesse (1988), Bawn (1993), and Cox (1997) use the German mixed system in their studies, but as stated above, the German mixed system is different from the Japanese style mixed systems in that the PR section of the system is used to compensate for the disproportionality that is caused by the plurality rule. However, the argument on the independence assumption is also relevant for the German mixed system, since contamination effects are also expected to be at work in the German mixed system. It may be fine to assume that the two components of a mixed system work independently since researchers often need to start building a theory with assumptions that make their theory simple. However, it is also important to be aware that the two components of a mixed system do not work independently and thus may influence conclusions.

What the above also leads to is that mixed electoral systems will create a large number of wasted votes in the plurality component of the system, and thus produces a more disproportionate result, compared to regular plurality



systems. This happens especially because the mixed system will promote political parties to place candidates. The increased number of candidates in turn attracts voters to spread their votes across candidates. However, the seat distribution of the plurality section does not reflect parties' vote shares. As a result, the system produces more disproportionate results.

## **Part IV.**

### **Conclusion**

## **Chapter 8**

### **Conclusion: Party Systems in Democracies with Mixed Superposition Systems**

In this dissertation, mixed superposition systems are shown to inflate the number of parties. This happens because political parties place their candidates even when these candidates have little chance of winning, and voters cast their ballots for these candidates. As a result of how these political actors behave, the plurality component creates a number of parties that is greater than Duvergerian equilibria suggest.

What policy implications do these findings have on Japan's party politics? Are there any implications in terms of how superposition systems affect democratic performance? Are the effects generalizable to other countries? In this concluding chapter, I assess these questions and consider the implications of their findings.

#### **Impact of Superposition Systems on Democratic Performance**

Although superposition systems influence democratic performance in many ways, three aspects stand out more important than others. First, superposition systems influence politics by dispersing political power among multiple political parties. Second, these systems promote political durability in which a party would maintain a ruling party status for a long period of time. Third, superposition systems seem to promote party-based politics than candidate-based politics. This can lead the Japanese politics to diminish the

occurrence of corruption. In this section of this chapter, I discuss how superposition systems influence democratic performance with regard to these three aspects in more detail.

The first impact of superposition systems on democratic performance is how they disperse political power among multiple political parties. With the use of a superposition system, political power would be shared by multiple parties since it is more likely to create a multiparty system, instead of a two party system.<sup>73</sup> The tendency that superposition systems create a multiparty system has a profound implication on how a democracy with a superposition system may function. In particular, Lijphart (1999) states that democracies can be classified into two types: a majoritarian and a consensus type. In the majoritarian model, political power tends to concentrate on the bare majority whereas it is dispersed among multiple parties in the consensus type.

According to Lijphart, there are several factors that make democracies more majoritarian or consensus. However, one of the most important factors that classify different democracies into the two types is how party systems are set up.<sup>74</sup> More specifically, having a two party system is one of the conditions that pushes a democracy to become a more majoritarian type because the two party system tends to concentrate political power into a single party. This is because the majority of the seats in the legislature tends to be held by a single party, which, in turn, creates a strong cabinet leadership. On the other

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<sup>73</sup> It may be possible to produce a two party system if there is only one issue dimension.

<sup>74</sup> There are other factors that influence what type of democracy may be created. These include factors such as whether or not constitutions are written and whether or not a federal or unitary government is exercised

hand, with a multiparty system, the cabinet leadership tends to be weak since a coalition of multiple parties is often necessary to keep a majority status in the legislature. As a result, a compromise between parties is likely to take place when political parties attempt to pass a bill in the Diet. The necessity of a compromise between parties in turn diffuses political power to the hands of multiple parties.

What the above means in terms of the impact on a democracy is that it may have an ability to push a democracy to become a consensus type rather than a majoritarian type. This dissertation shows that a superposition system with single member district (SMD) plurality rule and proportional representation (PR) rules creates a multiparty system by using the Japanese Lower House elections. Similarly, by using the Japanese Upper House elections, a superposition system with a single nontransferable vote (SNTV) rule and a PR rule was shown to create a multiparty system. These results support that superposition systems promote a consensus type democracy by dispersing political power among multiple parties. Under such circumstances, a cabinet and the Diet is more likely to be controlled by a coalition of parties, which will also force parties to share political power.

If we observe the election results in the Japanese case, it is evident that Japanese politics reveals to function like a consensus democracy. More specifically, the politics in Japan has been run by the coalitions of parties since it started to use a superposition system. After the 1996 Lower House election, the Liberal Democratic Party (LDP), the Social Democratic Party

(SDP), and the New Party Harbinger (NPH) formed a coalition. Although the NPH only had two seats, it played a pivotal role in the Diet. For example, Masayoshi Takemura, the head of the NPH, was the minister of the Finance, although his party was a marginal party.

Currently, the coalition among the LDP, the Clean Government Party (CGP), and the Conservative Party exists, and as a result, power sharing is continuously present in Japanese politics today. For example, the CGP has been pushing to increase the district magnitude in the plurality component of the Lower House elections. On the other hand, the LDP has been trying to decrease the number of seats that are allocated by the plurality component of the system. The LDP successfully decreased the number of seats that are distributed through the PR component after the 1996 election. It was decreased from 200 to 180. Currently, the two parties have been compromising and discussing about increasing the district magnitude in city areas.

The second influence by superposition systems on democratic performance has to do with the political durability. How long the government lasts is one of the important factors that indicates how healthily a democracy is functioning. If a democracy has a series of short-lived governments, it may not be functioning effectively. This is because the implementation of policies takes a certain period of time. If the government does not last long enough, policy implementation will not be carried out effectively. More importantly,

political instability may create an opportunity for the rise of a group that supports an extreme political view.<sup>75</sup>

Although the production of a stable political environment is necessary for an effective democracy, the government that lasts too long is not considered a healthy democracy, either. For example, postwar Japanese politics is characterized as a predominant party system where the LDP took a control of the government for about fifty years. Because of the predominant party system, Johnson (1982) calls Japan a “soft authoritarian” state. Similarly, Pempel (1990) raises the question of the quality of democracies in other countries where single party dominance is seen. These countries include Sweden and Israel. The above suggests that a democracy needs to be stable but it also requires alternation of the party in power.

The use of a superposition system has an implication on political durability because they influence the configuration of party systems. Two party systems are said to alternate the ruling party between two major parties. Fragmented party systems may risk political instability. A one party predominant system may keep the same ruling party over some decades. I argue that superposition systems may promote political durability since they discourage a fragmentation of party systems. However, this positive effect on political stability may promote a political stagnation by keeping the same political party in power for a long period of time.

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<sup>75</sup> An example of this is the case under the Nazis Germany.

This happens because superposition systems use both a plurality rule and a PR rule. The plurality section discourages political parties from splitting since the plurality section of the system works unfriendly to marginal parties. That is, the presence of a plurality rule discourages candidates from defecting their parties. On the other hand, the PR rule encourages candidates to join a party. The reason for these empirical patterns is rather simple. Candidates cannot run in the PR section of the election if they do not belong to a party. As a result, candidates try to join a party to maximize their chances of winning. The above suggests that superposition systems may be effective in creating a stable political environment.

However, the promotion of such a stable environment may mean that superposition systems create a political stagnation by keeping the same political party as a governing party for many years. At first glance, the presence of a plurality rule in a superposition system seems to make the alternation of ruling parties frequent. However, since superposition systems have the contamination effects, the total amount of voters who swing from a ruling party to another in an election may not be substantial.

More specifically, if voters have a tendency to cast their ballot strategically, it is possible to see a substantive number of swing voters who change their voting patterns. This is the case because strategic voters are the group of people whose most preferred candidate is a marginal performer. Since their most preferred candidate does not have a chance to win, voters transfer their ballot to a candidate who is more likely to win. This means that



strategic voters should be considered as a group of voters who are not committed to the candidate whom they vote for. In other words, strategic voters can swing from one party to another in an election and can give an impact on the election outcome. In a superposition system, since a large number of voters cast their ballots sincerely in the plurality section of superposition systems, such a substantive amount of swing is less likely to occur.

The above logic on the frequency of the alternation of ruling parties leads us to believe that Japan's superposition system may not be so helpful to improve Japan's democratic performance, other things being equal. The use of an SMD plurality rule in the Lower House does not necessarily increase the occurrence of the alternation of power compared to the old SNTV rule that was used before the adoption of the superposition system. This leads us to conclude that the new rule may not be so helpful to promote the creation of a responsive party system that is attentive to the public.

Similarly, the alternation of power in the Upper House would not be frequent. Indeed, the number of occurrences would even be less than that of the Lower House. Instead of using an SMD plurality rule, the Upper House uses an SNTV rule, which is the same as the old Lower House system. The frequency of the alternation is less likely under the conditions, since the amount of strategic voting is smaller than that of the SMD plurality rule.

The third is how superposition systems promote party based politics and diminish the occurrence of corruption. One of the goals of the electoral

reform in implementing a superposition system in Japan's Lower House was to regain political trust among the public by eliminating corruptions. It seems that the adoption of a superposition system in Japan has helped to improve the corruption problem.

More specifically, since the adoption of a superposition system in the Lower House, corruption has been more controlled, although it has not eliminated corruption.<sup>76</sup> We saw series of corruption one after another throughout the post war Japanese politics.<sup>77</sup> It is said that the corruption problem was so serious that few other industrial countries were worse than that in Japan (Reed 1996). Although corruption among bureaucrats and some politicians is still seen after the implementation of a superposition system, they seem to be the ones who still practice distributive politics that were developed under the old SNTV system.<sup>78</sup> This leads us to believe that the adoption of the mixed system might have helped to improve the situation, although one can argue that the diminished level of corruption is coincidental with the change in other aspects of electoral laws and that the superposition system did not play a part.

Nonetheless, the fact that we see an improvement after the implementation of a superposition system in the Lower House may suggest that the electoral reform probably helped to diminish the occurrence of corruption. This argument is especially plausible if we reconsider how a

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<sup>76</sup> This does not mean that corruption has been eliminated. Indeed, we may still see corruption since the change in institution cannot improve on the problem over night.

<sup>77</sup> See Fukui and Fukai (1996) and Inoguchi (1997).

<sup>78</sup> For example, Helweg (2000) states that corruption is dying.

superposition system influences the behaviors of political actors. This has to do with the fact that superposition systems discourage intra-party competitions. Before the adoption of a superposition system in the Japanese Lower House, Japan used a multimember district system with an SNTV rule, in which major parties had to place more than one candidate in a district to win a majority of seats in the Lower House. This encouraged the LDP to create factions and candidates to develop a tie with local businesses, including construction companies. The promotion of pork barrel politics then was inevitable, while broad national interests were downplayed.

The decreased level of intra-party competitions under the superposition system is evident empirically if we observe how political parties placed their candidates. In particular, in the plurality component of the system, political parties placed only one candidate, and, as a result, candidates can promote themselves in elections by emphasizing on policy differences based on party platforms. In the plurality component, voters would choose their most preferred party, and as a result, inter-party competitions were promoted instead of intra-party competitions. It is also said that each faction in the LDP has been raising less money since the mixed system was adopted in 1994 and has less political power. We can find some evidence that supports the above. The Yomiuri Newspaper suggests that the factions that existed under the old SNTV system has weakened, while political parties such as the LDP is strengthening its party leadership (January 6, 2002).

It is worthwhile to point out that the superposition system in Japan's Upper House also promotes inter-party competitions, compared to the standard SNTV rule, even though it partly uses the SNTV rule. Despite the use of the SNTV rule, intra-party competitions are not encouraged in the Upper House because the district magnitude is small in most of the districts. As Chapter 3 reveals, about forty-two districts out of forty-seven districts have a district magnitude of either one or two. Under such circumstances, it is less frequent to see candidates from the same party compete against each other in the same district, although this does happen sometimes. The point is that the frequency is much less compared to that in the old SNTV rule in the Lower House elections.

Recently, the politicians in Japan have been discussing about increasing the district magnitude in the plurality component of the system in the Lower House elections. While this change may concern some observers since the change may promote intra-party competitions, the impact on corruption will not be substantial. This is especially because the district magnitude will be increased from one to two only in certain city areas. It is designed in this way since one of the coalition partners of the LDP, the CGP, can win some seats in the plurality component of the election since their supporters mainly live in the city areas. Moreover, although the district magnitude may increase in the city areas, it is unlikely that the LDP will place more than one candidate in these areas since the performance of the LDP candidates are not strong. If the LDP places more than one candidate in

these areas, it is possible that both candidates may lose, because of over-placement of candidates. Additionally, placing one candidate made the party more likely to secure one seat.<sup>79</sup> As a result, corruptions are less likely to arise. As long as two candidates from the same party do not enter into a single district, politicians do not have an urge to create a strong tie with local businesses.

However, it is important to note that the above does not necessarily mean that superposition systems can push the major party to pass bills that may reflect general national interests. Politicians may place importance on national interests instead of local interests under the new system, however, these emphasis do not necessarily lead to the effective production of national public policies. In particular, superposition systems create a multiparty system. Under these conditions, a coalition government is likely to be formed. What this means is that compromises are necessary among the political parties in the coalition to promote their nationally based issues. As a result, politics may not be changed dramatically.

### **Generalizability of the Japanese Findings**

To consider the generalizability of the findings in the Japanese case to other countries, two sets of issues stand out more importantly than others. The first set of issues is how political or social environment may interfere with

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<sup>79</sup> Brown and Patterson (1999) suggest that the Japanese political parties engage in rational behavior, in which they place candidates strategically so that they can maximize the number of seats. This suggests that the LDP is less likely to place more than one candidate in the city areas.

the tendency of superposition systems to create a multiparty system. The second is how the arrangement of electoral institutions, such as the percentage of seats distributed by a PR rule, may interfere.

Although both sets of issues look potential in influencing the effects of superposition systems, I argue that only the second set is influential in inhibiting a superposition system to promote a multiparty system. Regarding the first set of issues, a large number of countries use a mixed superposition electoral system today. These countries are geographically spread around the world. For example, there are some countries that are located in Asia, such as South Korea and Taiwan. Many countries in the former Soviet Union use a superposition system. These countries include Armenia, Azerbaijan, Georgia, Russia, and Ukraine. We can also find some countries with a superposition system in Africa. Guinea, Senegal and Seychelles are the examples.<sup>80</sup> Moreover, there are other countries outside of these areas that use a superposition system. These countries include Croatia and Mexico.

Since these countries geographically spread around the world and are greatly different in their social and political background, we may have an impression that the differences in background may change the outcome that a superposition system creates a multiple number of parties. However, I suggest that the difference in social or political background may not be so influential in reducing the number of parties.

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<sup>80</sup> Most of these countries adopted a superposition system in the 1990s.

More specifically, Duverger's propositions state that a two party system is produced if an SMD plurality rule is applied while a multiparty system is created if a PR rule is used. However, this tendency does not hold if other factors interfere. One of the most powerful factors that interferes is social cleavages (Taagepera and Grofman 1985, Ordeshook and Shvetsova 1994). If multiple social cleavages exist, the number of parties may not be reduced to two even when an SMD plurality rule is used. This seems to be especially true if multiple cleavages are salient in society.

However, since the argument in this dissertation is that superposition systems produce a multiparty system, the above argument is not necessarily applicable. That is, the presence of multiple cleavages may not interfere with the impact of superposition systems as much as they interrupt the impact of SMD plurality rules in reducing the number of parties. When the number of salient issues in society is large, multiple parties will be created under the SMD plurality rule. Similarly, when a superposition system is applied, the number of parties will be inflated regardless of the number of salient issues. This happens because superposition systems inflate the number of parties even without the help of the presence of multiple social cleavages.<sup>81</sup>

Another factor that may interfere in terms of social or political background is whether or not a country has a well-established democracy. Some countries with a superposition system have a shorter democratic history than Japan and have not come to practice full-fledged democracy.

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<sup>81</sup> Canada and India may be representative cases that have produced more than two parties, even though their elections are carried out under SMD plurality rules.

More specifically, Japan established democracy after the Second World War and has democratic history that has lasted more than 50 years. Many of the countries with a superposition system other than Japan are the former Soviet Union Countries. These countries include Armenia, Azerbaijan, Georgia, Russia, and Ukraine. Their democracies just began in 1991 and are still not full-fledged democracy. Even though their political systems made a transition from being a communist state to a democratic state, their political system is not as free as that of Japan. Seychelles became independent in 1993, and the country is considered only partly free.<sup>82</sup>

How these variations in the level of democracy can influence the impact of superposition systems has to do with the level of information that the electorate possesses. Although such differential in the level of information may influence the effectiveness of Duverger's equilibria, it is not a concern when we consider the impact of superposition systems to create a multiparty system.

Duverger's Law works because the electorate has the information on who is trailing in elections. That is, if voters have the information on who is more likely to win or lose, they may engage in strategic voting. As a result, the number of parties may be reduced. If voters do not have the information, they have a difficulty in engaging in strategic voting. The connection between Duverger's Law and democracies is that stable democracies are a prerequisite to give the electorate information on who is more likely to win.

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<sup>82</sup> According to the Freedom House, Seychelles is classified as a part free country.



There are two ways to acquire information on who is trailing in a district. One way is to look at the history of how a party performed over time. If a candidate is from one of the major parties, it is easy for voters to project that the particular candidate has a good chance of winning. Projecting who will perform well may be more difficult when a country has not repeated elections in a number of times. This suggests that Duverger's Law requires a stable democracy that carries out multiple elections over time.

The other way is to look into public opinion survey results. If public opinion surveys show that certain political parties are trailing in terms of their party support level, voters may have a good understanding of who may win in their districts. Public opinion surveys can be successfully conducted in a country which has achieved democracy. As a result, voters in a non-democratic country may have a more difficult time projecting who is trailing in an election. If a society does not have a well-grounded democracy, it is very difficult for voters to project who may win. What this means is that the number of parties may be inflated more in countries with a low level of democracy.

Although it may sound that the influence of superposition systems may be affected depending on whether or not the electorate is informed, the difference in the level of information to influence the number of parties under a superposition system is weak. This is because the presence of information does not play a role in reducing the number of parties in superposition systems. As earlier chapters show, the dominant choice for voters is to cast their ballots sincerely in superposition systems. What this amounts to is that

voters would vote sincerely regardless of whether or not they know who are marginal candidates.

The second set of factors that may influence party systems differently from the Japanese case is how countries arrange their electoral rules besides selecting a category of systems, such as a PR, an SMD or a mixed system. Countries with a superposition system can arrange their electoral rules in their own ways, and none turn out to be exactly the same as those of Japan. As a result, these differences may be crucial in inhibiting to produce the same results as the Japanese case, even though their systems as a whole are categorized as superposition systems as the Japanese systems.

There are several factors that can increase or decrease the number of parties. The first is to have a different proportion of PR or plurality seats. Japan uses a PR rule to allocate about 40% of the seats, whereas South Korea uses a PR rule to distribute 15% of the seats. This suggests that the impact of the plurality component on the party system outcome is larger in Japan than South Korea. As a result, a lesser amount of contamination effect may be at work in South Korea than in Japan. On the other hand, there are countries that allocate a larger portion of seats through a PR rule than Japan does. In Guinea, 67% of the seats are allocated through a PR rule. This suggests that the impact of the PR section may be larger in Guinea than in Japan.

It is clear that when the number of seats in the plurality section of the system is 0, the system is reduced to a standard plurality system, while the

system is reduced to a regular PR rule, if the number of seats in the SMD part is 0. It is difficult to project exactly how many seats in the PR component are necessary to create a contamination effect. However, it may be safe to argue that the SMD part of the superposition system dominates in South Korea, while the PR component dominates in Guinea's case.

Second, if the district magnitude is increased in the plurality section of the election, the number of parties will be larger than that of the Japanese Lower House elections. As the findings from Japan show that the number of parties in the Lower House is slightly smaller than the Upper House elections. The effective number of legislative parties in the Lower House is 2.9, while that in the Upper House is 3.1 (See Table 2-4). The difference seems to be created by the fact that the district magnitude in the Lower House elections is one, whereas it is equal to or more than one in the Upper House elections.<sup>83</sup>

The third factor has to do with double candidacy. Japan's Lower House uses double candidacy where candidates can run in both parts of the system. On the other hand, Japan's Upper House does not use double candidacy. If double candidacy is not used, the number of parties will be smaller, compared to the system without double candidacy. This is because double candidacy cuts down the cost of placing candidates.

The findings in this dissertation are based on the idea that parties working in a superposition system create an incentive to place candidates even when candidates have little chance of winning a seat. Although the

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<sup>83</sup> Similarly, if a majority runoff system is used instead of an SMD plurality rule, the number of parties will be larger than that of Japan's Lower House case.

incentive to place a candidate exists, this does not necessarily mean that each party can place a candidate to all of the plurality districts, because of the cost involved. Political parties need to find a large number of qualified candidates. This is not an easy task, especially for a small party. Moreover, running a campaign for a candidate is always costly. Under such circumstances, double candidacies help small parties to place candidates. They can save time to look for qualified candidates and save money to run a campaign. What these mean is that without a double candidacy, the number of parties will not be inflated as much as Japan's Lower House elections.

Overall, a superposition system, as a choice of electoral rule, can influence party politics substantially. Although variation in the subcategories of mixed electoral rules may have an influence on electoral outcomes, the idea that superposition systems violate Duvergerian equilibria seems to be generalizable. Mixed electoral systems also determine what type of democracy a country practices and how long the government may last.

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## **Appendix 2-1: Classifications of Mixed Systems without Compensatory Seats**

Massicotte and Blais (1999)

COUNTRIES	YEAR ADOPTED
Andora	1993
Armenia	1995
Azerbaijan	1995
Croatia	1995
Georgia	1992
Guinea	1991
Japan Lower House	1994
Japan Upper House	1982
Mexico Senate	1996
Russia	1993
Senegal	1998
Seychelles	1993
South Korea	1994
Taiwan National Assembly	1991
Current National Legislative Yuan	1992
Ukraine	1997

Shugart and Wattenberg (2001)

COUNTRIES	YEAR ADOPTED
Armenia	1995
Georgia	1992
Hungary	
Japan Lower House	1994
Japan Upper House	1982
Lithuania	
Macedonia	
Mexico Senate	1996
Philippines	1995
Russia	1993
South Korea	1994
Thailand	
Ukraine	1997
Venezuela	

## **Appendix 2-2: Classifications of Mixed Systems with Compensatory Seats**

Massicotte and Blais (1999)

COUNTRIES	YEAR ADOPTED
Albania	1997
Bolivia	1996
Germany	1990
Italy, Chamber of Deputies	1993
Italy, Senate	1993
Mexico, Chamber of Deputies	1986
New Zealand	1993
Phillipines	1995
Tunisia	1993
Venezuela, Chamber of Deputies	1993

Shugart and Wattenberg (2001)

COUNTRIES	YEAR ADOPTED
Bolivia	1996
Germany	1990
New Zealand	1993
Venezuela	1993

**Appendix 5-1: Political Parties and Candidate Placement in the Lower House Election – 1996 and 2000**

POLITICAL PARTIES	1996		2000	
	SMD	PR	SMD	PR
LDP	288	327	269	325
NFP	235	133		
DPJ	143	159	239	259
DSPJ	43	48	63	76
JCP	299	53	300	67
NPH	13	11		
Jiyurengo	88	50	119	33
Shinshakai	37	26		
Minkairen	2	1		
CGP			21	63
Jiyu			55	72
Conservative			10	2
Mushozokunokai			9	
Kaikaku Club			3	
Other parties	28	0	5	
Unaffiliated	85	-	79	

Note: The numbers of candidates for the 1996 election are found in Asahi Senkyo Taikan (1997). The numbers for the 2000 election are counted by the author based on The Yomiuri Newspaper (2000).



**Appendix 5-2: Political Parties and Candidate Placement in the Upper House Election – 1996 and 2000**

POLITICAL PARTIES	1998	
	SMD	PR
LDP	57	30
NFP		
DPJ	23	25
DSPJ	19	17
JCP	46	25
NPH	0	3
Jiyurengo	43	9
Shinshakai	11	3
Minkairen		
CGP	2	18
Jiyu	9	12
Conservative		
Mushozokunokai		
Kaikaku Club		
Joseito	7	3
Niin Club	0	3
Sports Heiwato	6	3
Seinen Jiyuto	12	5
Ishinseito Shinpu	7	2
Other parties	3	
Unaffiliated	60	

Note: The number of candidates for the 1998 election is counted by the author.

Source: Sangiin Jimukyoku (1998)

## **Appendix 6-1: The Survey Question Used to Test Hypotheses Under the Mixed Electoral System with SMD and PR**

### **Japan Election and Democracy Study (JEDS) 1996**

Q3 Please consider 50 degrees as the feelings toward the individuals and organizations who you do not have any feelings. If you like the individuals and organizations, please pick a degree that is between 50 and 100 depending on the strength of your feelings. If you have negative feelings toward the individuals or organizations, please pick a degree that is between 0 and 50 degrees depending on the strength of your feelings.

Liberal Democratic Party	(      )
Japan Socialist Party	(      )
Clean Government Party	(      )
Democratic Socialist Party	(      )
Japan Socialist Party	(      )
New Liberal Club	(      )

Q13 What party's candidates did you vote for in the Lower House election?

1. Liberal Democratic Party
2. Japan Socialist Party
3. Clean Government Party
4. Democratic Socialist Party
5. Japan Communist Party
6. New Liberal Club
7. Shaminren
8. Others
9. Forgot
10. Did not vote

Q18 By the way, do you have a party which you feel close to?

- 1 Yes
- 0 No

Q30 SQ3 Going to vote is a voter's duty

- 1 Agree
- 2 Lean toward agree
- 3 Neither
- 4 Lean toward disagree
- 5 Disagree

F1 Sex

- 1 Male
- 2 Female

F2 What year, month and date did you born? What is your age?

**F6 Which level of school did you last attend, or what level of school are you currently attending?**

- 1 Primary school
- 2 Junior highschool
- 3 High school
- 4 Technical or vocational school
- 5 Two-year college, higher technical school
- 6 Four-year college
- 7 Graduate school

**F7 What was your household income, including everybody's in your home, in last year (From January to December Heisei 7)? Please include in your answer pre-tax income and all temporary income.**

- 1 Less than 2,000,000 yen
- 2 From 2,000,000 to 4,000,000 yen
- 3 From 4,000,000 to 6,000,000 yen
- 4 From 6,000,000 to 8,000,000 yen
- 5 From 8,000,000 to 10,000,000 yen
- 6 From 10,000,000 to 12,000,000 yen
- 7 From 12,000,000 to 14,000,000 yen
- 8 More than 14,000,000 yen

**F10S7 SQ 7 Do you belong to a labor union?**

- 1 Yes
- 0 No

**B2 SQ1 What candidate did you vote for in your single-member district?**

- ( ) Candidate code
- ( ) Party if only party mentioned
- ( ) Candidate from outside of the district

**B2S5 SQ5 What party did you vote for in the proportional representation election?**

- 1 Liberal Democratic Party
- 2 National Frontier Party
- 3 Democratic Party of Japan (Hatoyama, Kan New Party)
- 4 Social Democratic Party of Japan
- 5 Japan Communist Party
- 6 New Party of Harbinger
- 7 Other party ( )
- 8 R did not vote in the proportional representation district
- 9 R forgot
- 10 Don't know
- 11 No answer

**Note: The above is not an official translation.**

## **Appendix 6-2: The Survey Question Used to Test Hypotheses Under the Mixed Electoral System with Medium Size District and PR**

### **Japanes Election Study (JES) 1983**

**Q35** People have a variety of feelings toward individuals and organizations who are influencial in politics. We came up with a question that can measure such feelings. Please consider 50 degrees as the feelings toward the individuals and organizations who you do not have any feelings. If you like the individuals and organizations, please pick a degree that is between 50 and 100 depending on the strength of your feelings. If you have negative feelings toward the individuals or organizations, please pick a degree that is between 0 and 50 degrees depending on the strength of your feelings.

- Liberal Democratic Party (     )
- Japan Socialist Party (     )
- Clean Government Party (     )
- Democratic Socialist Party (     )
- Japan Socialist Party (     )
- New Liberal Club (     )

**Q28 SQ2.** What party's candidate did you vote for in the district election?

1. Liberal Democratic Party
2. Japan Socialist Party
3. Clean Government Party
4. Democratic Socialist Party
5. Japan Communist Party
6. New Liberal Club
7. Jiyuchotohakulabu
8. Katteren
9. Dainiinkulabu
10. Sararimanshinto
11. Nihonkokuminsejirengo
12. MPD, Heiwatominshuundo
13. Zatsuminto
14. Kyoikuto
15. Mutohashiminrengo
16. Sekaijoreikai
17. Fukushito
18. Nihonyonaoshito
19. Others (     )

**Q29** What Party did you vote for in the PR list election?

- 1 Liberal Democratic Party
2. Japan Socialist Party
- 3 Clean Government Party
- 4 Democratic Socialist Party

- 5 Japan Communist Party
- 6 New Liberal Club
- 7 Jiyuchotokakulabu
- 8 Katteren
- 9 Dainiinkulabu
- 10 Sararimanshinto
- 11 Nihonkokuminsejirengo
- 12 MPD, Heiwatominsuundo
- 13 Zatsuminto
- 14 Kyoikuto
- 15 Mutohashiminrengo
- 16 Sekaijoreikai
- 17 Fukushito
- 18 Nihonyonaoshito
- 19 Others ( )

**Q15** Now, changing the subject somewhat, what political party do you support?

- 1 If a party is mentioned by the respondent
- 0 Others

**DUTY Q10 SQ 3** Going to vote is a voter's duty

- 1 Agree
- 2 Lean toward agree
- 3 Neither
- 4 Lean toward disagree
- 5 Disagree

**UNION** Do you or your family member belongs to a union?

- 1 If the respondent belongs to a union
- 0 Others.

**CITY** 1 10 large cities,  
2 Cities over 100 thousand in population,  
3 Other Cities  
4 Counties

**SEX** 1 Male  
2 Female

**INCOME**

- 1 Less than 1,000,000 yen
- 2 1,000,000 to 2,000,000 yen
- 3 2,000,000 to 3,000,000 yen
- 4 3,000,000 to 4,000,000 yen
- 5 4,000,000 to 5,000,000 yen

- 6 5,000,000 to 6,000,000 yen
- 7 6,000,000 to 7,000,000 yen
- 8 7,000,000 to 8,000,000 yen
- 9 8,000,000 to 9,000,000 yen
- 10 9,000,000 to 10,000,000 yen
- 11 More than 10,000,000 yen

#### **EDUCATION**

- 1 Primary school, Junior high school
- 2 High school
- 3 College

**Note: The above is not an official translation.**

## Appendix 7-1: Predicted Probabilities

Given the following formula, the model can be reexpressed as the following:

$$\text{Prob}(Y_i = j) = \text{EXP}(\beta'_j x_i) / \sum \beta'_j x_i \quad (1)$$

The following equation is formulated for the results from Lower House.

$$\begin{aligned} \text{Prob}(Y_i = \text{Abstention}) = & [\text{EXP}(5.417 - 2.006x_{1i} - 0.807x_{2i} - 1.093x_{3i} \\ & + 0.354x_{4i} - 0.024x_{5i} - 0.094x_{6i} + 0.028x_{7i} + 0.051x_{8i} + 0.191x_{9i})] \\ & / \{1 + [\text{EXP}(5.417 - 2.006x_{1i} - 0.807x_{2i} - 1.093x_{3i} - 0.354x_{4i} \\ & - 0.024x_{5i} - 0.094x_{6i} + 0.028x_{7i} + 0.051x_{8i} + 0.191x_{9i}) \\ & + \text{EXP}(1.945 - 2.402x_{1i} - 0.268x_{2i} - 0.610x_{3i} + 0.362x_{4i} + 0.019x_{5i} \\ & - 0.180x_{6i} - 0.030x_{7i} - 0.264x_{8i} + 0.146x_{9i})]\} \end{aligned}$$

where  $y_i$  = VOTE CHOICE,  $x_1$  = OPPORTUNITY,  $x_2$  = DUTY,  $x_3$  = PARTY SUPPORT,  $x_4$  = SEX,  $x_5$  = AGE,  $x_6$  = EDUCATION,  $x_7$  = INCOME,  $x_8$  = UNION, and  $x_9$  = CITY SIZE

By varying the value of  $x_1$  from 0 to 1 while keeping other variables constant (i.e. mean, medium or mode), we obtain the followings.

When  $x_1=0$

$$\begin{aligned} \text{Prob}(Y_i = \text{Abstention}) &= [\text{EXP}(5.417 - 2.006(0) - 0.807(5) - 1.093(0) + 0.354(2) - 0.024(47) - \\ & 0.094(3) + 0.028(4) + 0.051(0) + 0.191(3))] / \{1 + [\text{EXP}(5.417 - 2.006(0) \\ & - 0.807(5) - 1.093(0) + 0.354(2) - 0.024(47) - 0.094(3) + 0.028(4) + \\ & 0.051(0) + 0.191(3)) + \text{EXP}(1.945 - 2.402(0) - 0.268(5) - 0.610(0) + \\ & 0.362(2) + 0.019(47) - 0.180(3) - 0.030(4) - 0.264(0) + 0.146(3))]\} \\ &= 0.32 \end{aligned}$$

When  $x_1=1$

$$\begin{aligned} \text{Prob}(Y_i = \text{Abstention}) &= [\text{EXP}(5.417 - 2.006(1) - 0.807(5) - 1.093(0) + 0.354(2) - 0.024(47) - \\ & 0.094(3) + 0.028(4) + 0.051(0) + 0.191(3))] / \{1 + [\text{EXP}(5.417 - 2.006(1) \\ & - 0.807(5) - 1.093(0) + 0.354(2) - 0.024(47) - 0.094(3) + 0.028(4) + \\ & 0.051(0) + 0.191(3)) + \text{EXP}(1.945 - 2.402(1) - 0.268(5) - 0.610(0) + \\ & 0.362(2) + 0.019(47) - 0.180(3) - 0.030(4) - 0.264(0) + 0.146(3))]\} \\ &= 0.24 \end{aligned}$$

The above means that the probability of abstention will decrease from 0.32 to 0.24 when voters' most preferred candidates are present. Similarly for ( $Y_i$  = Strategic), we can obtain predicted probabilities.

The values of control variables are shown below.

	LOWER HOUSE	UPPER HOUSE
DUTY	5	4
PARTY SUPPORT	0	1
SEX	2	2
AGE	47	34
EDUCATION	3	2
INCOME	4	5
UNION	0	0
CITYSIZE	3	3



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