

**Vote Division and Policy Differentiation Strategies of LDP members
under SNTV/MMD in Japan**

Masahiko Tatebayashi
Faculty of Law,
Kansai University
mtatebay@duke.edu

Margaret McKean
Department of Political Science
Duke University
mamckean@duke.edu

Association of Asian Studies, Washington DC, 4-7 April 2002

Abstract

This paper deals with the vote division strategies of LDP (Liberal Democratic Party) members in Japan under the 1947-1993 electoral rules of SNTV/MMD (single non-transferable vote in multi-member districts). Under SNTV/MMD, LDP members suffered from severe intra-party competition. The paper claims that LDP members tried to avoid this problem by pursuing one of two strategies to divide the vote in their district: either geographical division or division by socioeconomic sector, and that their choice of vote division strategy determined the pattern of their legislative activities. To divide the vote geographically, LDP members gathered their votes from their own narrow geographical territory within their districts, but to divide the vote by socioeconomic sector they developed a different policy specialty from that used by other LDP colleagues within the district. The paper examines the vote division strategies of legislators and the resulting patterns of their legislative activities, by using data from the LDP's Policy Affairs Research Council (PARC) rosters of LDP assignments to PARC committees along with data on general elections for the House of Representatives from the 1980s and early 1990s. We found that there were indeed two types of LDP legislators. The first type were strongly committed to geographically-concentrated policy delivery such as agricultural and construction policies,

and in such districts -- presumably those whose LDP voters wanted pork -- it was not unusual to find that all LDP representatives served on Agriculture and Construction committees. The second type of LDP legislator served on other kinds of PARC committees (Education, Posts & Telecommunication and so on), and they tended to avoid committee assignments that overlapped with their colleagues in the district. We believe that these differences in policy assignments reflect different strategies of vote division, and that LDP legislators are constrained in their policy activities not only by demands of constituents but also by their own electoral needs.

I. Introduction

What is the relationship between electoral rules and policy activities of Diet members in Japan? This paper will examine some of the policy activities of the Liberal Democratic Party (LDP) members under SNTV/MMD (the single non-transferable vote in multi-member districts, the electoral system that Japan used in the House of Representatives from 1947 to 1993 inclusive) to determine whether electoral rules had any impact on the policy-related behavior of LDP Diet members. While the LDP has been the most stable governing party among the industrial democracies, it has been widely known as one of the most fragmented parties as well. However, the policy performance of the LDP government has almost always been examined at the party level, essentially treating it as a single coherent body, and almost never analyzed at the sub-party level of factions or individual politicians. One reason is for this lack is that Japanese parties have maintained strong party discipline in legislative voting in the Diet, making it really difficult to measure the fragmentation of political parties, even though we are aware of the fact that some of these parties, including the LDP, are highly factionalized.

As a stable governing party, the LDP has been well situated to internalize the policy making process, accomplishing the coordination of fragmented interests represented by individual members and factions within the party before Diet action. The LDP undergoes a transformation from a factionalized and decentralized party to a coherent policy juggernaut before its proposals reach the Diet floor. The vehicle and locus of this coordinating is usually assumed to be the party's Policy Affairs Research Council (PARC), the LDP's policy-making organ, composed of thematic policy-oriented committees each containing regular LDP Diet members. This study will therefore examine PARC, rather than the Diet itself, to understand how the LDP arrives at its policy positions and maintains party discipline in Diet voting. Using data for 1980 to 1993 on assignment of individual LDP Diet members from the Lower House or House of Representatives (HR) of the Diet to PARC committees as an indicator of policy preferences and activities of individual legislators, the paper investigates whether HR members' PARC assignments are systematically related in any way to the electoral incentives created by SNTV/MMD. This study of electoral rules and policy activities of LDP members thus attempts to build microfoundations for understanding how the LDP operates.

In gauging the impact of electoral rules on policy activities of LDP members, we begin with the assumption that politicians' first goal is to be re-elected in the next

election, and their second one is to form and join a governing majority in the Diet. SNTV/MMD forces candidates from large parties to compete with their party colleagues at least as vigorously as they compete with candidates from other parties. This competition can be very severe and also quite difficult, since candidates competing within the same party cannot rely on their party brand name or any party platform as a way to secure votes. They must instead concentrate on attracting votes to themselves as individuals and to build personal, as opposed to party-based, support (Cain, Ferejohn, and Fiorina, 1987). Thus these two goals are actually contradictory: the harder an LDP candidate campaigns for votes that will come largely from LDP supporters to secure his/her own seat, the more s/he harms the candidacies of other LDP politicians and thus jeopardizes the party's opportunity to form a government. Whenever the LDP majority in the Diet is fragile or marginal, and whenever the LDP faces a particularly challenging election, the contradiction between these two goals faced by individual LDP candidates is really quite serious. The obvious compromise between these two goals, one that should be attractive to all LDP candidates running in districts with more than one other LDP candidate, is to coordinate a reduction in this harsh competition by finding some method of dividing the total number of available LDP votes in a district with other LDP colleagues in that district.

There are an infinite number of ways to divide the vote in a district, some requiring much more effective organization of individual voters than others.¹ It is well-known that LDP candidates in the early postwar period (and their predecessors in the prewar period) built geographically based support organizations, or *jiban*, that subdivided their district, but recent work suggests that these geographically-based attempts to divide the vote in a district have been fading (Hayao and others). But it is widely believed -- based on public opinion polls and casual observation of campaign style -- that LDP candidates do not use policy issues to create "product differentiation" among themselves. Indeed, one ostensible motive for electoral

¹ If there were enough LDP votes in a district to secure two seats safely, for instance, an incredibly strong party organization -- which the LDP does not have -- or even two personal support organizations attached to candidates with a firm mutual pact with each other -- might actually pool their supporters, and then perhaps ask them to vote for A if they were born in an even-numbered month and to vote for B if they were born in an odd-numbered month. But of course very few parties anywhere are this strong or have voters who are this willing to be treated like putty. Parties and candidates facing a dilemma like this will instead have to look instead for vote-division or vote-allocation rules that respond to somewhat more meaningful divisions in the voting population, rules that voters will not find offensive.

reform was to increase the likelihood of issue-based and policy-based campaigning and voting. However, we have long known that LDP Diet members often belong to policy subgroups known as *zoku* (Inoguchi and Iwai). What determines which LDP members join *zoku* and which *zoku* they choose to join? Conventional wisdom that policy issues are unimportant in campaigning gives us no way of understanding why LDP politicians bother to join *zoku* at all, and would force us to speculate that they pick the particular policy *zoku* they join at random. However, we believe that the role of policy in guiding politicians' behavior has been seriously underestimated. The rest of this paper investigates the possibility that LDP candidates have used an emphasis on particular policy positions or policy areas (*zoku* specialties) as a way to divide their votes, and that these positions are closely connected with their policy preferences and activities after elected.

To begin the analysis, we first assume two vote division strategies and corresponding coordination equilibria as ideal types: dividing the vote on the basis of geography (equilibrium), as actually seems to have been done often in the early postwar period, and dividing the vote on the basis of sector or policy emphasis (equilibrium), which we will elaborate on later. This coordination process among LDP candidates in the same electoral district can be envisioned as a kind of pure coordination game with two different strategies of vote division and corresponding coordination equilibria (see Figure 3). Without any coordination at all, all candidates will need to campaign throughout the district and appeal to voters interested in multiple policy issues. These will be expensive, redundant, and wasteful campaigns with no predictable results in terms of how voters will actually make choices among candidates. Alternatively, if the candidates could coordinate with each other on campaigning in either different geographical areas or policy spaces, they can each campaign more efficiently and effectively, winning more votes per unit of campaign effort expended, with the assurance that the vote total for each will be enough for a seat if the pact holds. Thus coordination on campaign strategy yields higher payoffs for each candidate than failure to coordinate. If candidates can divide the pool of votes successfully, using either a geographical or a policy rule, and if the votes so divided are sufficient for the electoral threshold,² then this situation is a Nash Equilibrium, because candidates have no incentive to switch their strategies as long

² In SNTV/MMD, where M is district magnitude and V is the total votes cast in the district, the electoral threshold that guarantees a seat is $1 + V/(M+1)$. In fact, of course, if there are more than the Duverger prediction of $M+1$ serious candidates, then these "extra" candidates further dilute the votes, and a winning seat can be had for far fewer votes than this arithmetic threshold.

as their rivals do not first change their own strategies.

We will argue below on the basis of information about membership in PARC committees that under SNTV, where there were multiple LDP candidates in a district, LDP representatives did over time move toward an equilibrium in vote division, and that these vote division strategies accompanied matching policy activities after election. Thus we believe there is a causal link from the electoral system to the policy activities of LDP HR members. In districts with equilibrium based on geographical division of the vote, politicians tended to focus on delivery of specific pork-like services to their own sub-region in the electoral district. On the other hand, in districts with an equilibrium based on policy issues, LDP politicians who each became policy specialists in their (different) respective policy fields could, taken together, actually cover a wide range of policy issues on behalf of their constituents. This second method of dividing the vote, based on policy competence rather than the delivery of pork, may actually have emerged in response to the preferences of constituents no longer especially interested in pork. Moreover, this specialization in non-pork policy as a technique for dividing the vote came from the old SNTV/MMD electoral system that is widely reputed to over-emphasize pork. These findings also suggest that the LDP was, however slowly, evolving in an adaptive way to the exhaustion in at least some voters with such a concept of constituency service and the threat of the opposition. Finally, though we have not tested this possibility here, the emergence of two vote-division rules in different kinds of districts may also indicate the potential for a split in the LDP based on this conjunction of policy concerns of voters and candidates' electoral strategies.

II. Previous Studies of PARC membership and activity

Several important studies have already examined policy activities of LDP members by focusing on the PARC, which is the LDP's official organ for determining the LDP's position on policy issues. PARC has seventeen standing committees that overlap closely with Diet committees and corresponding ministries. In addition, PARC also has ad hoc research committees. All LDP Diet members except for ministers, vice ministers, some party executives of the LDP (such as President, Vice President, Secretary General, Chairman of the General Council, and Chairman of PARC) and some faction leaders are required to participate in PARC committees, and most are on several committees at once.

Inoguchi and Iwai(1987), and Tanaka (1991) tried to identify patterns in the way that LDP Diet members were assigned to PARC committees, using factor analysis. However, they could find no strong factors to explain committee assignment and simply concluded that LDP Diet members all shared a similar pattern. It is quite true that there were some strong similarities among LDP members in their committee assignments. On the one hand some committees, such as Agriculture & Forestry, Construction, Commerce & Industry, were extremely popular. In 1984, these contained 123, 99, and 80 Lower House members respectively out of the total of 263 LDP members of the Lower House. On the other hand, there were unpopular committees like Environment, Justice, and Foreign Affairs, which contained only 16, 17, and 26 LDP members from the Lower House in 1984.³ However, factor analysis did not elicit any further pattern of cleavages.

Second, Inoguchi & Iwai (1987: 59-70) also provided a preliminary regression analysis to explore the logic behind policy activities of LDP members. They quantified the activities of twelve HR members from Ibaragi prefecture (which contains 3 electoral districts and 12 HR representatives in all) in 1986 by doing a thorough content analysis of local newspapers that kept a close watch on the daily routines of all Ibaragi Diet members. They also calculated an indicator of electoral strength for each HR member -- the ratio between the votes these winners had each collected in the previous election (1983) in their respective electoral districts and those collected by the top loser in that district.⁴ Inoguchi and Iwai then regressed the data on daily activity against the items they thought might be important explanatory variables: the candidate's electoral strength, the number of terms each had already served in the Lower House, and their party affiliation (using a dummy variable that simply distinguished between LDP winners and all other winners). They found that electoral strength and longer Diet experience were associated with a shift of the representative's activities from the local area to activity in Tokyo. That is, the

³ It seems clear that these popular PARC committees are allowed to grow far larger than a reasonable size for decisionmaking purposes, presumably in order to give LDP HR members the opportunity to report back to their districts that they are serving on the "right" committees.

⁴ This indicator devised by Inoguchi and Iwai (and also used by Katô) always has a value greater than one for any seat-winner, but it can also indicate the skewness of voting in the district, showing us when a candidate wins a seat with far more votes than "necessary," it being necessary only to win more votes than the top loser to secure a seat. Alternative measures of electoral strength are the Cox-Rosenbluth indicator (*source/date*), and very similar to it, the Matsubara-Kabashima index(*source/date*), which may be theoretically stronger and more stable in general but did not work as well here.

stronger the Diet member's home electoral strength and the longer s/he had served in the Diet, the higher the rate of attendance at the Diet and communication with interest groups, and the less involved in activities within the home district.

Although this finding that electoral factors and policy activities is quite important, the evidence remains weak, since the number of cases is small and the range of potential explanatory variables explored is quite limited. These studies did not fully explain the activities of Diet members, in part because the goal of the research was not to find out what influenced or motivated these activities, but simply to falsify the bureaucratic dominance model of Japanese politics. What Inoguchi and others were really interested in was to describe the important roles of LDP members in the policy process. The factor and regression analyses mentioned above were not necessarily intended to provide causal explanations for Diet members' activities, but only to enrich the description of policy activities of LDP members.

In contrast, recent studies by Rosenbluth and others have been intentionally designed to identify the (causal) factors that influence Diet members' policy activities. Just as we are doing here, they did explore the impact of electoral incentives derived from the SNTV/MMD electoral system on policy activities of LDP members, but they focused particularly on the delivery of pork to home districts. Rosenbluth and others noted that LDP politicians have maintained personal campaign machines (*kôenkai*) in their home districts to cultivate the personal votes (as opposed to party-based votes) that are indispensable for victory under SNTV/MMD rules allowing several candidates from the same party to compete in a single multi-member district. They claimed that these electoral rules drive LDP HR members to engage in pork-barrel service for their district through their personal organizations. Moreover, they argue that the LDP prefers anti-competitive public policies principally in order to generate excessive profits for businesses that can then donate more to LDP candidates' personal machines to spend on expensive electoral campaigns. McCubbins and Rosenbluth (1996) found evidence of this policy mix in the pattern of committees assignments in PARC. They claimed that LDP members from the same electoral district tended to choose different committees of PARC so that they could differentiate themselves from one another as specialists in different policy areas.

Although we are strongly influenced by their analysis and particularly their search for causal explanations in electoral rules, their evidence and theory are problematic. First, although they acknowledged the fact that many LDP HR members from the same district all served on the Agricultural & Forestry Committee

and thus had overlapping PARC assignments, they claimed that this was an exception to their argument of policy differentiation. They did not provide any theoretical reason for this truly enormous exception, and simply said that every LDP member cared about agricultural policy.

Secondly, evidence that they provided for suggesting vote division seems insufficient. They used 1990 PARC membership data. Their null hypothesis stipulated that if electoral rules did not affect PARC duties and policy activities of LDP HR members, then the data should indicate random rather than patterned assignments to PARC committees. If assignments were random, we would expect to find that actual incidence of overlap and non-overlap in PARC committees (for LDP Diet members from districts with two or more LDP representatives serving on PARC committees) would be similar to probabilities that could be deduced mathematically. Using the same factorial mathematics that McCubbins and Rosenbluth (51) used, we can easily calculate that in a district with two LDP members serving on PARC committees on the basis of random assignment, there is a 12.8% chance of no overlap in assignments if each serves on 5 committees, and a 30% chance of no overlap if each serves on only 4 committees.⁵ Obviously, the more committees each LDP representative serves on, the more likely that random assignment to committees for LDP representatives from the same HR district will produce overlap in committee memberships. To find out if reality differed from these predictions, they then drew a random sample of 30 districts. Of the 26 districts in which there were two or more LDP members serving on PARC committees and thus capable of having overlap, they found overlap in only 50% of those districts (one overlap in 5 and two or more overlaps in 8). Seeing that actual overlap was lower than they would have predicted on random assignment, they concluded that LDP members were making some systematic effort to avoid overlap in committee assignments. We agree that LDP members are choosing committee assignments systematically rather than randomly, but because we have examined a full data set of PARC members and all HR districts for five election cycles, we are able to see additional patterns and investigate their

⁵ This is easily calculated from the fact that there are 17 PARC committees. The probability of no overlap in a district with two LDP PARC members who are randomly assigned to five committees apiece is $(12 \cdot 11 \cdot 10 \cdot 9 \cdot 8) / (17 \cdot 16 \cdot 15 \cdot 14 \cdot 13)$, or 12.8%. The probability of no overlap in the district if the two LDP PARC members are randomly assigned to four committees each is $(13 \cdot 12 \cdot 11 \cdot 10) / (17 \cdot 16 \cdot 15 \cdot 14) = 30.04\%$. Finally, we can also calculate that the probability of no overlap in the district if these two LDP PARC members are randomly assigned to three committees apiece is $(14 \cdot 13 \cdot 12) / (17 \cdot 16 \cdot 15) = 53.53\%$.

causes more fully.

Our data for LDP HR members' participation in PARC committees for 1980, 1983, 1986, 1990, and 1993 indicates that each LDP HR member has fewer committee assignments than McCubbins and Rosenbluth estimated, which means they would also have underestimated the chance of no overlap with random assignment. In fact, using all districts from 1980 to 1993, rather than a sample from one year, we found that the mean number of PARC committees to which an individual LDP HR member belonged was not 4 or 5 as they assumed, but only 3.3763, even if we exclude, as they did, LDP HR members who do not participate in PARC committees (these are party officials whose posts exempt them from obligations to serve on PARC committees).⁶ The same data allow us to calculate actual levels of overlap and non-overlap as well for districts containing two and three LDP PARC members respectively, shown in Table 1. Moreover, compared to the mathematically deduced expectations of 12.8% no overlap for random assignment in districts with two LDP PARC members, and 30% no overlap for districts with two LDP PARC members, we find a startling difference between two-member and three-member districts. Whereas real districts with two LDP PARC members avoid overlap twice as often as McCubbins and Rosenbluth predicted, LDP PARC members in HR districts with three LDP members have enormous rates of overlap -- either they cannot avoid it, or something else is going on that makes overlap in these districts tolerable for them. It is worth pointing out that districts with 3 LDP representatives are obviously more conservative than districts with only 2 from the LDP, which may offer a clue. Finding out which committees these people serve on should tell us still more. Thus we agree with McCubbins and Rosenbluth that LDP HR members may intentionally seek differentiation from their same-district colleagues when they obtain PARC assignments. But we think the data support a more complex model of the strategies that LDP HR members are pursuing when they do this.

Table 1: Actual and Predicted Overlap in PARC Committee Assignments

	Districts with two PARC members, 1980-1993	Districts with three PARC members,	Districts with two or three PARC members,
--	--	------------------------------------	---

⁶ If we include all LDP Lower House members, the mean number of PARC committee assignments per member goes down to 2.8961

	N = 281	1980-1993 N = 113	1980-1993 (Total) N = 394
Total districts without overlap	76	3	79
1 overlap in the district	mode = 30	20	150
2 overlaps in the district	62	23	85
3 overlaps in the district	13	mode = 42	55
4 overlaps in the district	0	17	17
5 overlaps in the district	0	5	5
6 overlaps in the district	0	1	1
7 overlaps in the district	0	2	2
Total districts with overlap	205	110	315
% actual non-overlap	76 / 281 = 27%	3 / 113 = 2.7%	79 / 394 = 20%
% actual overlap	205 / 281 = 73%	110 / 113 = 97%	315 / 394 = 80%

Our model of the coordination game among LDP colleagues from the same electoral district addresses both of the problems McCubbins and Rosenbluth ended up with -- (1) a huge exception and (2) weak evidence where the evidence is consistent with their interpretation. Instead of conflating pork services and policy-based committee assignments as one vote-dividing strategy, we distinguish between two vote-division strategies that lead to different preferences about committee assignments. Providing pork to concentrated subgroups of constituents produces a geographically-based technique for dividing the vote that does not require LDP HR members to seek assignments on different PARC committees. For HR members using a geographical strategy of vote division, it is perfectly safe for representatives from the same district to serve on the same PARC committees, as long as those committees are concerned with geographically concentrated benefits, as are the Agricultural and Construction policy PARC committees. These LDP HR members do not need to worry about distinguishing themselves from each other on the basis of non-pork policies. They can serve on the same pork-dispensing committees as their colleagues from the same district, but they will seek different pork for different constituents within that district. Other LDP HR members may find geographically-based pork is not what their constituents want, and they are the ones who should be using policy-based strategies of vote division that do not deliver geographically concentrated pork to particular sections of the electoral district. Instead, these HR members' vote division strategies will emphasize differentiation among LDP representatives along non-pork policy lines, and these HR members will try to avoid overlapping assignments on PARC committees.

By employing two different strategies of vote division, we expect that our model will convert McCubbins' and Rosenbluth's finding with a huge exception into two separate equilibria. We expect more overlapping assignments to certain PARC committees that influence the provision of geographically concentrated pork (Agriculture, Forestry, Construction), and we expect much less overlap in assignments to other PARC committees related to policies that provide more diffuse public goods across entire districts. Combining these two predictions allows us to forecast greater (non-random) amounts of (non-random) overlap in certain committee assignments and less in others, and improves upon the McCubbins-Rosenbluth interpretation.

III. SNTV and the Personal Vote

It is well known that the SNTV/MMD electoral system leads to competition among members with the same party label and requires each candidate to gather not simply votes for his/her party but also personal votes to be elected. Carey and Shugart (1995) proposed an analytical framework whereby we can compare various electoral rules in terms of the strength of the resulting incentives for personal votes and party votes. Their framework identified SNTV/MMD as one of the most extreme electoral rules in producing strong incentives for soliciting personal votes, compared to other systems. In a sense, candidates of large parties under such systems have to campaign independently from their party and its platform. Candidates who win and hope to run again must use their time as elected representatives to cultivate and maintain their personal support. But since they also hope to join and remain part of a ruling majority, they also have an incentive to coordinate their competition with colleagues from the same electoral district at home by working out ways to divide total party support available in that district so as to maximize the number of party candidates winning seats. The party as a whole also has an incentive to assist HR members with this task, since its grip on power depends on their being able to deal with the challenge of vote division. We believe that LDP HR members use their policy activities while serving as representatives to devise vote-dividing strategies.⁷

⁷ SNTV/MMD creates a substantial risk that parties and candidates will make errors of nomination (nominating the wrong number of candidates to run in a district), as well as errors of vote division (failing to divide the vote evenly among a correctly chosen number of candidates). Over time, the LDP has clearly learned to address most of its errors of nomination. But errors of vote division are more intractable, and right up until the last

IV. Strategies of Vote Division and Legislative Activities

Vote division can take many forms. First of all, a strong party can simply direct its local organizations to divide their votes in some way. The National People's Party [Kuomintang, or KMT] of Taiwan is one political party that solves its coordination problems through centralized directives for vote division. However, this kind of vote division is exceptional, since the very electoral rules that necessitate vote division almost always weaken the unity of larger parties. Even when the party center is too weak to direct local party branches and individual candidates to divide their votes in some way, we might expect to see candidates developing their own techniques of vote division -- whether this involves experimentation with different campaign themes or explicit pacts among candidates. This paper will focus on these decentralized strategies of vote division among legislators, and the corresponding policy activities they engage in while serving in the Diet.

As already mentioned, we believe that candidates at the local level have two different methods of vote division available to them: a geographical or pork-based strategy, and a non-pork policy-based strategy.⁸ Geographical division of the vote occurs when legislators divide the district into their own geographical subregions and each legislator concentrates representation, constituent service, and campaigning for votes within his own subregion inside of the electoral district. To the extent that legislators do this cleanly and completely, they have actually created smaller informal electoral districts inside of the formal one. The policy activity that would correspond to this strategy would be geographically concentrated pork-barrel service, particularly in agriculture or construction, where projects are targeted to very specific locations. In fact, we may be able to infer the operation of a geographical strategy from the degree to which we find geographically-delimited pork-barrel services being provided in an electoral district.⁹ On the other hand, sectoral or

election based on SNTV/MMD rules in 1993, there might be a huge gap between the LDP's most and least successful candidates in a district. Party and faction leaders are particularly noteworthy as "vote hogs" who exacerbate errors of vote division. We would expect over time to see both party and individual candidates develop vote-dividing techniques to reduce such errors.

⁸ Verdier, 1995; Cox and Thies, 1998. This division into two policy types is somewhat similar to Kitschelt's division (2000).

⁹ This hypothesis would appear to be confirmed if we found MORE pork-type spending in districts with two or more LDP representatives than in places with only one. Takako Okuda

policy-based vote division occurs when legislators from the same party and the same electoral district differentiate themselves by becoming specialists in different policy issues. They would then receive their electoral support from organized interest groups in their district that share that concern, and from additional groups that could supply campaign funds or labor even if they were located outside of the electoral district and could not supply votes. All else being equal (number of LDP representatives per district, say), then, when a sectoral method of dividing the vote is being used we would expect to see LDP HR members from the same district covering a larger number of policy issues in their committee duties and other activities than if they were relying on geographical strategies of vote division or on no strategy for vote division at all.

A. Two equilibria and vote division

In an effort to assess the incentives and difficulties that two candidates might face in devising ways to divide the vote, we explored the two strategies of vote division with a game theoretic exercise. But first, as a foundation for the arriving at the net payoffs (benefits minus costs) to insert into the game matrix, we created a simple typology of vote-division strategies. Figure 1 illustrates the typology of four different campaign strategies available to a single candidate who is campaigning in a district with two sub-regions (R1 and R2) and two salient issues (P1 and P2). (1) A candidate could choose to emphasize one of the two policy issues and campaign in only one region, as in R1, P1, but this is only one fourth of the available campaign “space” and threatens the candidate who campaigns this narrowly with defeat. (2) A candidate could instead choose to campaign in one geographic zone but emphasize

(2001) did NOT find such a result when she aggregated election districts into prefectures in order to compare them to prefectural-level public works spending. However, her finding does not completely rule out our guess. First, Okuda's results might change if public works spending could be broken down to the level of the electoral district. Second, there is also the possibility that we would indeed find more pork spending in districts with two or more LDP members where those members opt for the geographic strategy of vote division, but that the results are blurred as long as districts with multiple LDP representatives who use the other strategy of vote division are included in the analysis. Pending discovery of data on public works spending at the electoral district level, however, we are unable to run such tests. However, Hori has already established that the total number of LDP HR members per prefecture (no distinctions here as to how many come from the same district) is highly correlated with prefectural spending on public works. Interestingly enough, this correlation with high public works spending holds for senior members of the LDP (those who have served five or more terms) but does not appear for ministers and vice-ministers, nor for LDP members of the PARC committee on construction.

both policy issues, thus targetting half of the available issue-space by relying on a geographic division of the vote. This is illustrated with the R1, P1, P2 strategy. (3) Alternatively, a candidate could choose to campaign throughout both regions of the district but to emphasize just one of the two salient issues, thus targetting half of the available issue-space by relying on a policy-based division of the vote. This is illustrated by the R1, R2, P1 strategy. (4) Finally, a candidate who is unwilling to focus on just one region or to emphasize just one issue may end up doing wasteful blanket campaigning -- everywhere, on both salient issues, as in R1, R2, P1, P2. These are the strategies available to our candidate: to divide the vote too narrowly and leave the majority of the issue space to one's rival, to opt for one of the sensible division strategies -- focussing on a policy that is especially salient to the whole district, or focussing on half of the district but dealing with both of the issues that are locally important -- or to adopt the default strategy that remains when candidates fail to arrive at a vote-dividing agreement, and thus to campaign wastefully everywhere on everything.

Figure 1: Dividing the Vote by Region and Policy

	R1, P1	R1, P1, P2	R1, R2, P1	R1, R2, P1, P2																																				
	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td></td><td>R1</td><td>R2</td></tr> <tr><td>P1</td><td>R1,P1</td><td>R2,P1</td></tr> <tr><td>P2</td><td>R1,P2</td><td>R2,P2</td></tr> </table>		R1	R2	P1	R1,P1	R2,P1	P2	R1,P2	R2,P2	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td></td><td>R1</td><td>R2</td></tr> <tr><td>P1</td><td>R1,P1</td><td>R2,P1</td></tr> <tr><td>P2</td><td>R1,P2</td><td>R2,P2</td></tr> </table>		R1	R2	P1	R1,P1	R2,P1	P2	R1,P2	R2,P2	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td></td><td>R1</td><td>R2</td></tr> <tr><td>P1</td><td>R1,P1</td><td>R2,P1</td></tr> <tr><td>P2</td><td>R1,P2</td><td>R2,P2</td></tr> </table>		R1	R2	P1	R1,P1	R2,P1	P2	R1,P2	R2,P2	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td></td><td>R1</td><td>R2</td></tr> <tr><td>P1</td><td>R1,P1</td><td>R2,P1</td></tr> <tr><td>P2</td><td>R1,P2</td><td>R2,P2</td></tr> </table>		R1	R2	P1	R1,P1	R2,P1	P2	R1,P2	R2,P2
	R1	R2																																						
P1	R1,P1	R2,P1																																						
P2	R1,P2	R2,P2																																						
	R1	R2																																						
P1	R1,P1	R2,P1																																						
P2	R1,P2	R2,P2																																						
	R1	R2																																						
P1	R1,P1	R2,P1																																						
P2	R1,P2	R2,P2																																						
	R1	R2																																						
P1	R1,P1	R2,P1																																						
P2	R1,P2	R2,P2																																						

We next devised a game theoretic matrix that pits the campaign strategies that could be chosen by two candidates against each other and illustrates the payoffs (benefits in vote yield, less campaign costs) for each of the resulting outcomes.

Figure 3 illustrates a payoff matrix for a game of vote division between two candidates, A and B, from the same party, in a completely hypothetical district. We developed algebraic formulae for the payoffs, so that we could identify the impact of potential changes in certain components of the payoffs, according to the rules below.

1) We assume that the voters for whom A and B compete are evenly distributed across the 2x2 issue space that results from two regions and two salient issues. Thus 25% of them live in R1 and care about P1, 25% live in R1 and care about P2, 25% of them live in R2 and care about P1, and the final 25% live in R2 and care about P2.

2) We also assume effective campaigning -- that is, if only one candidate targets his campaign at a specific region and issue space, he will actually win the allegiance and votes of all the voters in that space (so we add 1.0 point to the payoff for that candidate for that space). If two candidates target identical campaigns to the same region-and-issue space, they will divide supporters located in that region-and-issue space equally between them (so we add 0.5 point to the payoff for each candidate per space).

3) We allow both candidates to choose amongst all of the available combinations of campaign and vote-division strategies. They can each target one subregion or both, one policy issue or both, or combinations of subregions and policy issues. There are nine campaign strategies available to both candidates: (R1, P1), (R1, P2), (R2, P1), (R2, P2), (R1, R2, P1), (R1, R2, P2), (R2, P1, P2), (R2, P1, P2), and (R1, R2, P1, P2). However, we omit from Figure 3 the rows and columns that would have resulted from the first four of these choices, because they are all dominated strategies that no rational candidate will choose anyway, foolishly targeting only one fourth of the available regional-and-policy space available. Instead, Figure 3 pits the 5 remaining strategies against each other in a 5x5 matrix: the results when each candidate can choose among a campaign aimed only at a subregion within the district but emphasizing both important issues, a campaign emphasizing one of those issues but conducted throughout the district, and the default strategy of campaigning everywhere on everything when no agreement on vote-division has been reached, thus targeting no particular subgroup of voters and offering no opportunity for mutually beneficial coordination to his same-party rivals.

4) We also assume that campaign costs ("c") rise with the size of the geographic and policy space that candidates target, and that friction costs ("f") rise as rival candidates select more of the same appeals. The more regions and policies a candidate targets, the greater the expense of campaigning and the more bitter the competition against party rivals. The fewer regions and policies a candidate targets, the smaller the campaign costs and the lower the competition with party rivals, but the greater the risk of aiming at too small a constituency to win. Thus we assume that campaign costs, c , are proportional to the size of the regional and policy space targeted by the campaign ($c \mid 0 < c < 1$ per space). We also assume that there will be additional costs in the form of friction, f , among candidates who try to appeal to the same regional or issue space within the district, ($f \mid 0 < f < 0.5$ for each regional or

policy overlap).¹⁰

A candidate who opts to concentrate on only one region and one policy will incur only one unit of campaign costs, or $-c$. A candidate who focuses on both subregions but one policy, or both policies but one subregion, will incur two units of campaign costs (as shown in the two diagrams in the center of Figure 1), or $-2c$. Finally, one who opts to campaign in both subregions on both policy issues will incur four units of campaign costs ($-4c$).¹¹

If we refer back to Figure 1 for a moment, the shading of each "effort-space" cell also represents a unit of campaign costs for a single candidate, so the shading also illustrates the costs for the strategy that one candidate chooses. We can use the same technique to calculate units of friction when two candidates choose the same chunks of issue-space to campaign in, shown in Figure 2. When two candidates target the same region-issue space, we assume that they each incur one unit of friction for each unit of region-issue space in which their campaigns overlap. If we indicate the region-issue spaces chosen by one candidate with horizontal lines, and the region-issue spaces chosen by the other candidate with vertical lines, then wherever they choose to compete in identical region-issue spaces, a grid of both horizontal and vertical lines appears. For each overlapping region-issue space that turned into such a grid because the candidates compete against each other, we would have to deduct from each candidate's payoffs (for values in Figure 3) one unit of "friction" costs. Thus campaign costs grow with the size of the region-issue space that a single candidate targets, and friction costs grow with the amount of **overlapping** region-issue space selected by **two** competing candidates.

¹⁰ Two other complications arise from the impact of campaigning on turnout that we will ignore for the time being. Two candidates from the same party might divide the votes available evenly, but their mutual competition could create confusion that drives some voters away so they don't vote for this party at all or may even abstain from voting entirely. Conversely, conventional wisdom has it that the larger the number of candidates from the same party who are running, the more interest their mutual competition will attract, and the more party supporters they draw to the polls (even though their mutual competition might be quite destructive and could result in all of them losing even with this greater turnout among party supporters).

¹¹ Only the most careful and peculiar candidates could manage to incur three units of cost, by targetting one policy in one region and both policies in the other region of the district.

Figure 2: Calculating campaign costs and friction costs

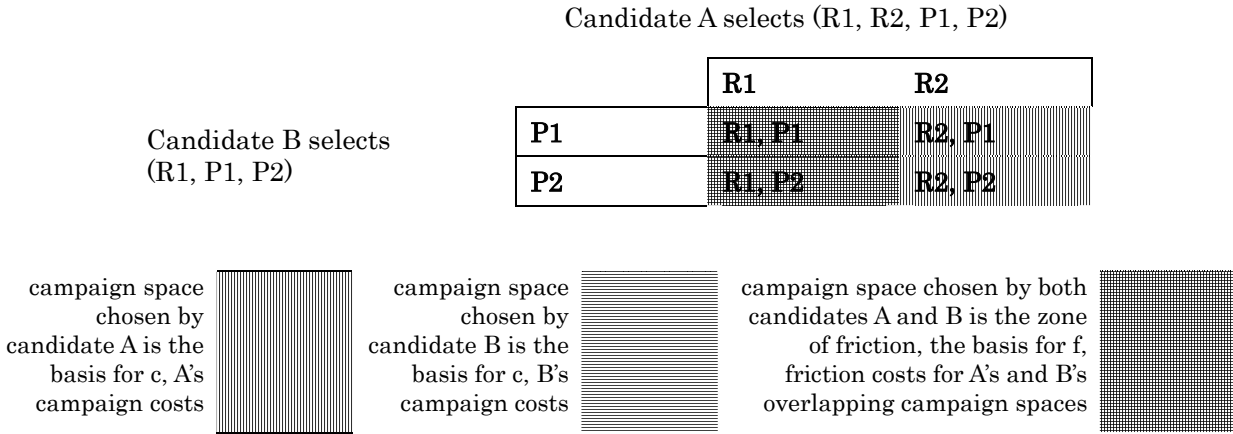


Figure 3: Payoffs for Regional and Policy-Based Vote-Division Strategies about here

The algebraic values in Figure 3 show that the game form would vary according to the levels of campaign and friction costs in a real campaign. Just as Michael Taylor has discovered in other circumstances, there are in fact chickens nesting in the prisoner's dilemmas (Taylor, 1987). If for some reason c and f are very small (if the Temptation payoff for defecting is greater than the Reward payoff for mutual cooperation, or if $3 - 2f - 4c > 2 - 2c$), then the game is a "prisoners' dilemma" where there is a strong incentive for both candidates to defect, and the suboptimal equilibrium that results is for both candidates to try to conduct comprehensive campaigns for all subregions and policies: (R1 R2 P1 P2), (R1 R2 P1 P2). They might only be willing to cooperate on a vote-division rule if they have stable candidacies -- if they are both incumbents perhaps -- and expect to be running against each other for many elections to come, in iterated play. But if either is reluctant to trust the other and fears that the other may back out of a vote-division rule in order to amass large numbers of votes -- perhaps one candidate has a particularly large war chest and can afford to try this -- then the likelihood of a vote-division contract by convention is low, and mutual defection is likely.

The incentive to cooperate in searching for a vote-division rule will be greater where candidates face high values of c and f -- that is, where they anticipate very

high campaign costs and see cooperative vote-division as the only way to reduce costs to manageable levels. In fact, where c and f are quite high, the cost of mutual defection could increase enough to change the game from prisoner's dilemma to chicken. Whereas prisoner's dilemma is a collaboration game where the players will want but may not capture mutual gains, chicken is a coordination game of mutual aversions where the players will avoid the highest-cost outcome (Stein, 1983).

We believe that districts vary in the degree to which certain campaign costs are built into the situation. For example, in rural districts where voters accept and even expect bribes from candidates, and take personal attacks seriously in deciding whom to vote for, candidates face built-in campaign costs that are quite high to start with. In contrast, in urban areas where voters do not expect to be paid, a successful campaign can be run on a smaller budget (small c and f costs). These kinds of costs, based on the nature of the district rather than on the kind of competition that ensues, produce different games between LDP rivals and different incentives to search for vote-division strategies. Presumably, where expected costs are low even for a district-wide campaign on all issues, cooperation on a vote-division strategy does not yield so much additional benefit, and we may see no coordination and an effort to campaign across all regions of the district on all issues. But where built-in costs are very high to start with, the savings from coordination are worth having. Many critics of Japanese politics note that campaign costs are very high in most districts -- in effect, the actual game form is a coordination game rather than a dilemma game. In other words, in these chicken-like games, two Nash equilibria appear if the two candidates agree on either a geographical vote division ((R1 P1 P2) paired with (R2 P1 P2)) or a sectoral vote division ((R1 R2 P1) paired with (R1 R2 P2)). In these equilibria, candidates are able to coordinate across one of the two available rules for dividing votes (geography-pork or non-pork policy), but are not drawn toward the outcome in which they fail completely to cooperate on any vote division rule, the Nash equilibrium outcome for a PD game. Two important observations come from this game theoretic investigation of vote-division strategies and campaign costs. First, the nature of the game and the equilibrium solutions available will vary across districts according to the geographical and policy-based divisions available, the number of LDP contenders, voter expectations, and the actual costs of winning the allegiance of voters. Second, once candidates arrive at an equilibrium strategy for dividing the vote, the strategies are stable in the sense that there is no incentive for both candidates to switch their strategy if their rivals do not.

B. Empirical analysis of PARC committee service

The following sections will discuss the empirical data and the tests that indicate that LDP representatives have indeed arrived at these two vote-dividing equilibria. We will examine the data on assignment of individual LDP HR members to the 17 standing committees of PARC before going on to examine data on overlap in these assignments at the district level. The data at the individual level may well provide indirect evidence for the coordination process, which becomes a collective problem at the district level. We will use the Mizusaki index, which indicates the degree of geographical concentration of votes for each candidate, along with that candidate's committee assignments, to examine the causal linkage between electoral strategies and policy-related activities.

The seventeen standing committees that we will deal with are as follows: Cabinet, Local Administration, Security, Justice, Foreign Affairs, Finance, Education, Health & Welfare, Labor, Agriculture & Forestry, Fishery, Commerce & Industry, Transportation, Post & Telecommunication, Construction, Science & Technology, and finally Environment. Our data include the PARC committee membership of all LDP members after five general elections of 1980, 1983, 1986, 1990, and 1993. We counted each LDP representative as a separate person or case each time s/he won a seat in these five elections. The data came from the annual publication of LDP PARC membership rosters [*Jiyû minshutô seimu chôsakai meibô*] and the Official Newsletter of the House of Representatives [*Shugiin kôhô*].¹² The normal time for assigning LDP HR members to PARC committees is of course immediately after an election, since there are always new LDP HR members to accommodate. LDP Diet members do occasionally change committees during their terms of service, and whole committee memberships may sometimes be changed, at other times as well, particularly when a Prime Minister shuffles his cabinet. However, we ignored these changes, since we were most interested in the assignments that LDP HR members asked for, and not those far fewer changes occasioned by other events. As Table 2 illustrates, the entire data set over these five elections contained 1357 cases. 1214 of these cases were people from electoral districts with other LDP seat-holders, and 1164 of the total were assigned to PARC committees. Of the 1164 who served on

¹² Because the 1983 election was held in December, we used the membership roster for 1984 to collect data on PARC assignments after this election.

PARC, 969 were from districts with other LDP seat-holders who also served on PARC. Much of the analysis that follows relies only on these 969 cases. By restricting most analyses to this group, we prevent the results from being confounded by the presence of LDP PARC members who have no chance of overlap anyway, either because the other LDP seat holders in their district do not serve on PARC, or because they are the solo LDP winners in their districts and have no need for vote-division strategies.

**Table 2: PARC Assignments for LDP HR members,
by number of LDP / PARC colleagues in the district
about here**

B1. PARC assignments of LDP HR members

Our first test of LDP HR members' assignments on PARC committees concerns whether LDP HR members from the same district were placed on the same committees together. For each LDP HR member, then, we tracked the presence of rivals and the committee assignments received. The dependent variables (**PARCi** ($i=1,2,3,\dots,15,16,17$)) here are dummy variables signifying an LDP HR member's affiliation with each of the seventeen standing committees of PARC. **PARCi** takes a value of 1 if the HR member is on the committee $_i$, and a value of 0 if the HR member is not on that committee. The independent variables (**RIVALDUMi** ($i=1,2,3,\dots,15,16,17$)) are dummies for whether the HR member has a rival member from the same district on that committee. If LDP member has any rival member (whether one, two, or even three other LDP HR members from the same electoral district), who already has a membership in the i th committee, then **RIVALDUMi** = 1; otherwise, **RIVALDUMi** = 0. Where LDP "loners" (those who serve on PARC committees but have no same-district rivals) hold seats, **RIVALDUMi** = 0.

$$\text{Logit (PARCi)} = \alpha + \beta (\text{RIVALDUMi}) \quad (\text{Equation A})$$

We ran seventeen of these logit regressions -- one for each committee. These regressions should simply show the degree of differentiation among members on each committee. If LDP HR members really differentiated themselves from LDP colleagues from the same district in all situations, as McCubbins and Rosenbluth hypothesized, we should expect a negative coefficient for all of these regression

equations and thus for each committee. In other words, for all committees, LDP members should be less likely to join the same committees that an LDP rival from the same district belongs to. However, the two vote-division strategies in our model give us slightly different expectations. While we expected negative coefficients for LDP HR members using a non-pork policy-based strategy to differentiate themselves from same-district rivals, we expected either no relationship or even a positive regression coefficient among LDP HR members who used pork and geographical concentration to divide the vote in their electoral district. That is, LDP members who differentiate themselves from each other by focusing on different subregions in their district do not need to worry about further differentiation according to non-pork policy issues. Rather, as we mentioned earlier, they are more likely to accept overlapping committee assignments related to geographically concentrated policy services such as agriculture and construction.

**Table 3: District Overlap in PARC Committee Assignments
about here**

Table 3 offers results that confirmed our expectations. Legislators seemed to differentiate themselves from same-district rivals in some PARC committees but not in others, and to have overlapping memberships with same-district rivals in some other committees.¹³ We have adjusted standard errors and corresponding T-statistics by grouping data for the same legislators from different time periods. We have arranged the different committees in a sequence corresponding to increasing likelihood of overlap in assignment.

Only five committees show statistically significant negative regression coefficients (Education, Local Administration, Foreign Affairs, Posts and Telecommunications, and Finance), so it is on these committees that LDP HR members from the same district seem to have somehow orchestrated differentiation in their committee assignments. Table 3 shows both odds ratios and regression coefficients, and from the odds ratios it is possible to calculate that, for example, an LDP HR member is 44.72% (or 0.5528 - 1.0) less likely to serve on the Telecommunication Committee if another LDP HR member from his own district is already serving on that committee than to serve alone on Telecommunications. The

¹³ The analysis was not remarkably different when we adjusted it by clustering the same legislators together across all five elections.

Justice Committee also yields negative values on the same measure, though not statistically significant ones, and this may be a case where LDP HR members seek porkless policy-based differentiation from their rivals too. On the other hand, we see statistically significant positive coefficients for six committees: Fisheries, Science and Technology, Agriculture and Forestry, Security, Commerce & Industry, and Construction, in declining order. This means that that LDP members with same-district rivals already serving on those committees are more likely, not less, to end up serving on those committees with their same-district colleagues, than to serve alone. For example, the odds that an LDP HR member from a district where the LDP won more than one seat will serve on the Fishery committee with one of his district colleagues are 220.86% (or $3.2086 - 1.0$) greater than the likelihood that he will serve on Fisheries alone. Nonetheless, we need to be careful interpreting this particular result. LDP HR members interested in fisheries are most likely to come from coastal districts, so the pressure for overlap may come partly from the strong district-wide concerns in coastal areas, and not only from a vote-division strategy that delivers pork-barrel benefits to geographic subregions inside of the district.

This result refutes the hypothesis of McCubbins and Rosenbluth that LDP members attempt to differentiate themselves from same-district colleagues in every committee. Instead, we find that they differentiate for some committees and overlap in others. Specifically, the particular committees where we find high overlap appear to support our hypothesis. Committees with strongly positive coefficients include the Agriculture, Fishery, and Construction committees, which are all related to geographically concentrated policy services.¹⁴

Our second test about PARC committee assignments relates who got into which committees to the attributes of individual LDP HR members and the characteristics of their districts. The dependent variable is the same as for our first test above: **PARCi**, a dummy variable for each individual LDP member identifying whether he has a membership in PARC committee i . Using the index of regional strength developed by Mizusaki, which indicates what portions of votes a candidate has collected from specific geographical areas within a district, we try to determine the relationship between legislators' electoral strategies and their choice of PARC committees (Mizusaki, 1982).

¹⁴ It may be that public funds for Commerce and Industry, Science and Technology, and Security also constitute pork-like infusions and subsidies to particular industries in particular places, but we would need to investigate budget categories closely to determine this.

$$MIZUSAKI = \frac{\sum_{j=1}^m q_j |p_{ij} - p_i|}{2 p_i}$$

m : Number of municipalities (cities, towns, and villages or shichôson) in a district

q_j : Percentage of total vote in the district that came from municipality _{j}

p_{ij} : Percentage of votes in municipality _{j} that *candidate _{i}* won

p_i : Percentage of votes that *candidate _{i}* won from the whole district

The Mizusaki index for legislators who use a geographical strategy of vote-division, and who therefore collect their votes from narrow areas within the district, will be high. Candidates who do not receive geographically concentrated votes but instead receive their votes quite evenly from all over the district will have a low value on this index. A candidate who gets exactly the same percentage of votes from every municipality within the district will have a Mizusaki index value of zero.¹⁵ Figure 3 indicates the distribution of the **MIZUSAKI** index for the LDP HR members in our sample.

**Figure 4: Distribution of the Mizusaki regional strength index
for LDP HR Members, 1980-1993
about here**

We then ran the seventeen regression analyses, one for each PARC committee, again, this time to explore the impact of Diet seniority and closeness of the previous electoral victory on membership in the seventeen PARC committees. The dependent variable is the same as in our first test above: **PARCi**, a dummy variable for each individual LDP member that identifies whether or not he is a member of PARC committee i . The independent variables for these regressions, are

TERM: the number of terms the LDP HR member has served (including the current term)

¹⁵ The weakness of **MIZUSAKI** index is that it is dependent on the number of municipalities within a district, which varies across districts.

VMARGIN: a candidate's margin of election victory, or how large the election victory of an individual LDP member was in the last election (Cox & Rosenbluth, 1995; Reed and Scheiner, 2002).¹⁶ The VMARGIN for candidate i is

$$\text{VMARGIN } i = \frac{v_{ij} - q_j}{q_j} \text{ where } q_j, \text{ the Droop quota, is}$$

$$q_j = \frac{v_j}{M_j + 1}$$

q_j : Droop quota (guaranteed victory threshold) for district j

v_{ij} : Total votes cast in district j for candidate i

v_j : Total votes cast in district j

M_j : District magnitude (number of seats available) for district j

MIZUSAKI: the degree of geographical concentration of votes for an individual candidate (defined here as the natural log of the Mizusaki index above)

AFFRATE: the natural log of the portion of the district's population comprised by workers in agriculture, forestry, and fisheries. We introduced this variable because the huge membership of the Agriculture & Forestry and Fishery Committees, as well as the high overlap on these PARC committees among LDP HR members from the same district, made us suspect that districts with substantial agriculture, forestry, and fisheries sectors might behave differently in many of our analyses, and we wanted the capacity to

¹⁶ Cox and Rosenbluth (1995) and Reed and Scheiner (2002) have developed and used this index, but sometimes call it marginality, which unfortunately conveys the impression that a high score refers to a close election rather than to a large margin of victory. We have therefore used the term "victory margin" to convey accurately what a large value on this measure means.

control for this difference.

YEAR1993: year dummy for the data of 1993. We anticipated needing this dummy variable as a filter in various equations because the LDP lost power in the 1993 election and thus the post-1993 PARC assignments (when PARC could no longer serve as a shadow cabinet and when no LDP HR members would be exempt from PARC service for holding a cabinet post) have to be regarded as potentially peculiar.

Some LDP members, such as cabinet ministers, vice ministers and very senior members (faction leaders) have no PARC assignment at all, partly because the LDP has tried to create some separation of powers between its own executive and legislative branches. Therefore, in our analysis of the membership in PARC committees, we need to distinguish this group of LDP members with no PARC assignment on a committee, because they have no committee memberships at all, from those who are not members in that particular committee but do belong to other PARC committees. Because the particular class of LDP Diet members who are excused from PARC committees -- ministers, vice-ministers, and LDP leaders -- are highly likely to be people who have served many Diet terms and who generally win their seats by substantial margins, however, we would get severe selection bias on the estimates if we just dropped these people from the analysis.¹⁷

In order to avoid this selection bias problem, we used a probit model with sample selection (Van de Ven and Van Praaeg, 1981; Hojnacki, 1997) to separate or "mark" the LDP HR winners who do not serve on PARC committees at all. We first created another independent variable for the process of "selecting" or "filtering" the sample: **MPARC**, a dummy variable to indicate whether an LDP HR member had PARC obligations or not. If a legislator has one or more PARC committee assignments, then **MPARC**=1, and if a legislator does not have any PARC committee assignment, **MPARC**=0. In other words, if

$$1 \leq \sum_{i=1}^{17} PARC_i, \text{ then } MPARC=1, \text{ and if}$$

¹⁷ We tested a simple probit model by dropping these high-ranking LDP officials who have no PARC assignment, and compared the results with those from the probit model with the sample selection discussed below. The results were quite different, indicating that we should rely on the

$$0 = \sum_{i=1}^{17} PARC_i, \text{ then } MPARC=0.$$

We then ran the following probit regression with sample selection (reported as "altered" in Table 4) to explain participation in each PARC committee.

$$y_j^* = x_{1j} \beta_1 + \varepsilon_{1j} \quad (\text{Equation B -- unfiltered})$$

The sample selection mechanism calculates a filtered or altered version of the regression by ignoring the dependent variable for observation j on some occasions. For the altered-sample version of the analysis, we take note of observation j only when

$$z_j^* = x_{2j} \beta_2 + \varepsilon_{2j} > 0 \quad (\text{Equation C -- filtered})$$

B1 (i). Predictions for the filtered sample

We will begin by discussing our expectations about the impact of each independent variable for the equation we use to produce the filtered or altered sample (Equation C). Filtering the sample proved quite interesting for exploring some of the organizational characteristics of the LDP. Individuals in the filtered sample (those who have at least one PARC assignment, excluding those who do not serve on PARC) do include mostly rank and file members, while those filtered out do tend to be mostly party leaders. Thus this particular filtering or selection process in our analysis becomes a mechanism for separating LDP leaders from followers.

We expect a significant negative coefficient on **TERM** in the equation for the filtered sample analysis. Since the LDP has established a steady career system based on seniority, senior party members who have served many terms are more likely to join the cabinet or hold other high party offices, and thus to have no PARC assignment (Kawato, 1998). Matsuzaki and Satô (1986) confirmed the unwritten LDP rules that Lower House members in their fifth or sixth term should become cabinet ministers, and that Lower House members in their third and fourth term should be appointed parliamentary vice-ministers. Although vice-ministers with

probit model with the adjustments in the sample that are discussed below.

relatively fewer terms might reduce the size of the coefficient, we still expect a negative sign overall because of this seniority rule within LDP.

We also expected a negative relationship (sign) between **VMARGIN** and service on PARC committees, because the LDP's biggest winners -- those with the safest seats -- should be more likely to be identified as promising future leaders, to be offered a chance to join the cabinet, and therefore to have no PARC assignment. However, we have to consider the possibility that causality runs the opposite direction -- that legislators grow in electoral strength after they get the nod to join a cabinet. We actually think it more likely that voters respond to the signal conveyed by a cabinet appointment -- thus endorsing the verdict of party leaders that their representative is indeed promising -- rather than the reverse (in which voters first become more enthusiastic for a candidate who then gets noticed by party bigshots). Most cabinet ministers are returnees to the cabinet, and in any given cabinet there are only a few new faces -- generally, the parliamentary vice-ministers and just a few ministers who are receiving cabinet appointments for the first time in their careers. LDP leaders usually advance their careers by working through several various ministerial positions, and we think that these repeaters in the cabinet account for most of the strong coefficients that relate high electoral strength to the absence of PARC committee obligations.

For the **MIZUSAKI** index of geographic concentration, we expect a positive sign for the filtered-sample analysis, because those who gather votes more widely are more likely to be party leaders without any PARC assignment. Regardless of beginnings, LDP leaders should no longer be constrained by a commitment to a particular geographical subregion, because their name value in the district now should function to gather floating votes all over the district. In contrast, those gathering their votes from a narrow geographic subregion within the district should be more likely to be new politicians just developing their support base.

If we accept the prevalent view that most party leaders in the LDP come from rural electoral districts, then the coefficient for **AFFRATE** should be negative. According to this view, the higher the profile of agriculture, forestry, and fisheries as employers of the labor force in the district, the more likely LDP members from the district would be cabinet ministers or party officers, and therefore have no PARC assignment.

Finally, the coefficient for the dummy variable **YEAR1993** should be strongly

positive. Since the LDP lost power after 1993 election, LDP members could no longer serve as cabinet ministers or parliamentary vice-ministers. With the exception of a handful of LDP party officials, then, almost all LDP HR members have some PARC assignment after the 1993 election.

B1 (ii) Predictions for the unfiltered sample:

Let us now return to analysis of the unfiltered Equation (B). At first, we must emphasize that we have seventeen different regressions, one for each of the seventeen standing committees of PARC. Although our sample selection processes for filtering were identical for each of the 17 committees, when we omit the filtering and incorporate senior LDP members who serve on no PARC committees into the analysis, we expect different results with respect to the nature of each committee.

We expect to find that **TERM** (number of HR terms served) has a negative impact on PARC committee assignments. PARC committees are mainly the place for rank and file LDP HR members. Senior LDP people tend to have fewer assignments on PARC committees. Thus we expect that the higher the value of **TERM**, the less likely LDP legislators are to belong to PARC committees. Although some senior LDP figures become specialized in a policy area and manage to dominate policy making in that area by remaining on the relevant PARC committees (these are leading *zoku giin*, or leaders of policy "tribes"), we would expect these few people to have a small impact on the statistical results, overwhelmed by the large number of junior LDP HR members on PARC committees.

For **VMARGIN**, we expect different results for different kinds of PARC committees. Generally, we expect that LDP HR members who barely squeaked to victory will be more likely to join the PARC committees with particularly high electoral value, not only because this would be their obligation as weaker or junior members of the party, but also because PARC assignments would provide them with more direct support in the next election. Inoguchi and Iwai pointed out that service on the Agriculture & Forestry, Construction, and Commerce & Industry committees had high election-winning value for LDP HR members. To this group, we would add Fishery, Transportation, and Post & Telecommunication committees. For these six committees, we expect **VMARGIN** to be negatively related to PARC committee assignments because the more vulnerable members in the last election should be more likely to join these committees. On the other hand, other committees

correspond to ideologically driven policy issues, such as Security, Foreign Affairs, Education, and Environment committees. Membership on these committees may not bring about any additional electoral support to the candidate.¹⁸ In fact, exhibiting a strong commitment to ideologically-based policy issues might be a risky strategy for the next election, because "new middle mass" floaters and LDP supporters not welded to any particular LDP candidate might not like such a strong ideological commitment and would instead vote for a different LDP candidate. Thus, we think that the LDP HR members who would feel they can "afford" to indulge in personal ideological goals or other "dangerous" issue commitments would be more likely to be the ones who win their seats by comfortable margins. Therefore we expect positive relationships between **VMARGIN** and assignment to these four PARC committees.

Because it measures regional electoral strength and is a proxy for a geographically-based vote-division strategy, the impact of the **MIZUSAKI** variable is our main concern. Once again, we anticipate different relationships and signs for the **MIZUSAKI** factor depending on which PARC committee we are examining. We expect a positive coefficient for **MIZUSAKI** for the PARC committees related to geographically concentrated benefits based on pork-type policies. We expect that legislators who gather their votes from relatively small geographical subregions within the district would either provide geographically concentrated policy services to their constituents or at least try to exhibit a commitment to those delivering pork by joining the PARC committees related to such policy services. These are the Agriculture & Forestry, Fishery, and Construction committees. However, we expect either no impact or a negative relationship between **MIZUSAKI** and **PARCi** for the other committees, especially for the four committees -- Local Administration, Finance, Education, and Posts & Telecommunications -- where we found in the last section that LDP HR members sought to avoid assignment if others from the same district were already serving.

We introduced the **AFFRATE** variable as a control to help us identify and separate out the highly agricultural districts. Because **MIZUSAKI** and **AFFRATE** are highly correlated (0.426 for the whole sample, in which $N = 1357$), we ran two different models within our regression analysis on the filtered sample, one including

¹⁸ These non-pork committees might actually be the "right" committees for an LDP representative from an urban area whose voters cared about these issues, unless those voters were choosing other parties (as so many do in urban Japan). It would be interesting to repeat our analysis with an urban-rural variable included.

AFFRATE as an independent variable, and one omitting it. Where **AFFRATE** is included, we would expect positive impact on membership in PARC committees related to policies of interest in rural areas, which includes the Local Administration, Agriculture & Forestry, Fishery, and Construction committees. In turn, we expect a negative impact on membership in the committees whose work is related to demands likely to come from urban constituents, including Education, Health & Welfare, Labor, Commerce & Industry, Transportation, Science & Technology, and Environment committees.

We do not have any concrete expectation in advance for **YEAR1993**, though this variable should be quite important for controlling and isolating the impact of the drastic changes that occurred after 1993 elections. Because several changes that should all have affected **PARCi** occurred at the same time, we could not be sure about the overall impact of this dummy variable on specific committees. First, losing power and becoming an opposition party should have caused some change on the policy activities for all LDP members. Secondly, the LDP's departure from government in 1993 means that many senior members, who otherwise would have held cabinet posts and avoided assignment to PARC committees, had to join PARC committees. Finally, LDP as a whole lost many members who defected to the new parties, and their departures might have affected the pattern of PARC membership. We used **YEAR1993** to remove the confusing impact of such changes when we needed to.

**Table 4: Factors affecting assignment to PARC Committees (probit)
about here**

Table 4 shows the results for both models, with and without **AFFRATE**. The results of analysis with the altered sample are shown only for one committee (Cabinet), because it was the only committee for which the two analyses (regular sample and filtered) produced significantly different results. For other committees, Table 4 shows only the results of analysis done on the regular sample, and there only for the committees where at least one of the two probit models (either the one including **AFFRATE** or the one omitting it) produced some statistically significant results at the $p < 0.05$ level. Therefore Table 4 contains results only for the twelve PARC committees whose membership could be successfully explained with one or both of our probit models. Assignments to the other five committees could not be explained by our models.

The altered-sample analysis for the Cabinet committee shows the results (signs) we expected for **TERM**, **VMARGIN**, and **YEAR1993** at $p < 0.001$ level, while **MIZUSAKI** seemed to have no impact. Most interestingly, **AFFRATE** had a statistically significant impact but in the opposite direction from what we expected. It has been widely believed that LDP leaders come from rural districts, but these results suggest the opposite pattern. Vice-ministers and many ministers are actually more likely to have an urban base than are regular rank-and-file LDP HR members.¹⁹

**Table 5: Expectations and Two Tests for Factors affecting
Assignment to PARC Committees
about here**

Table 5 presents information very similar to what is supplied by Table 4, but in a simplified format that simply indicates the signs of the coefficients that we expected and the results for the two sets of regressions, one including **AFFRATE** and one excluding it. The regressions for Labor and Cabinet committees yielded some significance in the analysis reported in Table 4, but these relationships did not make any sense in terms of our efforts to explain the results. For the other ten committees, **YEAR1993** and the constant were the only significant variables, and there were no significant relationships concerning our important variables.

First of all, the **MIZUSAKI** index of geographically differentiated electoral strength, which is our main concern, shows the expected results for all ten committees in the table. We find a positive coefficient on **MIZUSAKI** for the membership of three PARC committees (Agricultural & Forestry, Fisheries, and Construction) in one or both of the two probit models. For Agriculture & Forestry and Construction, the coefficient remains both positive and statistically significant even if we introduce **AFFRATE** as a control. Thus we know not only that the collectors of geographically concentrated votes like to be on these committees (not

¹⁹ We tested the simple probit model $y^* = \beta \text{AFFRATE} + \alpha$ for the dummy variables of **MINISTER** (if legislators are ministers then $y=1$, otherwise $y=0$) and **VICEMINISTER** (if legislators are vice ministers then $y=1$, otherwise $y=0$). We confirmed that the coefficient for **AFFRATE** is negative in both models, though not at the significant level. Thus we get significant results for the combined sample containing both ministers and vice ministers but not when analysis is performed separately on the two subsets (ministers and rank and file), simply because the two subsets are smaller.

surprising) but also that LDP HR members who get geographically concentrated votes like to be on these committees more often than not regardless of the industrial profile of their district. This includes the somewhat counterintuitive implication that pork-barrel spending on agriculture, forestry, fisheries, and construction has electoral value -- voters care, so LDP candidates can use pork-barrel methods of vote division productively -- even in districts that are not particularly agricultural. For other committees, we found that the **MIZUSAKI** index had either no impact or a negative impact on committee assignments, just as we expected. In sum, if legislators earn their votes from narrow geographical areas within the district, they are more likely to join those three committees, whether their districts are highly rural or not.

As for other control variables, we found unexpected results for some committees. These unexpected results are worth discussing, because they will refine our conventional wisdom about politicians' policy activities in Japan. As for **TERM**, although we expected a negative coefficient for participation in all PARC committees, there were negative signs for only six committees in both regression runs (see Table 4), and only three of the six coefficients (those for Finance, Education, and Agriculture & Forestry) cleared the $p < 0.05$ level of significance. In contrast, **TERM** had a positive and statistically significant impact on committee assignments to Foreign Affairs and Transportation. This result means that senior party veterans are somewhat attracted to these particular committees even though they are otherwise withdrawing from PARC assignments as they rise through party ranks. In contrast, junior LDP members seem to dominate the PARC committees for Finance, Education, and Agriculture & Forestry. We find it somewhat surprising that the seniors would appear to care more about transport than about finance and agriculture, and are willing to leave these latter two committees to juniors, but a possible answer appears below.

For **VMARGIN**, we expect negative coefficients for the committees with direct electoral value and positive coefficients for those that might be electorally risky, particularly ideology oriented committees. What we found were positive coefficients for Security and Foreign Affairs committees, and negative signs for the Posts and Telecommunications committee, as expected. However, the results for some other committees were counterintuitive. We found a positive sign for Commerce and Industry and a negative sign for Education. These results suggest that an assignment to the Education committee has some direct electoral value, and that membership on the PARC committees for Transportation and Commerce & Industry

may not have the direct electoral value that we expected. In fact, the results for Transportation and Foreign Affairs committees are very similar to each other, despite the extremely different subject matter that these two committees deal with. Both of these committees are unusually likely to attract relatively senior LDP members, those who win by comfortable electoral margins, and those from **urban** districts. One possible explanation for this unexpected finding is that members of Transportation committees are no longer pro-pork. Ever since the Japan National Railways were subdivided and privatized in the 1980s, there have been far fewer resources devoted to transportation (particularly to the construction of still more transportation), and thus much less pork-barrel potential in transportation policy, than before. This committee now deals mostly with the more vexing matters of handling inherited JNR deficits and coping with the increasingly hostility in some areas to becoming congested transport nodes. It may not be that the seniors care about these issues, but that they are dangerous for juniors; in this scenario, the juniors leave these sensitive committees to more senior party colleagues who can safely become involved in these controversial and difficult issues. We cannot be sure of this, however, because our data do not supply information about LDP HR members' policy positions or the policy direction chosen by these PARC committees.

B2. Empirical tests at the district level

Our next step is to examine the relationship between the two equilibria for dividing the vote. We assume that if legislators in a district use a geographically based method to divide the district vote, all of them will need to concentrate on providing geographically concentrated policy services. Thus we expect a high degree of overlap in the participation of LDP members from the same district on such PARC committees as Agriculture & Forestry, Fisheries, and Construction. On the other hand, if legislators divide their votes sectorally, they have to differentiate their membership on PARC committees so they can claim individual credit in different policy issues. Thus we expect a low degree of overlap in PARC committee memberships from these legislators. We also expected these two strategic equilibria to be alternatives to each other, so districts would vary in which equilibrium they chose. We have already reported the supporting evidence we found at the individual level. But it would strengthen our hypotheses based on data about individual LDP HR members if we found similar results at the district level, in the form of a positive correlation between districts with geographical vote-division and districts with

overlapping PARC memberships.

Our measurement of the degree of geographical vote division at district level is the mean value of the natural log form of the **MIZUSAKI** index for all of the LDP members from a single district (**mMIZUSAKI**). Thus there is an **mMIZUSAKI** value for each district. Table 6 and Table 7 display individual electoral districts with multiple LDP HR members, sorted according to their values on the **mMIZUSAKI** index. The sample used for this analysis was all electoral districts containing three LDP HR members with PARC assignments. Table 6 shows the 10 districts with the highest values on **mMIZUSAKI**, and Table 7 lists the 10 districts with the lowest scores on **mMIZUSAKI**. Simply comparing these two tables to each other reveals that the **mMIZUSAKI** score for a district predicts a considerable divergence in the nature of overlapping PARC assignments. The higher the **mMIZUSAKI** score for a district, the more overlaps in assignments to PARC committees we find among the LDP HR members from that district. As expected, the particular committees with the most frequent overlaps are the committees for Agriculture & Forestry, Fisheries, and Construction.

**Table 6: Overlapping Committees and Geographically Concentrated Votes
about here**

**Table 7: Overlapping Committees and Geographically Dispersed Votes
about here**

To confirm this relationship between **mMIZUSAKI** and overlaps of PARC membership more generally, we next conducted regression analyses, using **mMIZUSAKI** of course as our principal independent variable and the total number of overlaps in the committee assignment in a single district (**OVERLAP**) as our dependent variable. Two LDP HR members from the district serving on the same committee counts as one overlap; three members from the district serving on the same committee counts as two overlaps. The **OVERLAP** score includes all of the overlaps on various committees that the district's LDP representatives belong to. Thus the total **OVERLAP** score is five for Nagano3, and three for Kumamoto2 (see

Table 6).

In this analysis we also include two control variables. **AFFRATE**, the ratio of agricultural, forestry, and fishery workers per capita (natural log), is included to control for the impact of urban-ruralness. **YEAR1993**, the dummy for the 1993 data, helps us control for the peculiarities that arose when the LDP lost control of the government in 1993.

We divided the districts in the sample for this analysis into two groups, depending on how many LDP HR members from the district were serving on PARC committees: those districts with two PARC members, and those with three. This division was essential, since the potential number of overlaps obviously depends on how many LDP HR members there are to do the overlapping. We have to expect more overlaps in PARC committee assignments from districts with more PARC members. We omitted the districts with one or fewer PARC members because there is no potential for any overlap in such districts, and we did not want to confuse districts like this with districts that had the potential for overlap but still had none. We also excluded the districts with more than four PARC members, because there are so few (only 17) districts of this kind.

**Table 8: Factors affecting Overlap in Committee Assignments
(ordered probit)
about here**

Because our dependent variable, **OVERLAP**, might be considered to be ordinal, we used an ordered probit model for our estimation (Long, 1997, Baily and Brady, 1998, Kreible and Rivers, 1988).²⁰ Table 8 shows the results. The standard errors and corresponding t-statistics are adjusted by grouping together all the data from an individual district for different years. The relationship between **mMIZUSAKI** and PARC assignments was positive, in both the two-representative and the three-representative samples, as a statistically significant level. Thus if districts were characterized by geographically concentrated votes for different LDP winners, then those district representatives were more likely to be placed on the same PARC

²⁰ Each unit of overlap is a discrete, measurable, and meaningful quantity, so one can consider this variable to be cardinal as well.

committees. On the other hand, if a district did not have geographically clustered votes, then its representatives were more likely to avoid overlap in their PARC committee assignments. They could instead differentiate themselves into specialists in various different non-pork policy issues. This result appears to support our hypothesis that the two vote division equilibria are alternatives to each other, just as we would expect for Nash equilibria.

The match between our individual-level and district-level data leads us to conclude that there are two types of districts and two kinds of legislators in the LDP. First, there are legislators who divide their districts geographically into individual subterritories and enthusiastically pursue geographically concentrated policy services such as agricultural, forestry, fishery, and construction policies. Because the geographical strategy of dividing the vote under SNTV/MMD allowed (caused?) such districts to select multiple representatives with the same concerns, it is reasonable to infer that such interests were heavily over-represented in the LDP under SNTV/MMD. On the other hand, other LDP legislators who did not divide their votes geographically instead attempted to divide their votes sectorally by issue, and to differentiate themselves from each other by aiming for assignment to different PARC committees. This mechanism should have given the LDP a wide range of interest and capacity in different policy issues. *Ceteris paribus*, the intention to differentiate should have led legislators to cover more policy areas even in niches such as education or environment policy. Nonetheless, the LDP couldn't possibly overrepresent one kind of interest and still do an adequate job of representing all of the other issues of concern to its voters. Thus even if the LDP got the range and breadth of its non-pork constituents about right, it can only have represented these issues rather thinly. We are quite familiar with the idea that the LDP overrepresented agriculture, forestry, and fisheries due to malapportionment favoring rural prefectures, even with the occasional corrections ordered by the Supreme Court. The analysis here indicates that SNTV/MMD added further to this distortion, simply by causing some LDP members to seek geographical pork-based appeals as a vote-dividing strategy, apparently some of them in relatively urban areas.

V. Conclusion

Under SNTV/MMD, LDP politicians face a coordination problem in dividing

the vote among LDP colleagues running for and holding office in the same district. This paper found two types of equilibrium solutions for this coordination problem and two types of LDP members who used those solutions. Some LDP HR members were strongly committed to providing geographically concentrated pork-barrel services that allowed them to divide their votes geographically within a single district. Other LDP HR members differentiated themselves from their same-district rivals by attempting to specialize in different non-pork policy issues. In the absence of help or guidance from the central organization of the party, LDP politicians have had to develop their own methods of vote division -- this has essentially been their own evolutionary struggle toward more efficient methods and methods that would appeal to constituents indifferent to the pork barrel.

These two patterns were typical of LDP members and also explain the policy preferences of the LDP. These vote-dividing rules actually functioned, relatively smoothly and easily through the decentralized and fragmented structure of the LDP, to convert the electoral strategies of rank and file LDP HR members into the party's collective platform. We are fully familiar with the LDP's strong and consistent commitment to pork barrel policies. By interesting LDP candidates from the same district in a geographically-concentrated-pork strategy as an electoral coordination device, SNTV/MMD actually served to exaggerate the level of demand for such services. But because some LDP candidates chose the alternative of policy specialization as their electoral coordination device, SNTV/MMD has also given the LDP the ability to maintain a certain breadth in policy capacity over different issues. Voter interest in issues of this kind was underrepresented, by precisely the same amount that interest in the pork-barrel alternative was exaggerated, and thus coverage was thinner than voter interest would have warranted. Nonetheless, this electoral strategy has ensured that a small number of policy specialists covered a wide variety of policy issues. Since these LDP HR members tend to respect each other's policy fields as a way of protecting their own policy turf (another coordination game solved), the LDP has been able to protect many small interests.

At this point it is possible to clarify the distinctions between Rosenbluth and colleagues, who began investigating the between-election policy activity of LDP members as it relates to the electoral system, and the position we have reached. First, Rosenbluth sees PARC committee work as a policy service to the district and as a vote-dividing rule but misses possible distinctions among different kinds of policy, particularly the distinction between pork-as-policy and non-pork policy methods of

vote division. We see multiple rules for vote-division emerging and serving as mechanisms for the delivery of different kinds of policy focus, either geographically based pork OR non-geographically based non-pork. Second, Rosenbluth sees pork as a district-wide service and sees *kôenkai* support activity as the only thing Diet members do that focuses on geographical subregions within the district. We instead see pork as a policy service that can in fact be geographically targeted on subregions within the district, and therefore as a vote-division strategy different from other district-wide public goods policies.

If we consider the flow of funds that underlies a pork-based approach, we can also see why an alternative vote-dividing strategy may have emerged. SNTV/MMD campaigns are wastefully expensive, so the money to pay for them has to be generated through extraordinary means, and the way this is done is to guarantee excessive returns to business that donate to the LDP. The resulting flow is as follows: wealth is transferred from consumers (who pay overly high prices) to business, from business to LDP candidate machines, to campaigns that spread money (redundantly and wastefully) to groups of crucial voters who want pork. In the end, all consumers pay those who receive LDP campaign moneys (in between, business probably rakes off plenty that it gets to keep, too.) The one advantage to LDP politicians of pork as a constituent service over other kinds of service is that the same wasteful public expenditure of tax moneys -- or new regulations that are protectionist and anti-competitive without using up public moneys -- may generate excessive profits for business, employ the potentially unemployed (particularly in public works construction jobs) who then vote for the LDP in gratitude, and produces campaign money that gets sprinkled in crucial places in the electorate and also generates votes. Public welfare may drop overall because of the inefficiency and rent-seeking involved, but LDP-supporting businesses rake in extra profit, the LDP gets campaign money, workers get public works or other jobs that would have disappeared in a more competitive environment, and crucial voters get direct money.

But some candidates should find this particular vote-division technique unsuitable for two reasons. First, it is inefficient and expensive and thus not affordable forever -- any economic crisis that energizes either competition among firms or cost-reducing impulses among consumers will interrupt the flow of money in this process. Second, it will not appeal to voters who are uninterested, full of, or fed up with pork. We believe that at least since 1980 (for which we have data), and probably from the early 1970s, some LDP candidates have been pressed by

circumstances -- voter preferences and campaign costs -- to find other strategies, and that this has led to the emergence of a supplementary vote division rule that does not have either of the weaknesses of the pork method. Thus where Rosenbluth sees a single equilibrium in all districts, we see two alternative equilibria, with some districts evolving to one, and some to the other.

More important is the effect of one versus two equilibria on party evolution. The implication of a single equilibrium is that there would be no cleavage within the party, only a search within each individual LDP member for a vote-division strategy, ending up with the pork approach. But dual equilibria imply that the LDP actually contains two potential parties that differ in support base, campaign methods, and policy platforms. One is the pork-based LDP that we are familiar with, and the other, even within the SNTV/MMD electoral system, is a potentially issue-based LDP that began to show up in the *zoku* [policy tribes] phenomenon. The dual equilibria view thus envisions the possibility of an issue-based split in the LDP that could earmark and provide good candidates for defection to the Revival, New Frontier, Liberal, and Democratic parties of the 1990s, and may have foreshadowed the split that developed after Prime Minister Obuchi's death in spring 2000.²¹

Japan switched from SNTV/MMD in 1994 to a mixed-member SNTV/SMD/PR system that was first used in the general election of 1996. What implication can be drawn from our analysis about the impact of this change? Though Japan's new electoral rules have a complicated incentive structure and cannot be regarded as the equivalent of pure SNTV/SMD in many respects (McKean and Scheiner), we will treat it as a pure SMD system for the sake of simplicity in this discussion. SMD in a parliamentary system tends in the long run to strengthen voters' incentive to cast a party vote. However, in the short run, we expect LDP members to continue their campaigning in search of personal votes under the new electoral system. All who began their careers under SNTV/MMD already have machines designed to seek personal votes, and the relative cost of personal vote-seeking is low because of the

²¹ Both of these implications would require considerable investigation at the level of individual LDP HR members to ascertain whether those who used non-pork vote division strategies under SNTV/MMD -- and/or perhaps the LDP loners -- were most likely to defect to the new parties, and are more likely to be in the "young progressive" camp of the LDP now, while the people using pork and geographical targetting were less likely to defect to other parties and more likely to fall in the "traditional" camp of today's LDP!)

institutional heritage of SNTV/MMD in Japan. They will also hang onto their personal machines until a new party system stabilizes. As long as there is any possibility that LDP HR members might want to change parties in the near future, they will want to maintain a support base that goes with them if they defect to another party, and they will work to defeat central party control over campaigns. In other words, basing election campaigns on party brand name, which is supposed to strengthen party unity and reduce overall campaign costs, is neither cheap nor safe for LDP politicians who have already invested in other methods and who want to preserve their option to change parties during tumultuous times. Thus many observers of Japanese politics bemoaned the fact that most LDP members continued their conventional campaign strategy and tried to get personal support in the 1996 election, which was the first under the new electoral rules.

Does this mean that LDP politicians' sunk costs in existing campaign methods will overwhelm any impact that the changed electoral system might have had? We do expect some change, even in the short run, since the **techniques** for attracting personal votes under SNTV/MMD and those under SMD should be quite different. While pork barrel policy services will be still effective for seeking personal votes under SMD where voters want pork, the strategy of providing specialized expertise on a few non-pork policy issues will be insufficient. Because the HR member from one of the new SMDs is the only representative from that district, s/he will be expected to attend to all issues of concern to major constituencies in the district. There will be no other LDP representative with whom to divide these tasks. Thus we expect to see reduced specialization and division of labor among LDP members. As noted above, these mechanisms allowed the LDP as a whole to maintain considerable expertise and capacity over a wide range of policy issues, and also managed to protect very small sectoral interests. With the loss of specialization and division of labor among individuals within the party, we may see a reduction in the range of the party's policy expertise and the abandonment of some policy competencies and specialties to other parties. Whereas the old system motivated candidates to appeal to narrow constituencies within large and heterogeneous districts, the new system and its smaller districts push candidates to appeal to broader constituencies across smaller but still heterogeneous districts. Thus we should eventually see a change toward providing more district-wide public goods, more goods to relatively large

groups, and fewer goods to small interests.²²

Although we feel comfortable about these predictions, it is difficult to trace this change by bringing our data analysis into the present at this point. This is because LDP gave up its central party control over PARC membership and transformed PARC into an open member organization, with no formal assignments to particular committees. There is in fact no longer any way even to confirm the identity of individual members of PARC committees except for the chairs and vice-chairs. However, this institutional change itself may be an evidence of a greater underlying change. Perhaps the reason that the LDP had to change the PARC system, which had functioned as a cradle or a school for future party executives, might be that the interests of rank and file LDP HR members have come to concentrate on similar policy fields. Thus the gains from continued division of labor, once stimulated by the decentralized solution to the coordination games posed by SNTV/MMD, are not available any longer. The absence of such gains may therefore reverse the recent trend toward specific policy expertise for individual HR members.

References

- Bailey Michael, and Brady, David W., "Heterogeneity and Representation: The Senate and Free Trade," *American Journal of Political Science* (42: 2, 1998), 524-544.
- Cain, Bruce, Ferejohn, John and Fiorina, Morris, *The Personal Vote* (Harvard University Press, 1987).
- Carey, John and Shugart, Matthew , "Incentives to Cultivate a Personal Vote: A Rank Ordering of Electoral Formulas," *Electoral Studies* (14:4, 1995), pages.
- Cox, Gary, and Theis, Michael, "The Cost of Intraparty Competition: The Single, Nontransferable Vote and Money Politics in Japan," *Comparative Political Studies* (31:3, 1998), pages.
- Cox, Gary and Rosenbluth Frances, "Anatomy of a Split: the Liberal Democrats," *Electoral Studies* (14:4, 1995), 355-376.
- Hayao, Kenji. (must find published version).

²² There was a brief flurry of talk recently about another change in the electoral system, in which the SMDs now won by LDP candidates would remain single member districts, but the SMDs in which LDP candidates lose would become two-member districts so that those LDP candidates will also win seats, giving them a stronger physical attachment to a particular place than they would have if losing an SMD seat under the current system wins them a PR seat

- Hojnacki, Marie, Interest Group's Decisions to Join Alliance or Work Alone, *American Journal of Political Science* (41: 1, 1997), 61-87.
- Hori, Kaname, *Nihon seiji no jissho bunseki : seiji kaikaku, gyosei kaikaku no shiten [Empirical Analysis of Japanese Politics: from the perspective of administrative reform]* (Tôkai Daigaku Shuppankai, 1996).
- Inoguchi, Takashi, and Iwai, Motonobu, *Zoku Giin no Kenkyû [A Study of Policy-Group Parliamentarians]* (Nihon Keizai Shinbun, 1987).
- Katô, Junko, "When the party breaks up: exit and voice among Japanese legislators," *American Political Science Review* (92:4, December 1998), 857-.
- Katz, Richard S., "Intraparty Preference Voting," in Grofman, Bernie, and Lijphart, Arend, editors, *Electoral Laws and their Political Consequences* (Agathon Press, 1985).
- Kawato, Sadafumi, [Seniority Rule and Factions in LDP] *Leviathan* (number: date), pages.
- Kitschelt, Herbert, "Linkages between Citizens and Politicians in Democratic Polities," *Comparative Political Studies* (33: 2000), 845-879.
- Kreible, Keith, and Rivers, Douglas, "The Analysis of Committee Power," *American Journal of Political Science* (32:xx, 1988), 1151-74.
- Long, J. Scott, *Regression Models for Categorical and Limited Dependent Variables* (SAGE publications, 1997).
- McCubbins, Matthew, and Rosenbluth, Frances, "Party Provision for Personal Politics: Dividing the Vote in Japan," in Cowhey, Peter, and McCubbins, Matthew, editors, *Structure and Policy in Japan and the United States* (Cambridge University Press, 1996).
- McKean, Margaret, and Scheiner, Ethan, "Japan's New Electoral System: La plus ça change..." *Electoral Studies* (19:4, December 2000).
- Miyake, Ichirô, *Tôhyô kôdô [Voting Behavior]* (Tokyo daigaku shuppan, 1989)
- Mizusaki, Setsubun, "Tokuhô no chiiki hensa yori mita senkyoku tokusei [District Characteristics seen through regional changes in vote concentration]," *Gihu daigaku kyôyôbu kenkyû hôkoku* (18, 1982).
- Nagahisa, Toshio, *Geemu riron no seijikeizaigaku [The political economy of game theory]* (PHP, 1995)
- Okuda, Takako, "Mechanism and Dynamism of Japanese Clientelism: An Examination of the Politics of Public Works," presented at the Conference on Citizen-Elite Linkages, 30

(through dual candidacy) instead (see McKean and Scheiner on the new SMD/PR system).

March - 1 April 2001, Duke University

Reed, Steven R., and Scheiner, Ethan, "Electoral Incentives and Policy Preferences: Mixed Motives Behind Party Defections in Japan," *British Journal of Political Science* (forthcoming 2002).

Satô, Seizaburô, and Matsuzaki Tetsuhisa, *Jimintô Seiken [Liberal Democratic Party governance]* (Chûô kôron, 1986)

Stein, Arthur, "Coordination and collaboration: regimes in an anarchic world," in Stephen Krasner, editor, *International Regimes* (Cornell University Press, 1983).

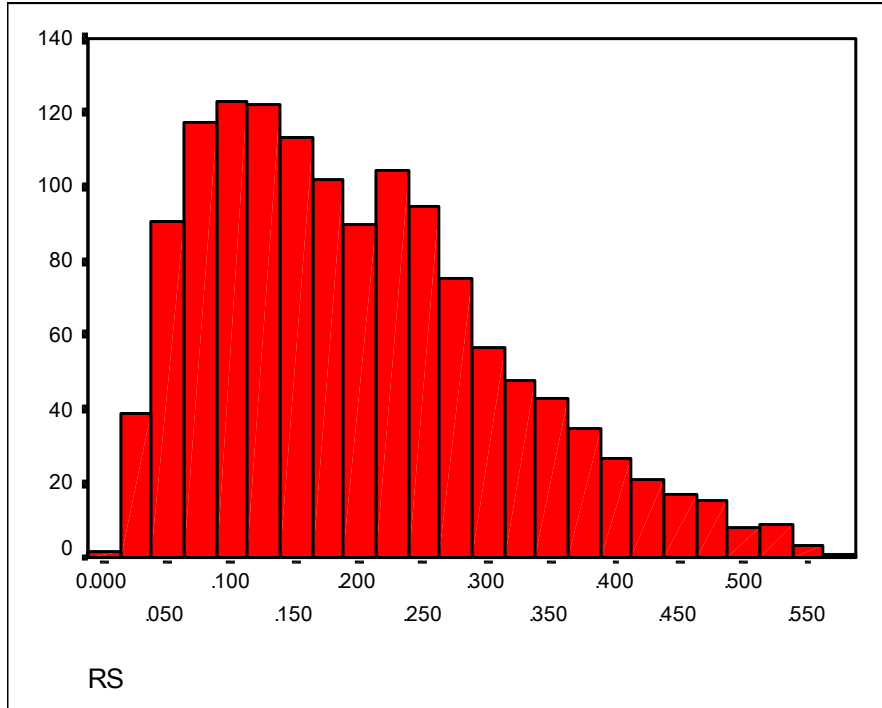
Tanaka, Zenichirô, "Giin naikakusei ni okeru seikentô to kanryô sei [The governing party and bureaucracy under the parliamentary system]," *Soshiki to seisaku [Organization and public policy]* (5), Gyôsei kanri kenkyû sentaa, 1991.

Taylor, Michael, *The Possibility of Cooperation* (Cambridge University Press, 1987)

Van de Ven, Wynand P.M.M., and Van Praag, Bernard M.S., "The Demand for Deductibles in Private Health Insurance: A Probit Model with Sample Selection," *Journal of Econometrics*, (17:no, 1981), 229-252.

Verdier, Daniel, "The Politics of Public Aid to Private Industry: The Role of Policy Network," *Comparative Political Studies* (28:1, 1995), pages.

Figure 4: Distribution of the MIZUSAKI regional strength index for LDP HR Members, 1980-1993 (N = 1357)



Mean=0.19826

Standard deviation=0.11490

N=1357