Portfolio Allocation as Leadership Strategy
Intra-Party Bargaining in Japan

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Abstract

What explains portfolio allocations? The parliamentary democracy literature has focused on the proportional relationship between portfolio allocations and seat shares, in coalition cabinets and among factions in Japan, but little is known about changes over time. Why do prime ministers sometimes allocate portfolios more skewed to their own supporters within the party (i.e., their own factions) and sometimes not? Constructing a game-theoretic model and drawing on data from portfolio allocations of the LDP government between 1956 and 1991, I demonstrate that portfolio allocation is an instrument the prime minister uses to deal with intra-party pressures. In particular, prime ministers are concerned with challenges by internal rivals within the party.

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INTRODUCTION

What explains portfolio allocations? The parliamentary democracy literature has focused on the proportional relationship between portfolio allocations and seat shares, in coalition cabinets and among factions in Japan, but little is known about changes over time. Why do prime ministers sometimes allocate portfolios more skewed to their own supporters within the party (i.e., their own factions) and sometimes not? Constructing a game-theoretic model and drawing on data from portfolio allocations of the LDP government between 1956 and 1991, I demonstrate that portfolio allocation is an instrument the prime minister uses to deal with intra-party pressures. In particular, prime ministers are concerned with challenges by internal rivals within the party, who even try to take advantage of external threats such as opposition parties and public opinion.

Political parties in parliamentary democracies have been considered to compel members to cooperate with successfully, and therefore a unit of analysis in many studies of parliament has been a party. The cohesion of political parties, however, is not necessarily derived from a parliamentary democracy itself, where the government depends on majority support in the legislature (Muller, Bergman, and Strom 2003). Even in parliamentary democracies, political parties are not monolithic actors, because, for individual members, their own credit claiming is also indispensable activity to pursue their own political career. Party leaders cannot necessarily control behavior of party members.

Indeed, prime ministers in Japan often fail to attain their own party members’ cooperation. Majority party members often refuse to pass legislative bills proposed by prime ministers, and they even override executive threats such as dissolution of parliament via confidence vote procedures. In addition, confidence vote procedures have never been used in Japan as the way Huber (1996) described drawing a case of French parliament. Therefore, it is often said that prime ministers in Japan have very weak or only limited leadership (Hayao 1993;
Shinoda 2000). This vulnerability of leadership, however, does not imply that prime ministers are always weaker than their internal rivals who are aiming at the leadership position. I will show an alternative argument on the interactive behavior between prime ministers and majority party members of parliament.

There are many cabinet reshuffles in Japan. These frequent changes of portfolios initiated by prime ministers, however, cannot necessarily be explained by existing literature of parliament that focuses on a confidence relationship between executive and members (Huber 1996). Here, I would like to consider portfolio allocation as an instrument the prime minister uses to deal with intra-party pressures. I argue that prime ministers strategically change portfolio allocations by reshuffling their cabinets frequently. Through portfolio allocations, they acquire cohesive power within the party or prevent their rivals from organizing an intra-party coalition to replace them.

The portfolio allocations have been discussed in the context of coalition government formation in European parliamentary democracies. The existing literature has argued the consequences of portfolio allocations as the results of inter-party negotiations for building a coalition government, and has been trying to predict the distribution of portfolios. There are mainly two traditions that approach the subject in this literature: empirical and theoretical (or deductive) explanations.

On the empirical research tradition side, it is predicted that the share of portfolios, as a payoff from a winning coalition, will be proportional to the amount of resources that the participants contribute to it (i.e., the size of seats in parliament) (Gamson 1961). Browne and Franklin (1973, 1980) empirically show this proportionality proposition by Gamson (what is called Gamson’s Law) with thirteen parliamentary democracies between 1945 and 1969, and find very strong empirical evidence on this proposition. According to Browne and Franklin, the parties in a governing coalition indeed tend to receive portfolios
proportionately to their seat shares in the coalition, and small deviations from proportionality are due to bargaining over specific ministries and “the relative weakness effect,” which is the overpayment to smaller coalition parties at the expense of larger parties that lead coalition negotiations.

The other side of research traditions lies in formal theories that account for the distribution of portfolios among office-seeking parties by focusing on the institutional role of agenda setting power—formateur party advantage (Romer and Rosenthal 1978; Baron and Ferejohn 1989; Laver and Shepsle 1990; Strom, Budge and Laver 1994). As Romer and Rosenthal (1978) and Baron and Ferejohn (1989) show, the agenda setter can make a single “take-it-or-leave-it” offer by having monopoly power over the proposal on resource allocation bargaining. The party in charge of coalition negotiations, which is called formateur party, has this advantage as an agenda-setter. Therefore, this tradition of studies predicts disproportionately large share of portfolio benefits to this party, which is contrary to the prediction by the empirical tradition of studies.

The gap between these two research traditions on government formation and portfolio allocations has not been left untouched on the literature, however. Scholars have further studied these two different predictions and have been trying to fill this gap (Warwick and Druckman 2001; Mershon 2001). Although these studies compare the predictions of two traditions and tend to show empirically the dominance of proportionality proposition on portfolio allocations, it is still inconclusive.

A major problem of these studies on portfolio allocations is that they are all cross-national studies which only examine whether the distribution of portfolios becomes proportional or disproportional. The degree of proportionality, however, is not constant over time in each country. That is, the changes of portfolio allocations over time and the causes of fluctuation within a country have been ignored in the literature. A question why an executive sometimes
allocate portfolios proportionately and sometimes does’t still remains unanswered.

Although Japan had a single-party government for a long period between 1955 and 1993, theories in this coalition formation literature can be applied to the case of Japan.\(^1\) In the literature of Japanese politics, a single-party government of LDP has been considered as coalitions among internal factions (Leiserson 1968; Yoda 1985; Sato and Matsuzaki 1986; Wada and Schofield 1996; Kawato 1996; Adachi and Watanabe 2004). Cox and Rosenbluth (1993) concisely summarize the causes of factionalism in the LDP saying that “competition of the LDP presidency leads, given the rules of election both for that office (the electorate consists mostly of Diet members who cast votes in a majority runoff election) and for seats in the Diet (SNTV in middle-sized districts), to the formation of institutionalized factions” (p. 579). These factions can be treated as unitary actors as far as cabinet portfolios are concerned, and indeed, factions have been the unit of analysis of portfolio allocations in the literature.

There are several studies on portfolio allocations in Japan. Most attention has been paid to the macro-level changes on allocation patterns before and after Sato Cabinet (1965-1971). Sato and Matsuzaki (1986) empirically show that the portfolio allocations of LDP government became proportional to the size of each faction after Prime Minister Sato. They argue that this shift of pattern is because of the institutionalization of seniority rule within the LDP. Kawato (1996), on the other hand, explains this shift with two factors: the degree of majority status of the LDP within the Diet and the demographic composition of LDP members. He argues that prime ministers and their alliance factions could enjoy more portfolio allocations until Sato Cabinet because the LDP had an excessive majority status in the Diet and the winning alliance factions had many members who served long enough to be

\(^1\) Internal factions, however, are not organized by policy issues. Therefore, intra-party coalitions in Japan cannot be explained by their policy positions (Laver and Shepsle 1996).
a minister. Their claims, however, cannot wholly explain the variations of allocation results within the Sato Cabinet, who had reshuffled his cabinet seven times, for example. In sum, the literature of Japanese politics does not capture the dynamics of bargaining between prime ministers and internal rivals that affects on portfolio allocations.

In the followings, I construct a game-theoretic model on the bargaining between them over the portfolio allocations. My model identifies conditions under which proportional or skewed portfolio allocation outcomes emerge. In the model, I allow for the possibility of internal rivals leaving from the current coalition (exit option) and the degree of requirement of party cohesion (parliament management condition) as parameters. My empirical analysis examines the model using data from cabinet portfolio allocations in Japan. Through the empirical evaluation of the theoretical model, I suggest that the portfolio allocations are determined by the strategic behavior of prime minister who is facing pressures of intra-party politics.

THE POLITICS OF PORTFOLIO ALLOCATIONS IN JAPAN

In order to get a feel for the actual politics of portfolio allocations in Japan, I briefly show cabinet reshuffles conducted by Prime Minister Tanaka between July 1972 and December 1974. In the Liberal Democratic Party (LDP), senior members organize rank-and-file members within the party and spend their extra resources on their own career advancement at the party and the government. They form internal factions, and in the party presidential elections, where LDP members of the Diet are allowed to cast a vote, the members of factions behave as if they are unitary actors under the instruction of those faction leaders, who are competing for the presidential position (see Cox, Rosenbluth, and Thies 1999).

In July 1972, Kakuei Tanaka was elected as the president of LDP at the party presidential election. In his first cabinet, Prime Minister Tanaka allocated cabinet posts favorably to his
alliance factions in order to reward their support while allocating less favorably to factions which supported his formidable competitor Takeo Fukuda. After normalizing diplomatic relations with mainland China, Prime Minister Tanaka dissolved the Diet on November 1972. While LDP was still able to sustain a majority of seats within the Diet, however, it unexpectedly lost 17 seats in total from the pre-election. Tanaka decreased his centripetal force within the party, and allocated some of more influential portfolios to the Fukuda faction in the cabinet reshuffle conducted after the election.

After the oil crisis in October 1973, Tanaka further needed to make concession to Fukuda and his faction members in order to maintain solidarity within the party and avoid their defections on policy issues. Tanaka reshuffled his cabinet on November 1973, and had appointed his internal rival, Fukuda, as a financial minister. By this reshuffle, the Fukuda faction obtained more portfolios than the Tanaka faction had.

In the Upper House election on July 1974, Tanaka again decreased the number of LDP seats in the second chamber. Although LDP could maintain a majority in the Upper House, the margin of the seats with opposition parties became very close. Fukuda and other internal rivals turned this situation into an opportunity to urge Tanaka to resign, and they resigned cabinet minister positions to give pressure on him. In addition to their resignation, a money scandal hit Tanaka and took him in a severe state on his party management. Tanaka reshuffled his cabinet again in November 1974, but only two weeks later, he announced his resignation under strong internal pressure.

The example of the Tanaka Cabinet is not an exception under the LDP government between 1955 and 1993. Every prime minister has always faced similar challenges from internal rivals, and every time he/she received certain amount of internal pressure, incumbent prime minister changed the allocation of portfolios by reshuffling his/her cabinet as shown on Figure 1.
Figure 1 shows changes in portfolio quotas to prime minister’s faction over time in Japan between 1956 and 1991. The X-axis indicates the names of prime minister in the chronological order. As our concern is in every portfolio allocation, reshuffled cabinets are also included. The Y-axis indicates the deviation of prime minister faction’s portfolio share from the fair share, which is computed as portfolio share that is proportional to the faction’s seat share within the LDP. Thus, positive values on this axis mean Prime Minister Faction is treated favorably and its portfolio share is more than its seat share (i.e., portfolios become more skewed allocation). On the other hand, negative values indicate that Prime Minister Faction’s portfolio share is less than its seat share within the LDP.²

This figure (Figure 1) clearly indicates that portfolio quotas to Prime Minister Faction are not constant over time in Japan between 1956 and 1991. Prime ministers sometimes distribute portfolios to their own faction members, who are internal supporters, more than the seat share within the LDP (i.e., the fair share of portfolios), and sometimes don’t. The existing literature on parliamentary democracies, however, does not provide us with any general explanation of these changes over time in a parliamentary democracy.

MODELS OF INTRA-PARTY BARGAINING ON PORTFOLIO ALLOCATIONS

I identify conditions under which executive can impose skewed portfolio allocations by modeling intra-party bargaining in the presence of an incumbent executive as games between two or three unitary actors called factions.³ The factions are classified into two

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² The portfolios here include not only cabinet ministers but also party leadership positions such as Chief Secretary, Chief Executive Council, and a chairman of the Policy Research Council, which are not cabinet positions but very influential positions over the management of the LDP. There exist at most 20 cabinet ministers (the number is restricted by the Constitution).

³ Each faction is assumed as a unitary actor. Blackboxing factions, however, might be a problematic because internal cohesion of the factions can alter the payoffs to the factions from portfolio allocations. For example, factions with more senior members might take the portfolio allocations seriously (Kawato 1996, Cox, Rosenbluth and Thies 1999). Faction leaders who recently took over the position after the intra-faction competitions might seek portfolios for their faction members enthusiastically. I will extend
types depending on whether or not it can make an allocation proposal—Incumbent Prime Minister Faction (IP) and Non Prime Minister Faction (NP). My concern is in the influence of intra-party politics on portfolio allocations. To examine how intra-party politics influence portfolio allocations in the simplest way, I develop a two-player model as a baseline, and then extend it by adding one more player (a three-player model).

a. Two-faction game of intra-party bargaining

As a first step, I introduce a simple two-player model of intra-party bargaining between IP and NP in the dynamic game framework. Here, I assume complete information, where all the players’ payoffs are common knowledge, and use subgame perfect Nash equilibrium as a solution concept to deductively derive conclusions about behavior and outcomes from the model. The extensive form of the game is illustrated in Figure 2.

1. Sequence of the game

The game in the model begins at some point after a prime minister has been appointed in a parliament. The sequence of events in the game is as follows. First, IP chooses whether to offer a skewed portfolio allocation (which treats IP itself favorably) or a proportional allocation (which treats both factions equally). If IP chooses a skewed allocation, it can increase its distributive benefit obtained from the allocation. Second, NP determines whether or not to accept the offer from IP. NP always accepts the offer from IP if it is a proportional allocation. Finally, NP further has two options when it decides to reject the offer from IP, which payoffs are determined by exogenous forces (such as election outcomes or approval ratings of incumbent prime minister). In this stage, NP chooses whether to stay in the current coalition or to exit from it by forming an alternative coalition. If NP has an exit the model by including the difference in their internal cohesions among factions in the later version.
option, then it can give a credible threat to IP by attempting to form an alternative coalition with other intra-party NP or opposition parties. In this case, IP will get no benefit. On the other hand, if NP does not have an exit option, IP will make a monopoly of portfolios and NP will obtain no payoff once it rejects the skewed offer. Substantively speaking, therefore, exogenous forces determine whether or not NP should reject the offer at the preceding stage. Depending on whether or not NP has this exit option, IP is called weak or strong.

There are four possible outcomes, which are indicated by Roman numerals in Figure 2. Figure 2 presents the sequences of this game and their outcomes.

2. Assumptions

Each player’s objective is to maximize the payoffs it derives from bargaining on portfolio allocations. Before I solve this game, I describe four basic assumptions about players’ behavior for this objective, which introduce parameters in the utility functions of the factions.

Assumption 1: Factions are rational players who are maximizing their utilities derived from their bargaining. If the expected utility from two choices is equal, as a tie-breaking rule, I assume that factions prefer less conflicting options.

Assumption 2: Factions value the distributed benefit from cabinet positions (i.e., power within a cabinet). The distributive benefit can be interpreted as pork that attributed from cabinet positions. Let $b_i \in [0,1]$ be the share (or weight) to faction $i$ of the allocated

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4 As long as NP stays in the party, IP can actually expect some positive benefits in the next round even if the IP was deposed. For convenience of calculation, however, I assumed zero benefit to IP when NP exercised the exit option.
portfolios, where \( i \in \{IP, NP\} \), \( j \in \{proportional, skewed\} \) and \( \sum_{i} h_{ij} = 1 \). For convenience, however, I describe the benefit from the proportional allocation to faction \( i \) as \( p_{i} \) and that of the skewed allocation as \( s_{i} \), where \( \sum_{i} p_{i} = 1 \) and \( \sum_{i} s_{i} = 1 \) respectively.\(^5\) When the size of IP is smaller than that of NP, the distributive benefit of portfolios to IP can be smaller than the one to NP. Whatever the number is, however, the skewed distribution is preferred by IP to the proportional distribution: \( s_{IP} > p_{IP} \). On the other hand, the proportional distribution is preferred by NP to the skewed distribution: \( p_{NP} > s_{NP} \).

Assumption 3: IP cares about post-allocation prospects in the Diet management. Let \( m \in \mathbb{R}^+ \) represent an expected utility from the allocation to IP on the Diet management, which value will be higher if the business in Diet runs more smoothly. If IP fails to manage and run the Diet proceedings smoothly, it will be difficult to sustain the leadership position. However, higher party cohesion can increase the smoothness of the Diet management. In order to acquire high cohesive power of the party, prime minister cares about post-allocation prospects in making a decision of portfolio allocation, because the more portfolios are distributed to NPs, the more they become cooperative in the Diet management. Therefore, this term \( (m) \) can be also considered as a cost that IP has to pay when it offers a skewed allocation. If IP is strong enough to pass the bills smoothly without paying any cost for party unity, it would not bother to distribute more portfolios to NP. In this case, the term \( m \) will be

\(^{5}\) Each faction is not necessarily a monolithic actor too. Therefore, the strength of faction leaders within the factions can be a parameter that influences the value of distributed benefits. For example, if a faction leader is weak, he/she would need more portfolio allocations to please his/her own faction members. This might become clearer when we assume IP as a coalition of some factions that support a prime minister. When Prime Minister Nakasone allocated portfolios in 1980s, for example, he gave more portfolios to Tanaka Faction, which was an internal coalition partner of Nakasone at that time. This is because Prime Minister Nakasone was in a weak position in the coalition and had to please his coalition members. In this analysis, however, I simply assume that the strength of leaders within their factions or coalitions is constant, and therefore, factions value portfolio allocations equally. I will take the strength of faction leaders into consideration in future.
lower value. Such things as cabinet approval ratings, the length of the term, and the gap of the seat share with oppositions in the parliament are considered to determine the value of this term.

Assumption 4: NP values the benefits of membership from an alternative governing coalition. Let \( t \in \mathbb{R}^+ \) denote the expected value to NP that an alternative coalition with oppositions could produce. If NP decide to exercise an exit option, however, it has to pay a cost of leaving the party as well. \( k \in \mathbb{R}^+ \) denotes NP’s the exit cost.

Given these assumptions, the utility functions of the two factions (IP and NP) can be thought as functions \( F_{IP}(b_{IP}, m) \) and \( F_{NP}(b_{NP}, t, k) \) respectively. On Table 1, I illustrated the payoff to each faction for each of five possible outcomes.

3. Finding equilibria

I use the model to provide conditions where prime minister imposes skewed portfolio allocations and where he/she proposes proportional allocations. Again, this is a game of complete and perfect information, where common knowledge is assumed. Thus, the game is solved through backwards induction. The extensive form of this game is drawn on Figure 2.

The equilibrium outcomes of this two-faction game are summarized on Table 2. In equilibrium, a skewed allocation will be observed if and only if either \( s_{NP} > 0 > t - k \) and \( s_{IP} - m > p_{IP} + m \) or \( s_{NP} > t - k > 0 \) and \( s_{IP} - m > p_{IP} + m \). In other words, regardless of the presence or absence of the exit option, IP offers a skewed allocation as long as it does not need a high level of party cohesion \( (2m < s_{IP} - p_{IP}) \) for smooth parliament management purposes (unless there exists a credible exit option).
On the other hand, an exit option is neither necessary nor sufficient condition for proportional portfolio allocations unless it is a credible one, which is \( t - k > s_{np} \) (i.e., the net benefit to NP from an alternative coalition, which is calculated by expected utility from an alternative coalition minus an exit cost, is positive and larger than the benefit obtained from accepting a skewed allocation). The exit option that is not a credible one is not necessarily produce proportional allocation outcomes, while the portfolio allocation will be proportional whenever the exit option that NP has is a credible one. As I mentioned above, when IP needs a high level of party cohesion, the allocation will be proportional even if NP does not have an exit option. That is, having the credible exit option is not a sufficient condition for obtaining proportional allocation, but is only a necessary one. In equilibrium, therefore, a proportional allocation will be observed if and only if either \([s_{np} > 0 > t - k \text{ and } p_{ip} + m > s_{ip} - m]\) or \([s_{np} > t - k > 0 \text{ and } p_{ip} + m > s_{ip} - m]\) or \([t - k > s_{np} \text{ and } p_{ip} + m > 0]\).

b. Three-faction game of intra-party bargaining

In the LDP, prime minister does not necessarily need political support from all internal rivals in forming and maintaining his/her cabinet. Rather he/she sometimes takes advantage of disunity among his/her internal rivals because the internal rivals themselves are also intra-party competitors who are aiming at the party president position. Therefore, I extend this model by adding one more non-prime minister faction (NP) in order to capture this situation. In this extended model, I assume that NPs can exercise the exit option only when both of them agree to do (i.e., IP can impose the skewed allocation by obtaining an acceptance from either one of NPs). The extensive form of the game is drawn in Figure 3.
1. Sequence of the game

The sequence of events in this game is almost identical with the former one except. In this
game, two NPs simultaneously determine whether or not to accept the offer from IP. If only
one of NPs accept the skewed allocation offer, it can receive the amount that another NP
would have obtained if it accepted. As their decisions are made simultaneously, the game at
this second stage between the two factions (NPs) sometimes becomes similar to the
prisoner’s dilemma game, where the result in equilibrium will be a pareto inefficient
outcome for the players (NPs). If both of two NPs reject the skewed allocation offer, they
jointly decide whether to stay in the current coalition or to exit from it by forming an
alternative coalition. That is, neither one has an exit option as a veto by itself. It requires
both NPs agreement. By changing payoffs of options, exogenous forces such as election
outcomes or approval ratings of incumbent prime minister substantively determine whether
NPs have this exit option or not.

There are six possible outcomes, which are again indicated by Roman numerals in Figure
3. The payoff of each outcome is illustrated on Table 3.

2. Finding equilibria

This game is assumed complete but imperfect information, and there is one nonsingleton
information set, where NPs move simultaneously. In the game of complete and perfect
information, backwards induction will easily work. In the game of complete but imperfect
information, however, it is not so simple to find equilibrium working backwards through the
extensive form due to this nonsingleton information set. In order to search the equilibrium
outcomes in this game, therefore, I firstly consider Nash equilibria in the subgame, and then

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6 Indeed, when some internal rivals attempted to exit from the current coalition by forming an alternative
coalition with opposition parties in 1984, they finally failed due to refusal from one of internal rivals.
find best response strategies in the reduced games after identifying Nash equilibria in this
post-allocation subgame.

Conditions where equilibrium outcomes are observed in the three-faction game are
shown on Table 4. Note that these are necessary conditions but not sufficient conditions.

Similarly to the case of the two-faction game, NPs always choose “accept” the skewed
offer by IP whenever they have no exit option. This is because they can be better off by
accepting skewed offer rather than staying in the coalition without acquiring any benefit
from skewed allocation. Different from the result in the two-faction game, however, in this
three-faction game, IP can offer a skewed allocation even when NPs have a credible exit
option. In other words, when NPs are disunited actors that have a possibility to renege each
other, a credible threat of rejection does not necessarily assure the proportional allocation.
Of course, this is only one of possible equilibrium predictions provided under specified
conditions (\(0 < t - k < s_{NPa} + s_{NPd}\) and \(p_{IP} + m < s_{IP} - m\)). We cannot tell exactly which
one is a unique equilibrium outcome.

Three more possible outcomes (outcome III, IV and VI) can be observed in equilibria
here. However, these equilibria actually exist in only limited cases. Under the assumptions
of this model, in most cases, only two out of six possible outcomes (outcome I and II) are
observed.

c. Implications from intra-party game
In the model, I allow for the possibility of internal rivals leaving from the current coalition
(exit option) and the degree of requirement of party cohesion (the Diet management
condition). In the three-player model, I further allow the possibility that prime ministers
exploit the competitive and disunited nature of internal rivals (disunity of internal rivals).
The main substantive results of the intra-party bargaining models are as follows: (1) Exit
option alone is neither necessary nor sufficient condition for proportional allocation; (2) When there is a credible exit option, however, the allocation outcome becomes more likely proportional; (3) Whenever parliament management condition requires high party unity, it solely determines allocation results (proportional allocation); and (4) When internal rivals themselves are mutually hostile independent competitors within the party, prime ministers can allocate portfolios favorably to his/her own faction members even if those rivals jointly have a credible exit threat.

In existing literature of Japanese politics, it has been mentioned that the portfolio allocation is influenced by the fact whether internal rivals have an exit option from the party or not (Sato and Matsuzaki 1986; Wada 1993; Kawato 1996). As the model shows, however, a mere possibility that internal rivals can exit from the current coalition is not an enough threat to compel prime ministers to give up skewed allocations. To be influential, the net benefit from exiting has to be larger than the benefit from accepting skewed allocation (i.e., the exit option has to be a credible one). This threshold of credibility is not necessarily low for internal rivals. Once they have a credible exit option, however, they can influence the allocations.

Although it has been ignored the importance of the parliament management condition in the literature, if the condition requires high party unity that exceeds the net benefit obtained from skewed allocation, then the allocation becomes proportional whether or not internal rivals have an exit option. If the party unity is not so important for prime ministers to manage the Diet affairs, on the other hand, the credible exit option becomes influential for allocations.

Because internal rivals are also mutually hostile independent competitors within the party, it is not easy for them to step with each other in order to exercise a credible exit threat. Once one of them reneges on their tie, it can monopolize the allocated quota to the rivals.
Therefore, prime ministers exploit the disunity nature among those internal rivals and can offer skewed allocation even when there is a credible exit threat.

**EMPIRICAL ANALYSES AND RESULTS**

a. Hypotheses

Three empirical hypotheses are drawn from the predictions of the formal model on portfolio allocations. Three empirical hypotheses are summarized as shown below.

Prime minister has to acquire party wide unity in order to sustain high party cohesion, which prevents his/her internal rivals from organizing an intra-party or inter-party coalition to replace him/her. When an alternative coalition that gives more portfolios is available, therefore, the incumbent prime minister will allocate more portfolios to the internal rivals. Thus, I posit:

*Hypothesis 1a: The more the exit option becomes credible, the more Prime Minister distributes portfolios to internal rivals and less to his/her own supporters [Exit option].*

The internal rivals, however, are not a monolithic player. Even if they have an alternative coalition (i.e., an exit option from the current coalition) that gives a threat to the incumbent prime minister, they need to behave jointly in order to exercise the threat. If they are fragmented due to competitiveness among them, the exit option will be useless. The disunity of internal rivals will benefit the incumbent prime ministers. Hence, I contend:

*Hypothesis 1b: The more internal rivals are fragmented due to competitiveness among them, the fewer Prime Minister distributes portfolios to internal rivals and more to his/her own supporters [Disunity of internal rivals].*
The internal rivals try to exploit the external threats to depose the prime minister, because they seek for the prime minister’s position as well as the number of portfolios allocated to their factions (as distributive benefits). On the other hand, Prime Minister seeks smoother running of the Diet by maintaining party wide unity, because if it fails to pass the bills in the Diet, it will be difficult to sustain the leadership position. When the seat margin between parties in the Diet is narrow, or when the prime minister proposes controversial bills, the party cohesion will be valuable for him/her to avoid defections on policy issues in the Diet. Hence, I predict:

_Hypothesis 2: The more the party cohesion becomes valuable for the Diet management, the more Prime Minister distributes portfolios to internal rivals and less to his/her own supporters [Diet management condition]._

b. Operationalization and Measurement

The goal of the statistical testing is to examine the effect of these three factors (the exit option, the disunity of internal rivals, and the Diet management condition) on portfolio allocations. The relations between the share of portfolios allocated to Prime Minister Faction and the three factors and the expected signs of their coefficients are shown on Figure 4. I expect that the exit option and the Diet management condition are negatively correlated with Prime Minister Faction’s share of portfolios while the disunity of internal rivals is positively correlated with Prime Minister Faction’s share of portfolios. I also expect that the exit option and the disunity of internal rivals are negatively correlated each other, and the exit option and the Diet management condition are positively correlated each other.

In order to test the hypotheses, we need appropriate measure of portfolio allocations. In addition, we further need to elaborate three factors of the empirical model by introducing specific indicators that measure their concepts in the intended way. Hence, before
presenting the results of analysis, I will address the measurement issue of portfolio allocations. The measurement of indicators for each factor is also examined after identifying them for the hypothesis testing.

**Dependent Variable**

First, consider the appropriate measure of portfolio allocations. My interest here is in how much prime ministers allocate portfolios to their own faction members deviating from the fair share, which is calculated as the portfolio share proportional to the seat share within the LDP.\(^7\) That is, the index of the dependent variable describes the degree of deviation of Prime Minister Faction’s portfolio share from the fair share. Thus, if the Prime Minister Faction’s portfolio share is completely proportional to its seat share within the LDP (i.e., the portfolio allocation is proportional), the index becomes zero. If the Prime Minister Faction’s portfolio share is larger than the proportional seat share (i.e., the portfolio allocation is skewed), the index becomes positive value. If the Prime Minister Faction’s portfolio share is smaller than the proportional seat share, conversely, the index becomes negative value. In sum, the portfolio allocation to Prime Minister Faction, as a dependent variable, is measured in the relative term to its seat share within the LDP.

**Independent Variables**

Next, consider indicators of the three factors in the empirical model: (1) exit option; (2) disunity of internal rivals; and (3) Diet management condition. Since these factors only capture the abstract concept that derives from the formal model, we need to elaborate them in order to measure empirically. We identify indicators that describe changes of the state of

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\(^7\) I also tested with the portfolio shares weighted by the relative importance scores, which are estimated by an expert survey conducted in 1996 (Kato and Laver 1998). Although statistical significance of the coefficients is lost in some cases, the directions of the coefficients are still the same except for one case (the Diet management condition).
conditions for each factor in the testable way. In the following, I will introduce nine such indicators in total. For reference purposes, I displayed the indicators for each factor on Table 5.

*Exit option.*—The factor of the exit option mainly relates to Hypotheses 1a. Prime Minister distributes more portfolios to internal rivals and fewer portfolios to his/her faction members when the exit option becomes more credible. The term “exit” here implies that the internal rivals form an alternative coalition with internal or external party members and leave from the current coalition within the LDP. Therefore, the credibility of exit option needs to reflect the availability and possibility of an alternative coalition.

There are three indicators that measure the credibility of exit option. **Effective number of parties** measures the effective number of legislative parties, which is computed by \( \sum \frac{1}{p_i^2} \) where \( p_i \) is the seat share of the \( i \)th party in the House of Representatives. If the number of parties increases, internal rivals become easier to exit from the LDP and form an alternative coalition with any of opposition parties. If there are fewer parties, on the other hand, it becomes harder for internal rivals to exit from the LDP and form an alternative coalition with those parties, because those opposition parties tend to take a more clearly adversarial stand against the LDP. As we are interested only in the number of “real” parties that have a significant impact on the credibility of the exit option, I adopt the notion of an effective number of parties (Laakso and Taagepera 1979) instead of counting the number of actual parties.

**Strength of Prime Minister Faction** measures the difference of seat shares between Prime Minister Faction and the largest internal rival’s faction. The difference of seat shares between these two actors also affects the credibility of exit option. If the seat share
difference gets smaller between Prime Minister Faction and the largest internal rival’s faction, or if the difference becomes negative (i.e., the rival’s faction is more pivotal than the incumbent prime minister faction), the rival factions are getting easier to form an alternative coalition, and then the credibility of the exit option will be increased. Conversely, if the seat share difference gets larger between Prime Minister Faction and the largest internal rival’s faction, the exit option becomes less credible.

Strength of internal rivals is measured as the sum of two largest internal rival factions’ seat shares. If the two largest internal rivals get larger, it becomes easier for them to replace the incumbent prime minister by making an agreement between the two, and the exit option becomes more credible. On the other hand, if the two largest internal rivals are smaller, the exit option is less credible because they need further support from other internal rivals to replace the incumbent prime minister.

Party support measures the party approval rating of the LDP. This indicator denotes the cost that internal rivals have to pay when they form an alternative coalition with internal or external party members and leave from the current coalition within the LDP. As included in the formal model presented in the previous section, exiting from the current coalition will impose some costs to the internal rivals, such as costs to build a new party or costs derived from new political conflicts. Party approval rating is considered to influence the credibility of exit option by changing the amount of exit cost that internal rivals have to pay. If party approval rating gets higher, exit cost from the current coalition within the LDP will be increased, and then it decreases the credibility of exercising the exit option.

Disunity of internal rivals.—Second factor of the empirical model is the disunity of internal

---

8 I use the party approval rating at the month the cabinet was formed as a proxy of the exit cost from the party. Party approval ratings employed here are the results of opinion polls conducted monthly by one of the major wire service agencies in Japan, Jiji Press Co. (Jiji Tsushinsha ed. 1981 and 1992).
rivals. This factor stems from Hypothesis 1b. As an indicator that captures the degree of fragmentation among internal rivals, I employ the number of factions.

**Number of factions** is calculated as the effective number of factions within the LDP. If the number of factions increases, internal rivals become more difficult to act as an integrated player because they are also competitors for the party leadership position. As we are interested only in the number of “real” factions that have a significant impact on portfolio allocations, I again adopt the notion of an effective number of parties in order to count the number of factions (Laakso and Taagepera 1979) instead of counting the number of actual factions. The effective number of factions is calculated as follows: 

$$
\frac{1}{\sum s_i^2}
$$

where $s_i$ is the seat share of the $i^{th}$ faction in the LDP.

**Diet management condition.**—Third factor of the empirical model is the Diet management condition that influences portfolio allocations through the preference of Prime Minister. This factor links to Hypothesis 2. That is, the Diet management condition describes the importance of party cohesion for the inter-party politics.

This factor is different from the exit option mentioned above in terms of the defrayer of the costs. The Diet management condition mainly affects the cost the incumbent prime minister has to pay when he/she allocates more portfolios to his/her own faction. On the other hand, the exit option factor mainly relates to the cost the internal rivals have to pay when they exercise the exit option. Therefore, the Diet management condition does not directly lead the replacement of the incumbent prime minister, while the exit option simply measures the possibility for the internal rivals to take the place of the incumbent prime minister.

There are four indicators that play roles in the state of the Diet management condition.
Strength of the party measures the margin of seats in the Diet (the House of Representatives). When the party has slimmer margin in the Diet, party cohesion becomes important for prime ministers to pass the bills, because small defections from the party will harm passing legislations initiated by prime ministers. Thus, the requirement of party cohesion depends on the amount of margin in the Diet. This requirement can be fulfilled by the portfolio allocations, because if their faction members serve as cabinet ministers more than their seat share, internal rivals have to cooperate with the Diet management of the incumbent prime minister. Otherwise, they will lose their reputation as cabinet ministers. On the other hand, if the internal rivals are allocated fewer portfolios, their defection does not damage their reputation so much.

Popularity of prime minister is the cabinet approval ratings. Higher cabinet approval ratings also help prime ministers to run the Diet smoothly. When the prime minister is popular among people, it becomes harder for internal rivals to attempt defections on policy issues in front of the public. Hence, prime ministers won’t bother to allocate portfolios to their rivals in order to sustain stronger party cohesion as long as they maintain higher approval ratings.

State of economy measures the rate of inflation. Since the state of the economy also has a similar impact as popularity of prime minister, I include this indicator of economic performance, which is measured by the rate of inflation. If the performance of economy is poor (i.e., it gets higher inflation rate), prime ministers become harder to maintain certain level of party cohesion, and they allocate more portfolios to internal rivals. On the other hand, if...
hand, if the performance of economy is good, prime ministers won’t bother to allocate portfolios to their rivals.

*Election timing* describes the time past since the last general election. The election timing index is computed as the number of months advanced since the last general election divided by the total months between the previous general election and the next general election (i.e., the interval between the elections). If the cabinet is formed right after the general election, the election timing is described as 0. If the cabinet is formed at the almost right before the next general election, the election timing is almost close to 1. Thus, this indicator expresses how far the Diet members away from the previous election in their term. As time progresses more since the last general election, prime ministers tend to lose the centripetal force within the party, because members began to consider the next election and their re-election probabilities depend not only on their party record but also on their own characteristics under the SNTV electoral rule in Japan. As a result, prime ministers have to compensate the cohesive power either by yielding more portfolios to the internal rivals or by dissolving the Diet and holding a general election. Indeed, many Japanese prime ministers have dissolved the Diet in order to retrieve the weakening centripetal power, and this is also true in other parliamentary democracies (Strom and Swindle 2002).

c. Data

Before I begin the analysis, I briefly describe the data that will be employed for the analysis in this section. I examine the hypotheses by employing actual portfolio allocations of all 38 cabinets that include reshuffled ones in Japan for 35 years between 1956 and 1991. As there is no official list of faction members in the LDP that is open to public, I relied on inquiry results conducted by one of the major newspaper companies in order to figure out the LDP members’ faction affiliations. Here, my data of the faction members has been drawn from
the inquiry results by The Yomiuri Shimbun (Kitaoka 1995). The faction members are assumed to remain unchanged during the term (i.e., no member switches from one faction to another faction during the term), and is counted affiliations at the moment right after the general elections.\textsuperscript{12}

d. Empirical Results

Scatter plots between the dependent variable (the degree of deviation of Prime Minister Faction’s portfolio share from the fair share) and individual indicators with the regression line are presented in Figure 5-1 through Figure 5-9. Four indicators of the exit option factor (the effective number of parties, the strength of Prime Minister Faction, the strength of internal rivals and the party support) individually show the relationship with the dependent variable in the expected direction. The indicator of the disunity of internal rivals, the effective number of factions, displays the positive tendency in the relationship with the dependent variable, which is the same as the expected direction. Two out of four indicators of the Diet management condition, strength of the party and the popularity of prime minister, demonstrate the relationship with the dependent variable in the expected direction. However, the rest of two indicators of the Diet management condition, the state of economy and the election timing, show less clear relationship with the dependent variable.\textsuperscript{13} While their

\textsuperscript{12} This assumption is not necessarily unrealistic, because faction members normally do not switch from one faction to another due to faction-specific social capital, faction-specific seniority, and the nature of electoral competition at their districts (Cox, Rosenbluth and Thies 1999). However, some members switch factions, especially when a cabinet falls before the next general elections. In order to figure out accurate faction affiliations, I need to comprehend faction members at the moment every cabinet is formed or reshuffled. In addition, the way to count faction members is not consistent across the cabinets due to the summarized data I relied on. The data sometimes includes only election winners who are endorsed by the party, sometimes does not. Indeed, many winners who failed to obtain party endorsement in the election run as independents and join the LDP later. These two problems need to be resolved in the later version.

\textsuperscript{13} Regarding the state of economy, there are three outliers on the extreme right of the scatter plot figure. These three outliers are cabinets that faced the oil crisis in the 1970s (Tanaka B, Tanaka C, and Miki A). If we exclude these three cabinets, we observe the positive relationship with the dependent variable. However, this is the opposite direction against the expected one. This is probably because high inflation
relationships are weak, similar results are observed when the weighted portfolio share with the relative importance scores is employed instead of the number of portfolios as a dependent variable.

The model is estimated by using Ordinary Least Squares (OLS). The dependent variable is the degree of deviation of Prime Minister Faction’s portfolio share from the fair share (computed by counting numbers without any weight). The unit of analysis is each cabinet regardless whether it is original one or reshuffled one. In the time span of this study, there exist 38 cabinets formed by 12 prime ministers in total. On average, therefore, every prime minister reshuffled his/her cabinet by 2.17 times during his/her term.

Before presenting results of the regression analysis, consider the independent variables in the empirical model. The independent variables are three factors, which are composed of indicators described above. There are nine indicators that are used in the regression analysis, and their correlation coefficients are shown in Table 6. We find two interrelated sets of indicators that might cause collinearity problem in the statistical estimations (i.e., relatively higher correlation coefficients): (1) the strength of internal rivals and the effective number of factions (-0.838); and (2) the effective number of parties and the strength of the party (0.902). Because the indicators are proxies of three conceptual factors, and in order to deal with the problems of collinearity, the indicators are standardized by computing their Z-scores (with the average values and the standard deviations) and combined to create independent variables that measure the factors in the model except the disunity of internal rivals, which is solely measured by the effective number of factions.

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14 The data is not clustered by prime ministers, and each data point (the portfolio allocation) is assumed independent. Hence, the prime minister specific effect on the portfolio allocation is ignored. I will deal with the inter-prime minister difference in the later version.

15 The exit option factor is computed as the sum of all four standardized indicators, among which two
The results of regression analysis are presented in Table 7. I ran a series of regressions, examining all possible combination of independent variables. The coefficient values of the standardized independent variables do not have any substantive meanings. Instead, the goals of the regression analysis are to examine if the allocations change as predicted (i.e., if those variables are statistically significant) and if the coefficients have the predicted sign.

The relations among variables and expected signs of their coefficients are described on Figure 4.

First, the coefficient of the exit option has the expected negative sign, which is statistically significant except for Model 7, where all three independent variables are included at a time.\(^\text{16}\) That is, Hypothesis 1a *The more the exit option becomes credible, the more Prime Minister distributes portfolios to internal rivals and less to his/her own supporters* is generally confirmed.

Secondly, the coefficient of the disunity of internal rivals has the expected positive sign, which is statistically significant in all models that include this variable (Model 2, 4, 5, and 7).\(^\text{17}\) Hence, Hypothesis 1b *The more internal rivals are fragmented due to competitiveness among them, the fewer Prime Minister distributes portfolios to internal rivals* is also supported.

Finally, for the Diet management condition, there are somewhat mixed and inconsistent
results. The coefficient of the Diet management condition has the expected negative sign, except for the one in Model 6. The coefficient in Model 6 is neither negative value nor statistically significant. In Model 3 and Model 5, where only the Diet management condition is included or a combination with the disunity of internal rivals is incorporated, the coefficient of the Diet management condition is statistically significant. On the other hand, in Model 7, where all three factors are included, the coefficient of the Diet management option is not statistically significant.\(^{18}\) Considering the number of observation is relatively small (\(N = 35\)), the result of Model 7, which all coefficients display the expected direction of the effect but not statistically significant, is not so poor outcome. Therefore, it is inconclusive whether Hypothesis 2 *The more the party cohesion becomes valuable for the Diet management, the more Prime Minister distributes portfolios to internal rivals is supported strongly by the data or not from this result, but it seems that this hypothesis is supported to some extent.\(^{19}\)

In sum, the empirical model generally confirms three hypotheses proposed by the formal model: the exit option (Hypothesis 1a); the disunity of internal rivals (Hypothesis 1b); and the Diet management condition (Hypothesis 2). The exit option (Hypothesis 1a) and the disunity of internal rivals (Hypothesis 1b) display statistically significant effect on portfolio allocations with appropriate directions. The Diet management condition (Hypothesis 2) failed to provide statistically significant result with appropriate direction, but it is observed in only limited cases. In the models without the exit option, the coefficient of the Diet

\(^{18}\) When I employed the share-gap-difference index as a dependent variable and ran a series of regressions, the coefficient of the Diet management condition became statistically significant only in one model with the exit option (Model 6). However, the predicted sign of the coefficient is opposite to the expected direction in this model. This outcome might be because prime minister allocates more portfolios to smaller internal rival factions rather than the largest rival faction when he/she faces higher Diet management burden.

\(^{19}\) This weak result of the Diet management condition might derive from some indicators of this factor. The state of economy estimated by the inflation rate might be poor measurement as mentioned previously.
management condition displays statistically significant result with the right direction.

CONCLUSIONS

I have argued that the portfolio allocations are not solely determined by the share of seats. They are rather decisions made by prime ministers who are facing intra-party pressures coming from internal rivals. In parliamentary democracies, prime minister is not always a powerful actor. He/she always face two pressures: one from intra-party politics and one from inter-party politics. While factional solidarity is important for prime ministers to guard from internal rivals within the party, party unity is also important to fend themselves from external rivals across the parties such as opposition party leaders. Therefore, the internal rivals, who seek for party leadership position, take advantage of these external threats to depose the incumbent prime ministers. In this paper, I have demonstrated that portfolio allocation is an instrument the prime minister uses to deal with such intra-party pressures.

The changes of portfolio allocations over time and the causes of fluctuations within a country have been ignored in the literature. Instead, most attention has been paid to the relations between portfolio allocations and the seat share. As a result, a question why prime ministers sometimes allocate portfolios to their own supporters within the party disproportionately to their seat share and sometimes don’t still remains unanswered. This research complemented the existing works by employing the case of Japan while keeping the role of institutions constant.

I constructed a game-theoretic model that identifies conditions where proportional or skewed portfolio allocation outcomes emerge, by considering the possibility of internal rivals leaving from the current coalition (exit option) and the degree of requirement of party cohesion (parliament management condition). My simple formal model suggested that exit option alone is neither necessary nor sufficient condition for proportional allocation. When
there is a credible exit option, however, the allocation outcome becomes more likely proportional. In addition, prime minister can allocate portfolios favorably to his/her own faction members even if the internal rivals jointly have a credible exit threat when they are fragmented competitors within the party. The model also presented that parliament management condition solely determines allocation results whenever it requires high party cohesion.

The predictions of the formal model were examined by the empirical model with the data drawn from portfolio allocations of the LDP government in Japan for thirty five years between 1956 and 1991. My empirical results generally confirmed that three factors mentioned above (the exit option, the disunity of internal rivals, and the Diet management condition) have significant influence on portfolio allocations in the predicted directions. My empirical findings about portfolio allocations are: (1) the more the exit option becomes credible, the more Prime Minister distributes portfolios to internal rivals and less to his/her own supporters; (2) the more internal rivals are fragmented due to competitiveness among them, the fewer Prime Minister distributes portfolios to internal rivals and more to his/her own supporters; and (3) the more the party cohesion becomes valuable for the Diet management, the more Prime Minister distributes portfolios to internal rivals and less to his/her own supporters.

In this paper, I have offered a theoretical explanation for why prime ministers sometimes allocate portfolios more skewed to their own supporters within the party and sometimes not. I also have offered empirical evidence that prime ministers use the portfolio allocation as an instrument to deal with pressures and challenges from internal rivals. What I have not yet demonstrated but I would like to do is to disclose the intra-faction dynamics between faction leaders and followers that affect the inter-faction interactions (i.e., intra-party dynamics) and include them into the theoretical framework of the portfolio allocation. This becomes
especially important when we consider the declining faction leaders’ role over the posts under the new electoral rule after the political reform in 1994 (Cox, Rosenbluth and Thies 1999). However, the data employed for the empirical analysis here only covers the LDP government between 1956 and 1991, which ends before the electoral reform occurs in 1994. I hope in future work to incorporate the intra-faction dynamics and changes after the political reform into research.
REFERENCES


APPENDICES

Table 1: Payoff Matrix in Two-faction game

<table>
<thead>
<tr>
<th>Outcome</th>
<th>IP</th>
<th>NP</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>$p_{IP} + m$</td>
<td>$p_{NP}$</td>
</tr>
<tr>
<td>II</td>
<td>$s_{IP} - m$</td>
<td>$s_{NP}$</td>
</tr>
<tr>
<td>III</td>
<td>$1 - m$</td>
<td>0</td>
</tr>
<tr>
<td>IV</td>
<td>0</td>
<td>$t - k$</td>
</tr>
</tbody>
</table>

Note: $p_i$ = distributive benefit from portfolio allocation to faction $i$, where $p > 0$; $s_i$ = distributive benefit from skewed allocation, where $s > 0$ (and $s > p$ for IP and $p > s$ for NP); $m$ = management cost/reward from allocation; $t$ = expected utility from alternative coalition; and $k$ = exit cost.

Table 2: Outcomes of two-faction game

<table>
<thead>
<tr>
<th>External Forces</th>
<th>IP</th>
<th>NP</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 &gt; t - k$</td>
<td>stay</td>
<td>$p_{IP} + m &gt; s_{IP} - m$</td>
</tr>
<tr>
<td>$0 &gt; t - k$</td>
<td>stay</td>
<td>$p_{IP} + m &lt; s_{IP} - m$</td>
</tr>
<tr>
<td>$t - k &gt; 0$</td>
<td>exit</td>
<td>$p_{IP} + m &gt; s_{IP} - m$</td>
</tr>
<tr>
<td>$t - k &gt; 0$</td>
<td>exit</td>
<td>$p_{IP} + m &lt; s_{IP} - m$</td>
</tr>
</tbody>
</table>

Note: $p_i$ = distributive benefit from portfolio allocation to faction $i$, where $p > 0$; $s_i$ = distributive benefit from skewed allocation, where $s > 0$ (and $s > p$ for IP and $p > s$ for NP); $m$ = management cost/reward from allocation; $t$ = expected utility from alternative coalition; and $k$ = exit cost.
Table 3: Payoff Matrix in Three-faction game

<table>
<thead>
<tr>
<th>Outcome</th>
<th>IP</th>
<th>NP A</th>
<th>NP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>$p_{IP} + m$</td>
<td>$P_{NPa}$</td>
<td>$P_{NPb}$</td>
</tr>
<tr>
<td>II</td>
<td>$s_{IP} - m$</td>
<td>$s_{NPa}$</td>
<td>$s_{NPb}$</td>
</tr>
<tr>
<td>III</td>
<td>$s_{IP} - m$</td>
<td>$s_{NPa} + s_{NPb}$</td>
<td>0</td>
</tr>
<tr>
<td>IV</td>
<td>$s_{IP} - m$</td>
<td>0</td>
<td>$s_{NPa} + s_{NPb}$</td>
</tr>
<tr>
<td>V</td>
<td>$1 - m$</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>VI</td>
<td>0</td>
<td>$t - k$</td>
<td>$t - k$</td>
</tr>
</tbody>
</table>

Note: $p_i$ = distributive benefit from portfolio allocation to faction $i$, where $p > 0$; $s_i$ = distributive benefit from skewed allocation, where $s > 0$ (and $s > p$ for IP and $p > s$ for NP); $m$ = management cost/reward from allocation; $t$ = expected utility from alternative coalition; and $k$ = exit cost.
Table 4: Outcomes of three-faction game

| External Forces | IP | NPs        | $s_{NPa} + S_{NPb}$
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$t\ - k &gt; s_{NPa}$</td>
<td>$t - k &gt; s_{NPa} + S_{NPb}$</td>
</tr>
<tr>
<td>$0 &gt; t - k$</td>
<td>stay</td>
<td>$p_{IP} + m &gt; s_{IP} - m$</td>
<td>P, A, A (I)</td>
</tr>
<tr>
<td></td>
<td>stay</td>
<td>$p_{IP} + m &lt; s_{IP} - m$</td>
<td>S, A, A (II)</td>
</tr>
<tr>
<td>$t - k &gt; 0$</td>
<td>exit</td>
<td>$p_{IP} + m &gt; s_{IP} - m$</td>
<td>P, A, A (I)</td>
</tr>
<tr>
<td></td>
<td>exit</td>
<td>$p_{IP} + m &lt; s_{IP} - m$</td>
<td>P, A, A (I)</td>
</tr>
</tbody>
</table>

Note: $p_i$ = distributive benefit from portfolio allocation to faction $i$, where $p > 0$; $s_i$ = distributive benefit from skewed allocation, where $s > 0$ (and $s > p$ for IP and $p > s$ for NP); $m$ = management cost/reward from allocation; $t$ = expected utility from alternative coalition; and $k$ = exit cost; P = proportional allocation; S = skewed allocation; A = accept; R = Reject; M = mixed strategy.
Table 5: Indicators for each independent variable

<table>
<thead>
<tr>
<th>[Exit option]</th>
<th>ENPS</th>
<th>Effective number of parties</th>
<th>Effective number of legislative parties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SSM</td>
<td>Strength of Prime Minister Faction</td>
<td>Difference of seat shares between Prime Minister Faction and the largest rival faction</td>
</tr>
<tr>
<td></td>
<td>POPY</td>
<td>Party support</td>
<td>Approval rating of the LDP</td>
</tr>
<tr>
<td></td>
<td>TRV</td>
<td>Strength of internal rivals</td>
<td>Sum of 1st and 2nd largest rival factions’ seat shares</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>[Disunity of internal rivals]</th>
<th>ENF</th>
<th>Effective number of factions</th>
<th>Effective number of factions within the LDP</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>[Diet management condition]</th>
<th>MRG</th>
<th>Strength of the LDP</th>
<th>Margin in the Diet (LDP seat share – 50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>POPM</td>
<td>Popularity of Prime Minister</td>
<td>Prime Minister’s approval rating</td>
</tr>
<tr>
<td></td>
<td>ECON</td>
<td>State of economy</td>
<td>Rate of inflation</td>
</tr>
<tr>
<td></td>
<td>ELC</td>
<td>Election timing</td>
<td>Time past since the last general election</td>
</tr>
</tbody>
</table>
## Table 6: Correlations among indicators

<table>
<thead>
<tr>
<th></th>
<th>ENPS</th>
<th>SSM</th>
<th>POPY</th>
<th>TRV</th>
<th>ENF</th>
<th>MRG</th>
<th>POPM</th>
<th>ECON</th>
<th>ELC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENPS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSM</td>
<td>0.299361</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>POPY</td>
<td>0.15514</td>
<td>-0.0336</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TRV</td>
<td>0.450789</td>
<td>0.786038</td>
<td>0.107016</td>
<td>1</td>
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<tr>
<td>ENF</td>
<td>-0.45304</td>
<td>-0.54598</td>
<td>-0.16706</td>
<td>-0.83809</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MRG</td>
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<td>0.311541</td>
<td>0.256148</td>
<td>0.560902</td>
<td>-0.64289</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POPM</td>
<td>0.472318</td>
<td>0.271609</td>
<td>0.686262</td>
<td>0.391128</td>
<td>-0.36364</td>
<td>0.468242</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON</td>
<td>0.010271</td>
<td>0.005645</td>
<td>0.147964</td>
<td>-0.22073</td>
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<tr>
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<td>0.038414</td>
<td>1</td>
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</tbody>
</table>

Entries are Pearson correlation coefficients. N = 38.

**Abbreviations**

- **ENPS**: Effective number of parties
- **SSM**: Strength of Prime Minister Faction
- **POPY**: Party support
- **TRV**: Strength of internal rivals
- **ENF**: Effective number of factions
- **MRG**: Strength of the LDP
- **POPM**: Popularity of Prime Minister
- **ECON**: State of economy
- **ELC**: Election timing
Table 7: Regression Analysis of Portfolio Allocations

<table>
<thead>
<tr>
<th>Model</th>
<th>Exit option</th>
<th>Disunity of internal rivals</th>
<th>Diet management condition</th>
<th>Intercept</th>
<th>Number of observations</th>
<th>R-squared</th>
<th>Adjusted R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-1.908***</td>
<td>-</td>
<td>-</td>
<td>7.143***</td>
<td>35</td>
<td>0.440</td>
<td>0.423</td>
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<tr>
<td></td>
<td>(0.374)</td>
<td>(0.740)</td>
<td>(0.481)</td>
<td>(0.938)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>4.744***</td>
<td>-</td>
<td>-24.060***</td>
<td>38</td>
<td>0.533</td>
<td>0.520</td>
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<tr>
<td></td>
<td></td>
<td>(0.740)</td>
<td>(0.938)</td>
<td>(4.948)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-1.195**</td>
<td>7.424***</td>
<td>37</td>
<td>0.535</td>
<td>0.520</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(0.481)</td>
<td>(1.136)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>-0.865*</td>
<td>-</td>
<td>3.253***</td>
<td>-14.479*</td>
<td>35</td>
<td>0.562</td>
<td>0.520</td>
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<tr>
<td></td>
<td>(0.484)</td>
<td></td>
<td>(1.088)</td>
<td>(7.278)</td>
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<td></td>
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<tr>
<td>5</td>
<td>-</td>
<td>4.456***</td>
<td>-0.730**</td>
<td>-22.181***</td>
<td>37</td>
<td>0.573</td>
<td>0.535</td>
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<tr>
<td></td>
<td></td>
<td>(0.769)</td>
<td>(0.355)</td>
<td>(5.172)</td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>-1.975***</td>
<td>-</td>
<td>0.147</td>
<td>7.119***</td>
<td>35</td>
<td>0.442</td>
<td>0.435</td>
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<tr>
<td></td>
<td>(0.452)</td>
<td></td>
<td>(0.517)</td>
<td>(0.956)</td>
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<tr>
<td>7</td>
<td>-0.628</td>
<td>3.506***</td>
<td>-0.330</td>
<td>-16.110**</td>
<td>35</td>
<td>0.569</td>
<td>0.547</td>
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<td>(0.601)</td>
<td>(1.159)</td>
<td>(0.488)</td>
<td>(7.726)</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *** Statistically significant at the .01 level; ** Statistically significant at the .05 level; * Statistically significant at the .1 level. Standard errors are in parentheses.
Figure 1: Transition of portfolio shares in 1956-1991
Figure 2: Extensive Form of Two-faction game

Outcome I: Proportional Allocation
Outcome II: Skewed allocation
Outcome III: Monopoly allocation
Outcome IV: Alternative coalition
Figure 3: Extensive Form of Three-faction game

Outcome I: Proportional Allocation
Outcome II: Skewed allocation (IP & NP A & NP B)
Outcome III: Skewed allocation (IP & NP A)
Outcome IV: Skewed allocation (IP & NP B)
Outcome V: Monopoly allocation
Outcome VI: Alternative coalition
Figure 4: Relations among variables and expected signs of their coefficients

Note: There are independent and dependent variables in the empirical model: single circled variables are the independent variables; a double circled variable is the dependent variable. The arrows show the direction of the relationship between the variables. The positive and negative signs describe the expected signs of the coefficients.
Figure 5: Scatter Plots between the DV and indicators

Figure 7-1: Effective number of parties

Figure 7-2: Strength of Prime Minister Faction (%)

Figure 7-3: Party support (%)

Figure 7-4: Strength of Internal Rivals (%)

Figure 7-5: Effective number of factions

Figure 7-6: Strength of the LDP (%)

Figure 7-7: Popularity of Prime Minister (%)