ELECTORAL INSTITUTIONS, HOMETOWNS, AND FAVORED MINORITIES
Evidence from Japanese Electoral Reforms

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I. Introduction

WHY do legislators choose to represent particular constituencies and why do they support particular policies? The conventional wisdom in the literature is that these decisions are influenced by the incentives associated with particular electoral institutions.[1] However, despite the extensive literature linking electoral institutions and legislators' behaviors, there are relatively few empirical studies that clearly identify the influence of electoral institutions on the constituencies legislators choose to represent and the policies they choose to support. Some studies of recent electoral reforms find little difference between candidates' electioneering behaviors before and after changes in various

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[1] See, for example, Barry Ames, "Electoral Strategy under Open-List Proportional Representation," *American Journal of Political Science* 88 (March 1995); Bruce Cain, John Ferejohn, and Morris Fiorina, *The Personal Vote: Constituency Service and Electoral Independence* (Cambridge: Harvard University Press, 1987); John M. Carey and Matthew S. Shugart, "Incentives to Cultivate a Personal Vote: A Rank Ordering of Electoral Formulas," *Electoral Studies* 14 (December 1995); Gary W. Cox, "Electoral Equilibria under Alternative Voting Institutions," *American Journal of Political Science* 31 (February 1987); idem, "Centripetal and Centrifugal Incentives in Electoral Systems," *American Journal of Political Science* 34 (November 1990); Alessandro Lizzeri and Nicola Persico, "The Provision of Public Goods under Alternative Electoral Incentives," *American Economic Review* 91 (March 2001); Roger B. Myerson,"Incentives to Cultivate Favored Minorities under Alternative Electoral Systems," *American Political Science Review* 87 (December 1993); and Robert Pekkanen, Benjamin Nyblade, and Ellis S. Krauss, "Electoral Incentives in Mixed-Member Systems: Party Posts and Zombie Politicians in Japan," *American Political Science Review* 100 (May 2006).

electoral systems, raising questions about the impact of electoral institutions on candidate behavior.[2]

In this article I provide evidence that electoral institutions do affect the relationship between legislators and specific constituencies within electoral districts. The evidence is consistent with the logic developed in a formal theoretical model by Roger B. Myerson.[3] This model shows that the multimember single nontransferable vote (SNTV) system provides incentives for legislative candidates to appeal to narrow subconstituencies by reducing the vote-share threshold that candidates need to secure a legislative seat. According to Myerson's model, if a candidate appeals to broad cross-sections of a multimember district's electorate, she will leave herself vulnerable to challengers who can concentrate their efforts on the minimal subset of the constituency necessary to win a seat. Thus, candidates in single-member districts (SMD) are expected to represent a broader cross-section of their district constituents than are candidates in multimember districts, which is what the findings in this article demonstrate.

In addition to providing evidence consistent with the logic of the Myerson model, this article also illustrates the impact electoral institutions can have on geographic patterns of representation. Although the geographic concentration of legislators' electoral support has been observed in various multimember district systems in Europe, Latin America, and Asia,[4] there has been little systematic evidence directly linking the vote concentration to the electoral institutions. The evidence in this article shows that the high geographic concentration of legislators' electoral support was closely tied to Japan's multimember district system.

To identify the effect of the multimember SNTV and SMD electoral institutions on representation, I exploit two political reforms that occurred in Japan. In 1994 the electoral system for the Japanese Lower House of the Diet changed from a multimember SNTV system to a

[2] See, for example, Brian F. Crisp and Rachel E. Ingall, "Institutional Engineering and the Nature of Representation: Mapping the Effects of Electoral Reform in Colombia," *American Journal of Political Science* 46 (October 2002); Hideo Otake, *How Electoral Reform Boomeranged* (Tokyo: Japan Center for International Exchange, 1998); and Margaret McKean and Ethan Scheiner, "Japan's New Electoral System: La Plus Ça Change . . . ," *Electoral Studies* 19 (December 2000).

[3] Myerson (fn. 1). Gary W. Cox's models develop a similar logic for relationships between electoral institutions and dispersion of candidates' policy positions along a unidimensional policy space. See Cox (fn. 1, 1990).

[4] See, for example, Barry Ames, *Deadlock of Democracy* (Ann Arbor: University of Michigan Press, 2001); Crisp and Ingall (fn. 2); Brian F. Crisp and Scott Desposato, "Constituency Building in Multimember Districts: Collusion or Conflict?" *Journal of Politics* 66 (February 2004); Gerald Curtis, *Election Campaigning Japanese Style* (New York: Columbia University Press, 1971); Paul M. Sacks, *The Donegal Mafia: An Irish Political Machine* (New Haven: Yale University Press, 1976).

mixed-member majoritarian system (MMM) with an SMD component and a proportional representation component. In 1925 the electoral system changed from a predominantly SMD system to a multimember SNTV system.[5]

Japan is a good case for testing whether these electoral institutions affect the types of constituencies candidates represent. Japanese Lower House representatives are known to have appealed to geographically defined subconstituencies under the multimember SNTV system. Since these subconstituencies are observable, I can measure whether Japanese Lower House representatives continued to appeal to the same geographically defined subconstituency after the change in electoral institutions or whether they represented the more geographically diffused constituency that the models predict.

To estimate the relationship between electoral institutions, representation, and geography, I utilize new data sets that I have assembled. In particular I use a new data set that identifies both the location of each Japanese Lower House candidate's home area and the distance from these areas to every other area in the candidate's district. I also use a new data set of pre–World War II election returns aggregated at the subdistrict level.

The results of this analysis for the 1994 electoral reform are consistent with the claim that multimember SNTV systems provide incentives for Liberal Democratic Party (LDP) legislators to target narrow subconstituencies. More specifically, the results show that both the LDP legislators' vote shares and public expenditures were geographically concentrated around the LDP legislators' home areas under the multimember SNTV system. As the models predict, under the new MMM electoral system, both LDP legislators' vote concentration and public expenditures became more geographically diffused relative to the prereform period. The relationship between institutions and vote concentration is also found to exist following the 1925 electoral reform.

This article is divided into eight sections. Section II briefly reviews the logic underlying the threshold-effect argument. Section III provides a review of the literature on Japanese legislators' electioneering behaviors under both the pre- and post-1994 Lower House electoral systems. Section IV presents electoral maps to illustrate how the concentration

[5] Although the Japanese Diet has both Upper and Lower Houses, in this article I focus on the Lower House elections. The Lower House is also referred to as the House of Representatives. Elections for the Lower House are held every four years, unless there is a vote of no confidence in the Diet. The Lower House is considered more powerful than the Upper House. For example, the Lower House can pass legislation without Upper House approval.

of legislators' electoral support changed after the 1994 electoral reform. Section V presents the data, methods, and results that support the prediction that electoral support would become more diffused after the 1994 electoral reform. Section VI presents further evidence concerning the influence of institutional change using the pre–World War II electoral reforms. Section VII presents the data, methods, and results that support the prediction that the distribution of central-to-municipality transfers would also become more diffused after the 1994 electoral reform. Section VIII concludes.

II. The Threshold Effect and Favored Minorities

In this section I elaborate on how the electoral incentives facing legislators in multimember district systems differ from the electoral incentives in single-member district (SMD) systems. In multimember district systems, more than one seat is elected from each electoral district. Although votes in multimember district systems are often cast for party lists, in some cases votes are cast for individual candidates.

The recent theoretical literature argues that multimember district electoral systems in which voters cast a single nontransferable vote (SNTV) for an individual candidate provide strong incentives for candidates to appeal to narrow subconstituencies. Myerson provides a model that shows that in multimember SNTV systems in which candidates can promise goods to voters, candidates will have an incentive to promise more goods to narrower subconstituencies as the threshold for winning a seat decreases.[6] Models with a similar logic developed by Gary W. Cox show that in multimember SNTV systems with unidimensional spatial competition, candidates have an incentive to choose positions dispersed along the policy space away from the median voter.[7] This dispersion increases as the vote-share threshold for winning a seat decreases.

The logic for how vote-share thresholds for securing a seat influence incumbent behavior is best illustrated by the simplified model presented by Myerson.[8] First, the following assumptions are made. There are N seats in the district and voters prefer candidates who can provide them with the largest allocation of goods. Candidates can promise either to provide voters with a share of the budget or to purchase some public good on voters' behalf. The budget is large enough to allocate

[6] Myerson (fn. 1).

[7] Cox (fn. 1, 1987, 1990).

[8] Roger B. Myerson, "Theoretical Comparisons of Electoral Systems," *European Economic Review* 43 (April 1999). This discussion closely follows the discussion on page 679 of the Myerson article.

$1 to each voter, but the public good gives each voter a benefit, B > $1. $Q^* = \frac{1}{N+1}$ is the maximum vote share a candidate can receive and still not be guaranteed to win.[9]

Under these assumptions, Myerson states that there is a symmetric equilibrium in which all candidates promote the public good when $B > \frac{1}{Q^*}$. In terms of what a candidate can offer to the minimum set of voters necessary to guarantee winning a seat, none can offer an allocation of the budget that is larger than the benefits these voters would receive from the public good offered by competing candidates. However, when $B < \frac{1}{Q^*}$ and the other candidates promote the public good, candidates have an incentive to offer $\$(B + \varepsilon)$ of the budget to $\frac{1}{B+\varepsilon}$ of the voters, where ε is such that $B + \varepsilon < \frac{1}{Q^*}$. Since the candidate is offering enough voters to secure a seat (that is, $\frac{1}{B+\varepsilon} > Q^*$) a budget allocation that is ε larger than what they would receive from the public good, the candidate will not be defeated by any challenger promoting the public good. Myerson's example shows that as the district magnitude increases, thereby decreasing Q^*, the candidates will appeal to a smaller subset of the electorate by promising them more benefits.

The two predictions from these models most relevant for this article are that (1) candidates in multimember SNTV systems will target resources to appeal to narrow subconstituencies and that (2) the electoral support of candidates in multimember SNTV systems will be concentrated in narrow subconstituencies. The effect of the magnitude of the vote-share threshold required to secure a seat on the distribution of resources and electoral support will be referred to as the threshold effect.

Myerson does not specify how the constituencies that are targeted by particular candidates are defined. Although candidates in multimember district systems could potentially divide district constituencies along a number of different dimensions, the geographic concentration of candidate electoral support is a pattern commonly observed in multimember district systems. In the next section I discuss descriptive accounts of how Japanese politicians competing in multimember SNTV districts have traditionally cultivated constituencies surrounding their hometowns.

[9] Myerson calculates $Q^* = \frac{1}{K}$ where K is the number of candidates. Since the number of candidates is usually not known for certain in advance, the above example presents the case where there is minimal competition. If candidates knew for certain that there would be more candidates then the threshold, Q^*, would be even smaller.

III. Institutions, Hometowns, and Electioneering in Japan

The goal of this section is to describe Japan's multimember SNTV and post-1994 MMM electoral systems and to review the literature on Japanese electioneering behavior under the two systems. The descriptive accounts of Japanese electioneering behavior under the multimember SNTV system document Lower House representatives' efforts to cultivate geographically defined electoral support bases. Some descriptive accounts of electioneering in the SMDs of the new MMM system suggest that Japanese Lower House representatives have attempted to attract a much broader constituency than they did under the previous system.[10] These descriptions suggest that legislators are behaving in a manner consistent with the logic in the models described above.

Electioneering under the Multimember SNTV System

Japan's multimember SNTV system was originally adopted in 1900 by the Meiji oligarchs who believed the intraparty electoral competition would prevent any one power from winning enough seats to control the government.[11] Aside from two brief periods of hiatus, one from 1919 to 1925 and another in 1946, Japan had employed the multimember SNTV system for Lower House elections until 1994.[12] The two defining characteristics of the multimember SNTV electoral system are that multiple legislators are elected from each electoral district and that each voter has a single vote that can be cast for one specific candidate on the ballot in her district. For example, in 1990 the Japanese Lower House elections were divided into 130 multimember districts, and between two to six legislators were elected from each district, with 511 Lower House members elected in total.[13]

As the Meiji oligarchs predicted, the multimember SNTV system presented coordination problems for all parties with ambitions to control the government.[14] In order to win a majority, the parties would

[10] Ray Christensen, "The Effects of Electoral Reforms on Campaign Practices in Japan: Putting New Wine into Old Bottles," *Asian Survey* 38 (October 1998); and Ellis S. Krauss and Robert Pekkanen, "Explaining Party Adaptation to Electoral Reform: The Discreet Charm of the LDP?" *Journal of Japanese Studies* 30 (Winter 2004).

[11] J. Mark Ramseyer and Frances M. Rosenbluth, *Japan's Political Marketplace* (Cambridge: Harvard University Press, 1993); idem, *The Politics of Oligarchy* (New York: Cambridge University Press, 1995); Matthew D. McCubbins and Frances M. Rosenbluth, "Party Provision for Personal Politics: Dividing the Vote in Japan," in Peter F. Cowhey and Matthew D. McCubbins, eds., *Structure and Policy in Japan and the United States* (New York: Cambridge University Press, 1995).

[12] Section VI examines the effect of the 1925 institutional change.

[13] One district, the Anami Island, is a single-member district.

[14] Ramseyer and Rosenbluth (fn. 11, 1995).

on average have to win approximately two seats per district. LDP candidates would cultivate personal reputations to separate themselves from copartisans competing in the same district. As a result, Japanese electioneering has become an infamous example of candidate-centered politics.[15] A large body of literature documents the range of electioneering activities LDP legislators used to cultivate their personal reputations under the multimember SNTV system.[16] Two characteristics of Japanese electioneering under this electoral system that are particularly relevant for this article are that (1) LDP candidates used large amounts of resources to differentiate themselves from other LDP candidates and that (2) LDP legislators' resource allocations and electoral supports were geographically concentrated.

LDP candidates are particularly notorious for investing large amounts of effort in two types of electioneering activities: constituency services and subsidy (pork) allocations. The constituency services, which are organized through the candidates' personal support networks (*koenkai*), provide a wide range of events for the constituents such as local fundraisers, study groups, cultural events (such as sumo matches), tours of the Diet, celebrations, and, in some cases, trips to hot springs. LDP candidates are also expected to perform personal favors for their constituents, such as providing monetary gifts at weddings and funerals, helping with job or school placement, and mediating disputes between constituents. *Koenkai* usually have large permanent staffs that help provide these services to the Diet members' constituency.

Subsidies from the central government are another important resource LDP legislators provide to their constituents. LDP Diet members are viewed as pipelines that carry resources from the national government to local politicians.[17] Haruhiro Fukui and Shigeko N. Fukai write: "There is solid consensus among students of Japanese politics about the

[15] Steven Reed and Michael Thies write, "Japan has often been cited as holding down the extreme end of candidate-based personalistic politics." See Reed and Thies, "The Consequences of Electoral Reform in Japan," in Matthew S. Shugart and Martin P. Wattenberg, eds., *Mixed Member Electoral Systems: The Best of Both Worlds?* (New York: Oxford University Press, 2001), 390.

[16] Jean-Marie Bouissou, "Organizing One's Support Base under the SNTV: The Case of Japanese Koenkai," in Bernard Grofman, Sung-Chull Lee, Edwin A. Winckler, and Brian Woodall, eds., *Elections in Japan, Korea, and Taiwan under the Single-Nontransferable Vote: The Comparative Study of an Embedded Institution* (Ann Arbor: University of Michigan Press, 1999); Curtis (fn. 4); Gerald Curtis, *The Japanese Way of Politics* (New York: Columbia University Press, 1988); Tomoaki Iwai, *Seiji Shikin no Kenkyu* (Tokyo: Nihon Keizai Shimbunsha, 1990); Nathaniel B. Thayer, *How the Conservatives Rule Japan* (Princeton: Princeton University Press, 1976).

[17] Gerald Curtis, "Japan," in David Butler and Austin Ranney, eds., *Electioneering : A Comparative Study of Continuity and Change* (New York: Oxford University Press, 1992); Harushiro Fukui and Shigeko N. Fukai, "Pork Barrel Politics, Networks, and Local Economic Development in Contemporary Japan," *Asian Survey* 36 (March 1996); Ethan Scheiner, "Pipelines of Pork: A Model of Local Opposition Party Failure," *Comparative Political Studies* 38 (September 2005).

centrality of pork barrel politics in both parliamentary (Diet) and local elections in Japan."[18] Although there is some debate about whether legislators use pork for direct electoral benefits, the popular perception among the Japanese public and media is that LDP politicians are responsible for providing their districts with national government resources, in return for which they receive electoral and financial rewards.[19] There is some evidence that central-to-municipality government transfers are influenced by political factors.[20]

Tanaka Kakuei is often cited as the extreme example of a candidate catering to his electorate by providing constituency services and pork-barrel projects. One of Tanaka's final activities while in office was to take eleven thousand people to Nukumi hot springs in Yamagata prefecture at a cost of $1.4 million.[21] He is also known for bringing Japan's high-speed rail line to his home prefecture, a project that took eleven years to build at a cost of millions of dollars per kilometer. Four of the eight bullet train stops are in Tanaka's home prefecture, and two of the stops are fewer than fourteen miles apart.[22]

The second characteristic of Japanese electioneering relevant for this article is the division of district constituencies into subconstituencies in order to solve the coordination problem for both legislators and voters. In the absence of some way to divide constituencies, LDP members could potentially find themselves using resources to compete for the same subconstituency when they could receive higher electoral returns for their resources by targeting separate subconstituencies. Voters with partisan preferences need a secondary cue to allocate their vote to a specific candidate from their preferred party.

Japanese legislators and voters have traditionally used their hometowns, known as *jimoto*, as a way to divide the electorate into geographically defined subconstituencies, known as *jiban*. Gerald Curtis writes that an "LDP Diet member often has support in his district concentrated

[18] Fukui and Fukai (fn. 17), 268.

[19] Pork-barrel projects have benefits beyond the areas where the projects are built. These projects bring campaign contributions to the LDP organization, factions, and candidates that could be used to support the *koenkai* activities of candidates in any location. See Brian Woodall, *Japan under Construction: Corruption, Politics, and Public Works* (Berkeley: University of California Press, 1996).

[20] Takero Doi, *The Political Economy of Japanese Local Finance* (Tokyo: Toyo Keizai Shimposha, 2001); Michisada Hirose, *Hojokin to Seikento* [Subsidies and the Ruling Party] (Tokyo: Asahi Shinbunsha, 1981); and Yusaku Horiuchi and Jun Saito, "Reapportionment and Redistribution: Consequences of Electoral Reform in Japan," *American Journal of Political Science* 47 (October 2003).

[21] Bradley Richardson, *Japanese Democracy: Power, Coordination, and Performance* (New Haven: Yale University Press, 1997), 28.

[22] Jacob M. Schlesinger, *Shadow Shoguns: The Rise and Fall of Japan's Postwar Political Machine* (New York: Simon and Schuster, 1997), 104.

in a limited geographical area of which his home town is the center. . . . Even within counties there is a tendency for the vote to decrease the further the town from the candidate's native town or village."[23] Candidates would cultivate electoral support in their *jiban* by concentrating their resources in the areas around the candidates' hometowns. Nathaniel B. Thayer observes that the "traditional method by which a conservative politician puts together enough votes to win a Diet seat is to work intensively on his birthplace and a few other specially selected areas."[24] Candidates' *koenkai* were often located around the candidates' hometowns and the *koenkai* activities were directed toward candidates' *jiban*.[25]

It is often argued that the importance of *jiban* in Japan reflects Japan's "parochial political culture." Unlike in the U.S., with its "friends and neighbors" effect, whereby local interests are secondary to partisan divisions, in Japan partisan divisions are often believed to be secondary to local interests.[26] As Scott C. Flanagan writes, "In Japan *jimoto* [hometown] consciousness is a general election phenomenon which transcends rather than substitutes for party labels."[27] When surveyed, up to 40 percent of the Japanese electorate said local interest representation was the basis for their vote and just as many, if not more, voters turned out for local versus national elections outside the major metropolitan areas.[28] Local politicians and social elites, who, it is often argued, influence voting behavior, tend to have strong connections with

[23] Curtis (fn. 4), 87.

[24] Thayer (fn. 16), 98.

[25] In describing *koenkai* locations, a reporter from the *Mainichi Shimbun* stated, "Most of them center on the Dietman's birthplace and few other pockets in the district." See Thayer (fn. 16), 103.

[26] In describing Alabama politics in the 1930s and 40s, V. O. Key writes:

> Almost any local leader with any prospects at all who aspires for state office can cut into the strength of established state leaders or factions within his own immediate bailiwick. He gains support, not primarily for what he stands for or because of his capacities, but because of where he lives. A more or less totally irrelevant appeal—back the hometown boy—can exert no little influence over an electorate not habituated to the types of voting behavior characteristic of a two-party situation.

See Key, *Southern Politics in State and Nation* (1977; Knoxville: University of Tennessee Press, 1984), 41. However, in Key's "friends and neighbors" analysis, hometowns matter to voters to the extent that there are no strong partisan or factional divisions.

[27] Flanagan, "Voting Behavior in Japan: The Persistence of Traditional Patterns," *Comparative Political Studies* 1, no. 3 (1968), 402. Flanagan and Bradley M. Richardson write: "What we find among many Japanese voters is a parochial and particularistic political outlook—a local rather than a national consciousness, an emphasis on special benefits for one's local area (*jimoto rieki*) and a preference for identifying with proximate candidates and personalities rather than more distant and intangible political objects such as national party labels, ideological issues and national leaders." See Flanagan and Richardson, *Japanese Electoral Behavior: Social Cleavages, Social Networks, and Partisanship* (London: Sage Publications, 1977), 52.

[28] Richardson (fn. 21) 32.

hometown candidates because these candidates are believed to have greater appreciation and sympathy for local political concerns.[29]

McCubbins and Rosenbluth present an alternative hypothesis for how the coordination problem is solved. They argue that candidates claim credit for particular policies by signaling policy expertise through their committee assignments.[30] Their evidence is that the committee assignments differ significantly from what would be expected were assignments made at random. Inoguchi and Iwai present evidence that candidates with policy expertise, *zokugiin*, have been on the rise since the 1970s.[31] However, they also suggest LDP legislators' attention to activities in the Diet may be a product of local electoral security rather than a way to cultivate local constituents.[32] While the importance of policy differentiation as an additional means to solve the coordination problem is intriguing and deserves further research, this article focuses on the geographic differentiation of candidates, which is a well-documented feature of electioneering under the multimember SNTV electoral system.

Electoral Reform in the 1990s

By the early 1990s there was a widespread belief among academics, journalists, politicians, and the general public that the pathologies of candidate-centered electoral competition, such as corruption, money politics, and special-interest influence, were related to Japan's multimember SNTV electoral system. In 1993 several groups of Diet members defected from the LDP in protest against the party's inability to pass political reform legislation. The leader of the largest group of LDP defectors, Ozawa Ichiro, wrote that the "multi-seat electoral district system . . . is also at

[29] Scott C. Flanagan, "Mechanisms of Social Network Influence in Japanese Voting Behavior," in Scott C. Flanagan, Shinsaku Kohei, Ichiro Miyake, and Bradley M. Richardson, eds., *The Japanese Voter* (New Haven: Yale University Press, 1991); Bradley M. Richardson, "Japanese Local Politics: Support Mobilization and Leadership Styles," *Asian Survey* 7, no. 12 (1967); Richardson (fn. 21); Kurt Steiner, *Local Government in Japan* (Stanford, Calif.: Stanford University Press, 1965); and Gary W. Cox, Frances Rosenbluth, and Michael M. Thies, "Mobilization, Social Networks, and Turnout: Evidence from Japan," *World Politics* 50 (April 1998).

[30] McCubbins and Rosenbluth (fn. 11).

[31] Takashi Inoguchi and Tomoaki Iwai, *Zoku giin no kenkyu: Jiminto o gyujiru shuyakutachi* [A Study of Zoku Diet Members] (Tokyo: Nihon Keizai Shimbunsha, 1987).

[32] According to Curtis, LDP incumbents who lose an election are more likely to win the next election because they can spend more time campaigning in the district and do not have to be engaged in activities in Tokyo. See Curtis (fn. 4). Tatebayashi and McKean present a theory and evidence for why LDP candidates may differentiate themselves along policy dimensions instead of geographic lines. See Masahiko Tatebayashi and Margaret McKean, "Voting Division and Policy Differentiation Strategies of LDP members under SNTV/MMD in Japan" (Manuscript, Department of Political Science, Duke University, 2001); and Masahiko Tatebayashi, *The Logic of Legislators' Activities: Institutional Analysis of LDP Dominance in Japan* (Tokyo: Yuhikaku, 2004).

the root of our 'money-politics' problem . . . reform that does not transform the electoral system itself will not have the backbone needed to change the nature of politics."[33] The reformers stated that they hoped to reform the electoral system so that competition would be based on party platforms and specific policy issues.

The LDP defectors, in coalition with former opposition parties, formulated legislation to change the electoral system. In 1994 Japan's Lower House multimember SNTV system was changed to an MMM system. Under the new system only one Diet member is elected from each SMD. In the proportional representation (PR) component Diet members are elected off the party lists in proportion to the number of PR votes the parties receive. Voters were given two nontransferable votes, one to cast for an SMD candidate and one to cast for a party in the PR system. The 130 Lower House multimember districts were divided into 300 SMDs, with 43 of the SMDs containing areas from at least two former multimember districts. An additional two hundred Lower House seats were to be elected from PR lists in eleven geographic blocs.[34] SMD candidates could also have a place on the PR lists.

Carey and Shugart provide some justifications for the Japanese reformers' contention that changing the electoral system would reduce candidate-centered politics.[35] Carey and Shugart rank order the electoral systems based on the incentives to cultivate personal reputations. According to their rank ordering, the multimember SNTV system offers the strongest incentives for candidates to cultivate personalistic ties. Carey and Shugart write, "Of all the systems in which parties control nominations, this is clearly the most personalistic."[36] According to their rankings, the incentives to cultivate personal reputations are weaker in MMM systems than in multimember SNTV systems. Thus, it was not unreasonable that the Japanese public would believe that the new system could reduce candidate-centered electoral politics.

The descriptive accounts of candidate electioneering suggest that the electoral reforms have had little immediate impact on the importance of candidate-centered electoral politics.[37] Candidates in SMDs are still making personalistic rather than policy-oriented appeals to voters and

[33] Ichiro Ozawa, *Blueprint for a New Japan: The Rethinking of a Nation* (Tokyo: Kodansha International, 1994), 68.

[34] This was later reduced to 180 in the 2000 Lower House election.

[35] Carey and Shugart (fn. 1); Matthew S. Shugart, "'Extreme' Electoral Systems and the Appeal of the Mixed-Member Alternative," in Matthew S. Shugart and Martin P. Wattenberg, eds., *Mixed Member Electoral Systems: The Best of Both Worlds?* (New York: Oxford University Press, 2001).

[36] Carey and Shugart (fn. 1), 429.

[37] Otake (fn. 2); McKean and Scheiner (fn. 2); Christensen (fn. 10); and Krauss and Pekkanen (fn. 10).

local organizations. Conservative candidates, in particular, are still relying on their *koenkai* to build personal support in their districts. However, the descriptive accounts do suggest that candidates are trying to cultivate ties with organizations to which they had not been connected in the past.[38] In addition, LDP incumbents who were redistricted are known to have exchanged lists of their *koenkai* members with the LDP candidate running in their former *jiban*. This movement away from cultivating narrow subconstituencies to cultivating broader cross-sections of voters is consistent with the threshold-effect predictions.

IV. Visual Evidence of Threshold Effects

Electoral maps visually illustrate the changes in legislators' vote concentration after the electoral reforms. These changes are consistent with the threshold effect discussed in Section II. The electoral map of Akita 2nd district in the 1983 Lower House election illustrates the relationship between candidates' hometowns and *jiban* when the candidates' hometowns are geographically separated. This district consists of thirty-five rural towns/villages and four small cities. Three LDP candidates, two Japan Socialist Party (JSP) candidates, and one Japan Communist Party (JCP) candidate competed in this election. As Figure 1 illustrates, the three LDP candidates, Muraoka Kanezo, Sasayama Tatsuo, and Nemoto Ryutaro, divide the district into thirds, with the Muraoka *jiban* in the southwestern section, the Sasayama *jiban* in the southeastern section, and the Nemoto *jiban* in the northern section. Similarly, the two JSP candidates, Kawamata Kenjiro and Hosoya Akio, divide the district roughly in half with the Kawamata *jiban* in the southeastern section and the Hosoya *jiban* in the northeastern section. The circles indicate the location of the candidates' hometowns. Both the LDP and JSP candidates' hometowns more or less overlap with the approximate location or at least direction of the areas where the candidates have relatively high vote shares. The JSP candidates' *jiban* and the LDP candidates' *jiban* show a significant amount of overlap, as would be expected if the hometown effect acted mainly as a voting cue between candidates from the same party.[39]

[38] Christensen (fn. 10) describes how in the 1996 election, former Socialist members would cultivate constituencies, such as construction firms and veterans' organizations, that traditionally voted for conservative candidates.

[39] The *jiban* were relatively stable over time despite changes in electoral competition. This is evident in the electoral maps of candidates' vote shares for the 1986 Lower House election in the same Akita 2nd district after one of the LDP candidates retired and a new conservative candidate replaced him. The new conservative candidate, Minorikawa Hidefumi, has the same hometown and *jiban* as

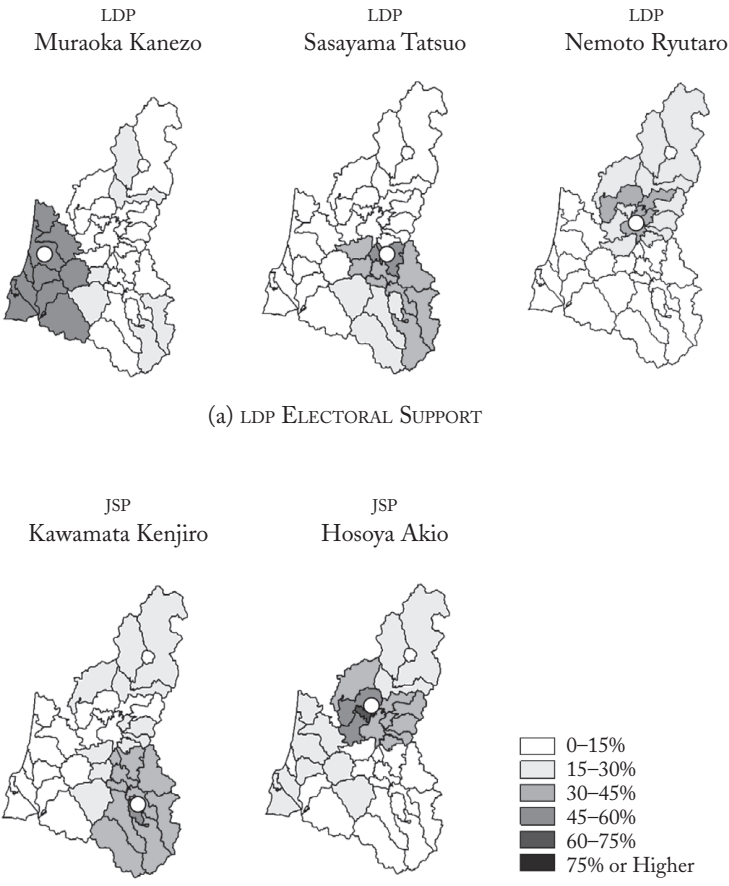

FIGURE 1
GEOGRAPHY OF ELECTORAL SUPPORT IN THE AKITA 2ND 1983 LH ELECTION[a]

[a]These figures illustrate the relationship between candidates' hometowns and electoral support when the hometowns are geographically separated. The circles represent the candidates' hometowns. The black lines indicate municipality boundaries. The shadings reflect the candidates' share of the municipality vote. The geographic divisions between LDP candidates are more clearly defined than the divisions between JSP and LDP candidates.

the retired LDP candidate Nemoto Ryutaro. Although Minorikawa ran as an independent, he received factional support from the LDP faction leader Abe Shintaro, so it was clear that he was essentially an LDP candidate. The three conservative candidates and two JSP candidates all have the same configuration of hometowns and *jiban* in the 1986 Lower House election as in the 1983 Lower House election. Electoral maps of the 1980 and 1990 Lower House elections reveal continued stability in candidates' *jiban* patterns.

The diffusion of candidates' vote shares can be seen in Figure 2, the electoral maps for the LDP incumbent, Muraoka Kanezo, in the first two elections under the new electoral system. Although Muraoka's vote concentration appears to remain slightly higher around his hometown in 1996, by the 2000 election his electoral support has spread relatively evenly throughout the district.

Miyagi 6th District is another example of a district in which the incumbents' electoral support became more diffused after the electoral reforms. In this district there are two effective candidates, a six-term LDP incumbent, Kikuchi Fukujiro, and a three-term New Frontier Party (NFP) incumbent, Oishi Masamitsu. Prior to becoming an NFP member, Oishi was affiliated with the LDP. As Figure 3 illustrates, in the 1996 Lower House election, although the candidates still appear to be dividing the district as they did in the 1993 LH election, the candidates' vote shares are no longer as concentrated around their hometowns as they were in the elections under the multimember SNTV system.

Indicators of the geographic concentration of candidates' vote shares, such as Mizusaki's RS index, also illustrate the sharp decrease in geographic concentration of LDP incumbents' vote shares between the old and new electoral systems (see Figure 4 for the results and definition of the Mizusaki RS index). As the threshold effect predicts, LDP incumbents in the SMDs of the MMM have higher vote shares in areas of the SMD where they had won relatively few votes under the multimember SNTV system.

V. Estimating the Threshold Effect on Vote Concentration

This section presents empirical evidence that the threshold effect influenced the concentration of legislators' electoral support. The results in this section provide further evidence that electoral support is concentrated around the LDP candidates' hometowns under the multimember SNTV system. The results also suggest that the same LDP legislators' vote shares are less concentrated in the elections after the electoral reforms. These results are consistent with predictions about the threshold effect. This section will be divided into three subsections. The first subsection presents the data and measurement issues. The second subsection examines how the electoral support of LDP candidates evolved across the four elections between 1990 and 2000. The third subsection compares patterns of electoral support for the LDP incumbents with patterns of electoral support for incumbents from other parties.

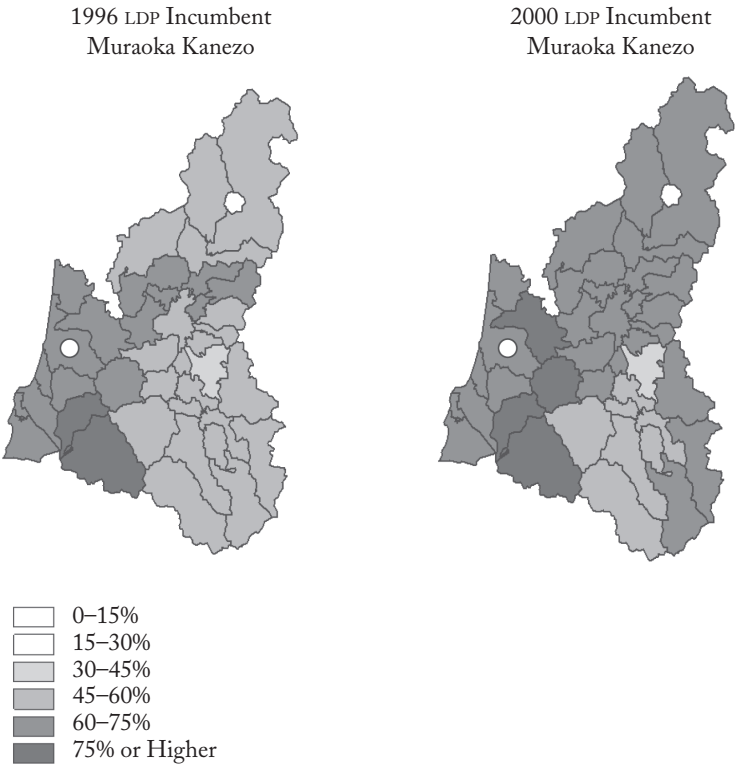

FIGURE 2
GEOGRAPHY OF THE LDP CANDIDATE'S ELECTORAL SUPPORT IN THE 1996 AND 2000 LH ELECTIONS

DATA AND MEASUREMENT

The analysis in this section uses data aggregated at the municipality level. In Japan the forty-seven prefectures are divided into approximately thirty-three hundred municipalities (that is, city, ward, town, and village). In 1995 the municipalities ranged in population from fewer than two hundred to more than one million people. Thus, the electoral districts vary in the number of municipalities they contain.[40]

Additional electoral data on the PR vote in the 1995 Upper House election is also used in the measure of the normal vote. The normal vote

[40] The municipal-level electoral data for the Lower House elections come from the *JED–M* data set. This data set contains candidate vote totals for elections under the multimember SNTV system and both candidate and PR vote totals for elections under the MMM system. See Tokifumi Mizusaki, *Sosenkyo Deta Besu: JED–M Deta Version 2.0* (Tokyo: Eru De Bi, n.d.).

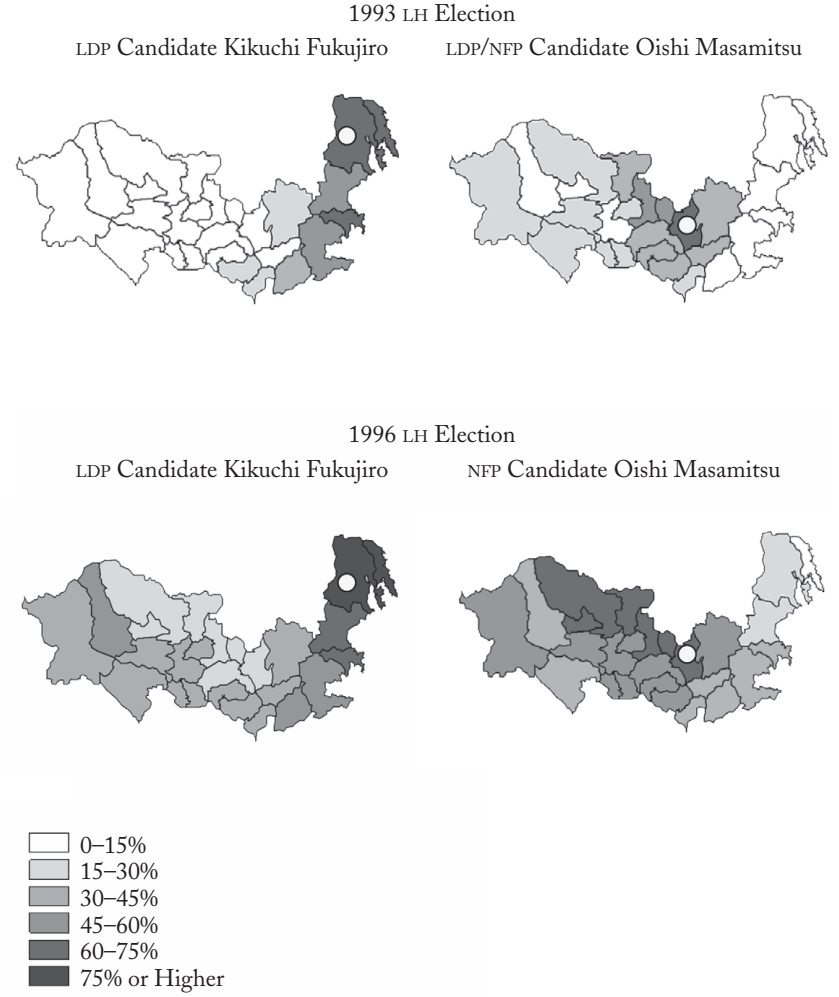

FIGURE 3
MIYAGI 6TH DISTRICT VOTE CONCENTRATION WITHIN SMD BOUNDARIES
(1993 AND 1996)[a]

[a]The circles represent the candidates' hometowns. The black lines indicate municipal boundaries. The shadings reflect the candidates' share of the municipality vote.

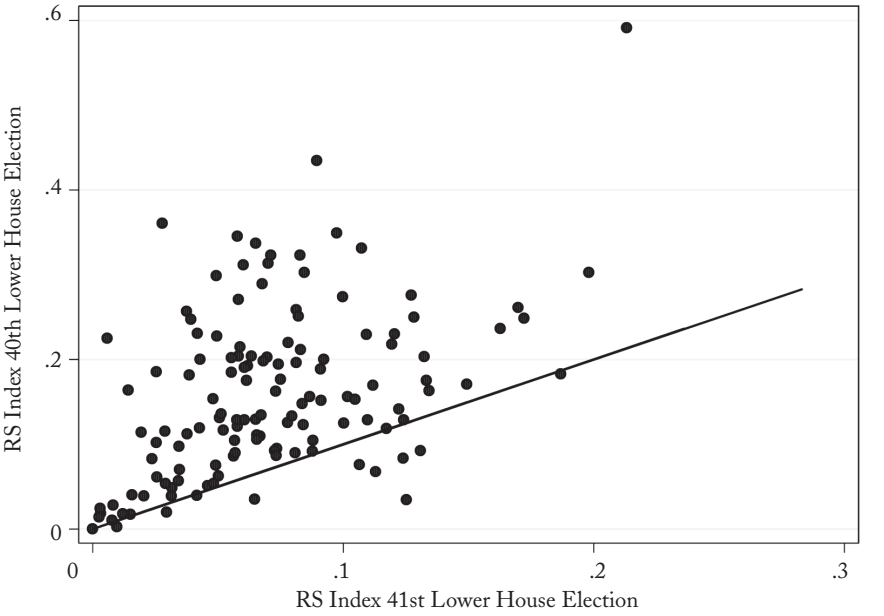

FIGURE 4
COMPARING LDP INCUMBENTS' RS SCORES FOR THE 40TH AND 41ST LOWER HOUSE ELECTIONS[a]

[a]The LDP incumbents' vote shares in the 40th (1993) Lower House election reflect their vote shares in the areas that would later become their single-member districts in the 41st (1996) Lower House election. Those incumbents in districts that contain more than two old multi-member districts are not included in the figure. Higher Mizusaki indices indicate higher vote concentration. The 45 degree line indicates what the Mizusaki index would be if there were no change in the geographic concentration of candidates' vote shares between the two elections.

The Mizusaki Index used to calculate vote concentration is $\sum_{j=1}^{n} q_j \mid p_{ij} - p_i \mid /2p_i$, where n is the number of municipalities, j indexes the municipalities, i indexes the candidates, p is candidates' vote share, q_j is the proportion of the district votes coming from municipality j. It is important to note that the Mizusaki index is sensitive to choice sets when comparing candidates' indices across elections. If a challenger drops out and the vote gets evenly distributed to each of the remaining candidates and then evenly distributed across municipalities, then the Mizusaki index would still indicate a drop in candidates' vote concentration. Simply using the variance of vote shares is more robust. The variance of vote shares also reveals a similar, although less striking, pattern.

is a measure of partisanship in a particular region.[41] It is the vote share a candidate can reasonably expect to receive just from her partisan affiliation.[42] The PR vote from the 1995 Upper House election is included because of potential issues, such as split ticket voting and differences in choice sets between the PR and SMD districts, that could reduce the accuracy of the Lower House PR vote as a measure of the normal vote.[43]

The electoral data are supplemented with data on candidates' hometowns. Since a hometown is an abstract concept, it can be proxied using several different measures, such as a candidate's current residence, birthplace, family members' residences, or home-office location. For the first analysis in this section I use the municipality of the candidate's residence as a proxy for the hometown.[44] For the second analysis I use the municipality of the incumbent legislators' home offices as the proxy for the hometown.[45] Finally, a measure of the distance from candidates' home municipality needs to be calculated. Again there are a number of ways to measure the distance between municipalities. For the purposes of this analysis I use the simplest measure, which is the distance in kilometers between the centroids of each municipality. The distance data are calculated using ERSI GIS shape and boundary files.

LDP Candidates before and after 1994 Reform

To estimate the change in vote patterns, I examine how the vote shares of LDP candidates changed with distance from the candidates' hometowns for those who ran in the 1990, 1993, 1996, and 2000 elections. Candidates had to run in all four elections to be included in the analysis. I examine their vote shares only in municipalities that are consistently part of the candidates' electoral district across the four elections.[46] Only

[41] When this variable is dropped from the analysis, the substantive findings remain the same.

[42] The Upper House PR data come from the Asahi Newspaper. See Asahi Newspaper *asahi.com de miru '98 saninsen no subete* [A Complete View of the '98 Upper House Election by Asahi.com] (Tokyo: Asahi Shinbunsha Denshi Denpa Mediakyoku, c1998).

[43] The choice set issue would not be a problem if all the voters who vote for parties not represented in the SMD election vote for a non-LDP party. To determine whether the choice set difference had a large effect on the coefficients on the distance variables, the sixteen districts where the SMD choice set consisted of an LDP candidate, an NFP candidate, and a JCP candidate are examined for 1996. The PR vote for the non-LDP parties who are on the PR ballot but not in the SMD are included. Including these PR covariates does not significantly change the magnitudes of the coefficients of interest.

[44] This information is from the Asahi Newspaper. See Asahi Newspaper *asahi.com de miru '96 sosenkyo no subete* [A Complete View of the '96 General Election by Asahi.com] (Tokyo: Asahi Shinbunsha Denshi Denpa Mediakyoku, c1996).

[45] Information about home offices comes from the *Seiji Handobukku*. See Takayoshi Miyakawa, ed., *Seiji Handobukku* [Handbook of Politics] (Tokyo: Seiji Koho Senta, various issues).

[46] In all cases the comparisons are made across the boundaries of the SMDs since the SMDs' boundaries in most cases are a subset of a multimember district. SMDs containing segments of more than one multimember district are excluded from the sample.

candidates whose postreform electoral districts contain more than four municipalities and whose SMD boundaries contain only one old multimember district are included in this analysis. With these restrictions, the sample is reduced to 59 LDP candidates competing in 1057 municipalities (5–40 municipalities/district) in each election.

Limiting the analysis to fifty-nine LDP candidates presents potential sample-selection issues. In particular, the sample of legislators is biased toward rural areas, since most districts in major metropolitan areas consist of fewer than five municipalities. The hometown effect, or *jiban*, is often argued to be strongest in rural regions, so we might estimate an unrepresentatively large hometown effect under the multimember SNTV system. However, if this bias exists, the bias should be present in the new system as well, in which case the *jiban* should be evident even after the electoral system has changed. The sample size can be increased to 106 candidates by examining only the 1993 and 1996 elections. The substantive results presented below hold for the larger sample as well.

A simple linear specification is used to estimate the hometown effect for LDP candidates in municipality j of district i.[47]

$$VoteShare_{ij} = \delta_i + \alpha_1 Jimoto_{ij} + \alpha_2 Distance_{ij} + \alpha_3 Distance^2_{ij} + \alpha_4 Partisanship_{ij} + \varepsilon_{ij}.$$

δ_i is a fixed effect for each district, which is included to account for candidate/district characteristics that do not vary across municipalities, such as the quality of the LDP candidate relative to candidates from all the other parties. The $Jimoto_{ij}$ variable is an indicator variable for whether or not the municipality is considered the candidate's hometown. We might expect the candidates to have an even larger advantage in their hometown municipality, $\alpha_1 > 0$. $Distance_{ij}$ is a measure of the distance between municipality j and the LDP candidate in district i's hometown municipality. The $Distance^2_{ij}$ term is included in the analysis to account for a potential nonlinearity in the relationship between vote shares and distance from the hometown. $Partisanship_{ij}$ is the average PR vote for the LDP in municipality j from the Upper House and Lower House elections. We would expect partisanship to have an effect in both the prereform and postreform periods but it should explain more of the variance in the postreform period.

[47] The results from an overdispersed binomial regression and a binomial with random effects regression are available upon request. The substantive findings do not differ significantly from those presented in this section.

A simple ordinary least squares model is run for each year separately. The main variable of interest is the *Distance* variable.[48] If candidates' vote concentration is due to factors other than those determined by the electoral system, then we would expect the effect of *Distance* to be the same in both the old and the new systems. However, if candidates' vote concentrations are due to factors related to the electoral system, in particular the threshold effect, then we would expect *Distance* to have a larger negative effect in the old system as compared with the new system.

The results of the 1990, 1993, 1996, and 2000 regressions are presented in Table 1. The regression results for the two elections under the old electoral system, the 1990 and 1993 elections, are consistent with the descriptive accounts that LDP candidates concentrated their efforts and resources on geographically defined areas within their districts. The coefficient on the *Distance* variable is negative and statistically significant in both the 1990 and the 1993 regressions.[49] The difference between the coefficient on the *Distance* variable in the 1990 and 1993 regressions is not statistically significant. The positive coefficient on the $Distance^2$ variable indicates that the decline in candidates' vote shares is steeper with proximity to the candidates' hometowns.[50]

The regression results for the two elections under the new electoral system, the 1996 and 2000 elections, are consistent with the predictions from the electoral system threshold effect. Although the coefficient on the *Distance* variable is still significant in the 1996 election, the point estimate of the magnitude of the coefficient drops to 15 percent of the size of the coefficient in 1993 election. The difference in the coefficients on the *Distance* variable between the two electoral systems is statistically significant. By the 2000 election the coefficient on the *Distance* variable is even smaller in absolute magnitude than in the 1996 election and statistically insignificant.

The coefficient on the hometown indicator variable is statistically significant at the 5 percent level in the 1990 election. LDP candidates' vote shares are 3.5 percentage points higher in their hometowns than could be explained by *Distance* alone. The coefficient is positive but of a smaller magnitude in the remaining three election years. The coefficient on the *Partisanship* variable is also positive and statistically significant in all four elections as expected.

[48] A least squares model with weights for the number of the voters in each municipality produces substantively similar results.

[49] Statistical significance is taken to be the standard 5 percent level.

[50] Distance starts to have a positive effect for municipalities farther than 140 kilometers away from the hometown. These municipalities are for the most part small islands far from the mainland.

TABLE 1
DISTRIBUTION OF LDP SUPPORT IN
JAPANESE LOWER HOUSE ELECTIONS
(1990–2000)

	1990	*1993*	*1996*	*2000*
Hometown	0.035*	0.019	0.015	0.012
	(0.016)	(0.015)	(0.008)	(0.010)
Distance	–0.064*	–0.070*	–0.014*	–0.003
	(0.009)	(0.008)	(0.005)	(0.004)
Distance^2	0.004*	0.005*	0.001*	–0.000
	(0.001)	(0.001)	(0.0004)	(0.000)
Normal vote	0.882*	0.986*	1.127*	0.993
	(0.090)	(0.089)	(0.044)	(0.029)
Observations		1057		
Groups		59		

* indicates statistical significance at the .05 level; standard errors clustered by candidate are in parentheses; district fixed effects are included; distance variable is divided by 10

VOTE CONCENTRATION OF LDP, JSP, AND CGP INCUMBENTS

To compare the change in vote patterns across parties, I examine the relationship between vote shares and distance from an incumbent's home office for all LDP, Japan Socialist Party (JSP), and Clean Government Party (CGP) incumbents. As above, only the municipalities within the boundaries of an SMD that contains more than four municipalities are included in the analysis.

For ease of comparability across parties, I use a very simple linear specification to estimate the home office effect for incumbent *k* in municipality *j* of district *i*:[51]

$$VoteShare_{ijk} = \delta_{ik} + \alpha_1 Distance_{ijk} + \varepsilon_{ijk}.$$

Again, α_{ik} is a fixed effect for incumbent *k* in district *i*, which is included to account for candidate/district characteristics that do not vary across municipalities. $Distance_{ijk}$ is a measure of the distance between municipality *j* and the incumbent *k*'s home office municipality.

The regression results for the 1983, 1986, 1990, and 1993 elections are presented in Table 2.[52] The magnitude of α_1 for LDP incumbents is

[51] A least squares model with weights for the number of the voters in each municipality produces substantively similar results.

[52] Observations are dropped when an SMD contained more than one multimember district or when an SMD contained fewer than five municipalities. The substantive findings do not change when these observations are included.

more than twice as large as that for JSP and CGP party incumbents. This illustrates that the high vote concentration under the multimember SNTV system is not a general phenomenon that affects incumbents from all parties. The relatively high concentration of LDP incumbents vote shares is consistent with the descriptive accounts that LDP incumbents use their resources to cultivate favored minorities.[53]

Table 2 also provides further evidence in support of the threshold effect. The results show that even if we extend the sample to all LDP incumbents, the absolute value of the coefficient on the distance variable drops substantially following the 1994 electoral reform. As the formal models predict, the LDP incumbents' personal support in the multimember SNTV system is more geographically concentrated than in the SMDs of the MMM system.

VI. Pre–World War II Electoral Reform

To test whether the diffusion of candidate electoral support is specific to the context surrounding the 1994 electoral reform, I examine whether a similar change in the concentration of candidates' electoral support occurred around the 1925 electoral reform. If the threshold effect argument holds, then we would expect candidates' electoral support to become more concentrated in the areas that move from SMD to multimember district representation. Thus, the change in vote concentration following the 1925 reform should be in the opposite direction of the change in vote concentration following the 1994 reform. The 1925 reform case will help rule out the possibility that the 1994 reform coincided with various technological and cultural changes that would have made candidates' vote concentration become more diffused independent of the changes in the electoral institutions.

The 1925 Elections Act changed the Japanese electoral system from a system with 295 single-member districts, 63 two-member districts,

[53] As discussed in Section II, the Myerson model predicts that candidates in multimember SNTV systems will appeal to narrow subconstituencies, but Myerson's model does not specify that these subconstituencies have to be geographically defined. The difference in the magnitude of the distance coefficient between the LDP and non-LDP candidates may reflect the lower level of within-district intraparty competition among the non-LDP candidates. Non-LDP candidates can rely on their party labels to appeal to narrow subconstituencies that have partisan preferences but may not be geographically defined. By contrast, the LDP candidates competing against numerous other LDP candidates are forced to use their resources to cultivate geographically defined subconstituencies in order to differentiate themselves from their copartisans. As mentioned in Section III, some LDP candidates may differentiate themselves from their copartisans based on their policy positions and not on their hometown locations. The conditions under which politicians will choose to appeal to geographically versus nongeographically based subconstituencies is an area that deserves further research.

TABLE 2
HOME AREA EFFECT FOR INCUMBENT LDP, JSP, AND CGP CANDIDATES IN JAPANESE LOWER HOUSE ELECTIONS (1983–2000)

	1983	*1986*	*1990*	*1993*	*1996*	*2000*
Liberal Democratic Party Incumbents						
Distance	−0.039*	−0.035*	−0.032*	−0.034*	−0.005	−0.002
	(0.004)	(0.004)	(0.005)	(0.005)	(0.003)	(0.003)
Obs	2551	2860	2458	2233	1974	2088
Groups	142	164	147	132	116	125
Japan Socialist Party						
Distance	−0.013*	−0.011*	−0.011*	−0.004		
	(0.004)	(0.004)	(0.003)	(0.004)		
Obs	1074	773	931	506		
Groups	56	42	56	30		
Clean Government Party						
Distance	−0.006	−0.005	−0.005*	−0.008		
	(0.004)	(0.003)	(0.002)	(0.004)		
Obs	152	170	107	69		
Groups	11	11	7	7		

* indicates statistical significance at the .05 level; standard errors clustered by candidate are in parentheses; candidate fixed effects are included; distance variable is divided by 10

and 11 three-member districts to one with 53 three-member districts, 38 four-member districts, and 31 five-member districts.[54] According to Ramseyer and Rosenbluth, three political parties, the Seiyukai, the Kenseikai, and the Kakushin Club, viewed a multimember system as being more beneficial to them than the SMD system, since the multimember district system would ensure that they would be represented in the government and would prevent some other party from gaining a majority of seats. Thus, these three parties formed a majority coalition to pass the 1925 Election Act in the House of Representatives.[55]

The descriptive accounts of post-1925 Japanese politics suggest that candidates under the multimember SNTV system used their resources to cultivate favored minorities in a similar manner as the LDP candidates

[54] Ramseyer and Rosenbluth (fn. 11, 1995), 47, 50.

[55] See Ramseyer and Rosenbluth (fn. 11, 1995). The change in the electoral institutions coincided with an extension of suffrage. In 1925 the tax qualification was abolished and the number of eligible voters quadrupled. See Chitoshi Yanaga, *Japanese People and Politics* (New York: John Wiley and Sons, 1956). The introduction of so many new voters should bias the results against finding an increase in the concentration of candidates' electoral support.

under the post–World War II multimember SNTV system. Ramseyer and Rosenbluth write, "The pre-war centrist parties such as the Seiyukai adopted strategies like the one the post-war Liberal Democratic Party (LDP) adopted: They divided their supporters by using private goods (generally pork or bribes) to induce them to join personalized support groups for individual candidates."[56] The description of candidates' electioneering behavior is consistent with the predictions made by the threshold effect argument.

To test whether the 1925 institutional change had an effect on electoral concentration, I use a new data set of subdistrict (*gun*) level electoral returns from the 1924 and 1928 Lower House elections. The 1924 election was held under the SMD system, while the 1928 election was held under the multimember SNTV system.[57]

Because the data are not disaggregated at a very low level and because information about candidates' hometowns is not readily available, I cannot use the same specification as in Section V. Instead I use the measure of vote concentration discussed in Section IV, the Mizusaki RS index, to illustrate the change in geographic concentration of candidates' vote shares pre- and post-1925. Only those candidates who ran in both electoral systems are included in the analysis.

On average, candidates' vote shares tended to be more concentrated in the 1928 election as compared with the 1924 election. The difference in concentration is illustrated in Figure 5, which plots the vote concentration index, RS index, for candidates who ran in both the 1928 and the 1924 elections. Individual candidates' vote concentration indices tend to be larger in 1928, indicating higher vote concentration for the 1928 election as compared with the 1924 election. This means that candidates' electoral support tended to become more concentrated after the introduction of the multimember SNTV system. Again, this pattern is consistent with the threshold effect described in Section II.

VII. Estimating the Threshold Effect on Government Transfers

In this section I test whether the electoral reforms had the same effect on the distribution of central government transfers to municipalities as

[56] Ramseyer and Rosenbluth (fn. 11, 1995), 52.

[57] The electoral data come from the *Dai 15 Kai Shugiingiin Sousenkyo Ichiran* and the *Dai 16 Kai Shugiingiin Sousenkyo Ichiran*. See Shugiin Jimukyoku, *Dai 15 Kai Shugiingiin Sousenkyo Ichiran* [15th House of Representative General Election Summary] (Tokyo: Shugiin Jimukyoku); and Shugiin Jimukyoku, *Dai 16 Kai Shugiingiin Sousenkyo Ichiran* [16th House of Representative General Election Summary] (Tokyo: Shugiin Jimukyoku).

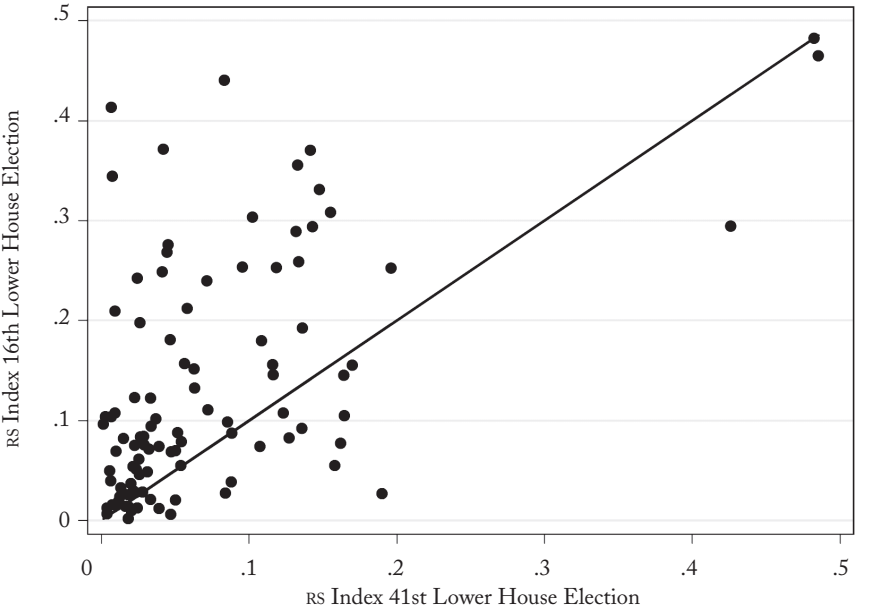

FIGURE 5
VOTE CONCENTRATION BEFORE AND AFTER THE 1925 ELECTORAL REFORMS[a]

[a]This figure plots the Mizusaki Index of vote concentration for candidates who ran in both the SMD system in the 15th Lower House (1924) election and the MMD system in the 16th Lower House (1928) election. This figure shows that the vote concentration of most of these candidates was higher under the MMD system as compared with the SMD system.

it did on the diffusion of candidates' vote shares. There is empirical evidence that some political parties outside Japan do appear to distribute transfers from the national government to particular geographic localities at least partly for political reasons.[58] Ames, Crisp, and Ingall find evidence that incumbents in multimember districts direct pork projects to their geographic subconstituencies within their districts.[59] This section is divided into three subsections. The first subsection describes

[58] See, for example, Stephen D. Levitt and James M. Snyder, Jr., "Political Parties and the Distribution of Federal Outlays," *American Journal of Political Science* 39 (November 1995); Anne Case, "Election Goals and Income Redistribution: Recent Evidence from Albania," *European Economic Review* 45 (March 2001); Kenneth N. Bickers and Robert M. Stein, *Federal Domestic Outlays, 1983–1990: A Data Book* (Armonk, N.Y.: M. E. Sharpe, 1991); Matz Dahlberg and Eva Johansson, "On the Vote-Purchasing Behavior of Incumbent Governments," *American Political Science Review* 96 (March 2001); and David Denemark, "Partisan Pork Barrel in Parliamentary Systems: Australian Constituency-Level Grants," *Journal of Politics* 62 (August 2000).

[59] Ames (fn. 4); Crisp and Ingall (fn. 2).

the data and measurement issues. The second subsection describes the model specification. The final subsection presents the results.

Data and Measurement

Just as in the section on diffusion of electoral support, this analysis uses data aggregated at the municipality level. The dependent variable, targeted subsidies (pork), is measured by per capita conditional central-to-municipality government transfers, *kokko shishutsukin*.[60] The central-to-municipality government transfers include subsidies for general construction, compulsory education, disaster relief, livelihood protection, elderly care, and child care. Some of these transfers are a function of sociodemographic variables (for example, compulsory education and elderly care), while other transfers are allocated according to more subjective standards (for example, construction).[61]

As in Section IV, the main variable of interest is the distance from each incumbent's hometown. Unlike the analysis of electoral diffusion, where distance is measured relative to one legislator's hometown, the central-to-municipality government transfer levels are relative to the municipalities' distance from all LDP incumbents' home offices. Thus, the relevant distance of interest is the minimum distance to any LDP member's home office. To calculate these distances, a data set of all incumbents' home offices for 1983–2000 was created using the information in various issues of the *Seiji Handobukku*.[62] Ideally the incumbents' home addresses would have made this analysis mirror the above analysis more closely, but the information on incumbents' home addresses is not readily available.

Also included in this analysis are several additional covariates, the first of which is income. Since parts of the transfers are used for the welfare of the economically disadvantaged, we would expect a rise in income to lead to a decline in central-to-municipality government transfers. Another variable is the percentage of the workforce engaged in first-tier industries (that is, agriculture and fisheries). A third variable is the percentage of the population that is considered dependent

[60] These data come from the *Nikkei NEEDS Database*. I focus on *kokko shishutsukin* rather than on the *chiho kofuzei* (local allocation tax), which are unconditional grants from the central government to localities, because the national government is perceived to have more discretion over the year-to-year distribution of the *kokko shishutsukin*. See, for example, Junshichiro Yonehara, "Relations between National and Local Governments," in Tokue Shibata, ed., *Japan's Public Sector: How Government Is Financed* (Tokyo: University of Tokyo Press, 1993), 176.

[61] The subsidy and income data are adjusted to their real value in 2000. This consumer price index data comes from http://www.stat.go.jp/data/chouki/zuhyou/22-12.xls.

[62] See Miyakawa (fn. 45).

(that is, over sixty-five or under fifteen years old). Since part of the welfare portion of the transfers is formulaic and meant to benefit children and the elderly, we would expect that the transfers to these areas would be higher simply because of demographic shifts. A measure of the fiscal strength of municipalities is also included.[63] Municipalities in a stronger financial position may receive a smaller portion of the national government transfers.[64]

Model Specification

The effect of hometowns on subsidy distribution is identified by examining differences in the subsidy levels of municipalities whose distance to the closest LDP incumbent changes after an election. As above, only municipalities that are part of electoral districts that contain more than four municipalities and are less than 150 kilometers from an LDP home office are included in the sample.[65] Election years are excluded from the sample to avoid measurement issues regarding when the legislators' involvement in subsidy allocation begins and the retiring legislators' involvement ends.[66]

The degree to which the distribution of subsidies is affected by the electoral reform is estimated using a simple fixed-effects model with both municipality and year fixed effects. The municipality fixed effects are included to account for omitted variables that do not vary over time but may affect the distribution of subsidies.[67] The year fixed effects take into account intertemporal fluctuations in the overall level of subsidies.

The following simple linear specification is used to estimate the hometown effect on subsidies for LDP candidates in municipality i in time t:

$$S_{it} = \gamma_i + \theta_t + \alpha_1 D_{it} + \alpha_2 D_{it} O_t + \alpha_3 D_{it} R_t + \alpha_4 I_{it} + \alpha_5 A_{it} + \alpha_6 DP_{it} + \alpha_7 F_{it} + \varepsilon_{it},$$

where S is the per capita central government transfers to municipality i, D is the minimum distance from municipality i to an LDP incumbent's home office, I is per capita income, A is a measure of agricultural intensity,

[63] The calculation of municipality fiscal strength follows Horiuchi and Saito (fn. 20). It is the ratio of local tax revenue to an estimate of local fiscal demand. This index is perceived to have a large role in the allocation of unconditional grants from the national government to localities (*chiho kofuzei kofukin*) and a relatively smaller role in the allocation of conditional grants (*kokko shishutsukin*).

[64] Data for these variables come from the *Nikkei NEEDS Database.*

[65] Municipalities more than 150 kilometers from an LDP candidate's home office tend to be small islands far from the mainland.

[66] Legislators can still adjust subsidies even after the fiscal budgets have been passed, in particular, when supplemental budgets are passed later during the fiscal year.

[67] For example, Horiuchi and Saito (fn. 20) argue that the size of the municipality should matter because larger municipalities require more construction projects.

DP is the proportion of the population above sixty-five or below fifteen years of age, and *F* is a measure of the fiscal strength of municipality *i*. *R* is an indicator variable equal to one for the years after the 1994 electoral reforms and zero otherwise. *O* is an indicator variable for 1994, which is the one year in the sample that the LDP was not in control of the government.[68]

If LDP legislators are directing government resources to their home areas under the multimember SNTV system, then we would expect α_1, the coefficient on D_{it}, to be negative. $\alpha_1 < 0$ indicates that municipalities farther from the incumbents' home offices would be receiving fewer subsidies. If subsidies become less concentrated after the move to the MMM system, then we would expect α_3, the coefficient on $D_{it}R_t$, to be positive. Thus, a negative coefficient on α_1 and a positive coefficient on α_3 suggest that the municipalities farther from LDP home offices received fewer subsidies under the multimember SNTV system but then began receiving more subsidies under the MMM system relative to the old system.

Two sets of regressions are run. The first treats each year observation separately. The second uses the average of the variables between elections. This second regression averages the variables within seven periods, 1984–85, 1987–89, 1991–92, 1994, 1995, 1997–99, and 2001–2.[69]

Results and Interpretation

Most of the regression results, which are presented in Table 3, are consistent with the threshold effect where candidates in multimember SNTV systems concentrate their resources on geographically defined subconstituencies. Columns 2, 4, 6, and 8 present the results with all of the variables in logs.[70] The top half of the table presents results when each year is treated as a separate observation. The bottom half of the table presents the results averaging the variables for the years between elections.

The negative and statistically significant coefficient on the *Minimum Distance* variable suggests that under the multimember SNTV system, subsidies were lower for municipalities farther from an LDP incumbent's

[68] In a separate analysis not shown here, LDP electoral support is also included in the regression to test whether subsidy distribution is primarily given to areas that are LDP strongholds, as was found to be the case in the United States. If the party, not the LDP incumbents, is distributing subsidy allocations, then we might expect the LDP organization to direct government transfers to the LDP's electoral support bases. This variable is only marginally significant in one out of the four specifications. Including this variable does not change the substantive findings in Table 2.

[69] Missing observations were simply listwise deleted.

[70] In the log specifications the *Minimum Distance* variable is increased by 1.

TABLE 3
DISTRIBUTION OF INTERGOVERNMENTAL TRANSFERS
(1984–2002)

Not Averaged	*1*	*2*	*3*	*4*
Minimum Distance	–0.010*	–0.022*	–0.008*	–0.013*
	(0.003)	(0.006)	(0.003)	(0.006)
Out of Power * Minimum Distance	0.023*	0.040*	0.017*	0.023*
	(0.006)	(0.008)	(0.006)	(0.008)
Post Reform * Minimum Distance	0.016*	0.025*	0.009*	0.005
	(0.005)	0.007	(0.005)	(0.007)
Per Capita Income			–0.017*	–0.077
			(0.005)	(0.062)
First-Tier Industry			0.021	0.078
			(0.026)	(0.039)
Dependent Population			0.129*	0.679*
			(0.037)	(0.105)
Municipality Fiscal Strength			0.007	–0.247*
			(0.008)	(0.050)
RMSE	0.032	0.412	0.032	0.409
Observations (groups)	37116 (3025)		37062 (3025)	
Not Averaged	*5*	*6*	*7*	*8*
Minimum Distance	–0.014*	–0.029*	–0.012*	0.019
	(0.004)	(0.006)	(0.004)	(0.006)
Out of Power * Minimum Distance	0.023*	0.035*	0.018*	0.018*
	(0.006)	(0.008)	(0.006)	(0.008)
Postreform * Minimum Distance	0.017*	0.027*	0.011*	0.008
	(0.005)	(0.007)	(0.005)	(0.007)
Per Capita Income			–0.021*	–0.005
			(0.006)	(0.080)
First-Tier Industry			0.019	0.093*
			(0.035)	(0.045)
Dependent Population			0.118*	0.628*
			(0.048)	(0.112)
Municipality Fiscal Strength			0.001	–0.273*
			(0.006)	(0.056)
RMSE	0.030	0.371	0.030	0.368
Observations (Groups)	19085 (3025)		19085 (3025)	

* indicates statistical significance at the .05 level; standard errors clustered by municipality are in parentheses; municipality fixed effects are included; variables in models 2, 4, 6, and 8 are in logs; distance variable is divided by 100 in regression, 1, 3, 5, and 7.

hometown. This is consistent with what we would expect if LDP incumbents were using pork provision to cultivate the *jiban* surrounding their hometowns.

Similarly, the positive and statistically significant coefficient on the interaction between the *Minimum Distance* and *Post Reform* variables in specifications 1–3 and 5–7 suggests that after the electoral reforms, the municipalities far from LDP incumbents' home offices received relatively more subsidies than they had prior to the reform. This is consistent with the threshold effect predictions that under the MMM system, LDP legislators no longer need to cultivate geographically defined subconstituencies.

In the regressions using the logarithm of the variables and including all the control variables, columns 4 and 8, the coefficients on the *Minimum Distance* and the *Minimum Distance * Post Reform* interaction variables have the predicted signs. However, the lack of statistical significance of these coefficients indicate that the results are somewhat sensitive to specification choices.[71]

The positive and statistically significant coefficient on the variable interacting *Minimum Distance* and *Out of Power* suggests that when the opposition gained control over the government, subsidies were less concentrated around the traditional support bases of LDP incumbents and were distributed more broadly.

When statistically significant, the coefficients on the various demographic and economic variables also have the predicted signs. The coefficient on *Income* is negative and statistically significant in models 3 and 7. The coefficient on the *Dependent Population* variable is positive and statistically significant in all of the specifications. The coefficient on *Municipality Fiscal Strength* is negative and statistically significant in models 4 and 8.

VIII. Conclusion

How much are patterns in representation a result of politicians and voters responding to incentives of electoral institutions rather than other country-specific factors? The above analysis shows that even in Japan, with its distinct political culture, politicians and voters appear to respond

[71] The statistical significance of the coefficient on the distance variables in specifications 4 and 8 are particularly sensitive to the inclusion of the *Dependent Population* variable. The coefficients on the distance variables are statistically significant in all specifications when the *Dependent Population* variable is excluded or also interacted with the *Post Reform* variable. The statistical significance of the results is also sensitive to the level at which observations are clustered.

to the incentives of electoral institutions. The results are consistent with the logic developed in a formal model by Roger B. Myerson. As the model predicts, both the distribution of LDP candidates' electoral support and the distribution of intergovernmental transfers appear to be more concentrated in multimember SNTV districts than in SMDs.

These findings contribute to the ongoing debates regarding the impact of the 1994 electoral reforms on Japanese politics. The results highlight a subtle but clear change brought about by these reforms—the weakening link between incumbents and geographically defined subconstituencies. Japanese Lower House representatives competing in SMDs no longer have their electoral support or intergovernmental transfers concentrated around their hometowns as they had in the multimember SNTV system.

These results provide further evidence that the choice of electoral institutions can have policy implications. Under Japan's multimember SNTV system, incumbent LDP legislators who are focused on cultivating electoral support in their home areas are less likely to represent the policy interests of those outside their home area, as suggested by the results regarding the intergovernmental transfers. By contrast, under the MMM system the incentives to cultivate broader cross sections of district constituencies appear to make incumbents less likely to choose policies that ignore the interests of particular geographic subconstituencies within their district, especially areas that are part of their party's electoral base.

The results also contribute to the literature on the effect of electoral institutions on the salience of particular issues. This literature tends to focus on the effect of electoral institutions on the salience of candidate-specific issues relative to partisan issues.[72] Although the results of this article do not address this debate directly, the results do show that Japan's electoral institutions appear to have influenced the importance of local (that is, hometown) issues. As Japanese candidates and voters shift the focus of elections from hometown issues, we might expect that broader policy issues (for example, foreign policy) would grow in electoral salience. Whether these broader policy issues have been gaining attention is still an open research question.

Finally, the results in this article also suggest that changes to electoral institutions may have a deeper impact on social organizations in Japanese society. The changes in voting patterns and resource alloca-

[72] See, for example, Carey and Shugart (fn. 1).

tion suggest that LDP candidates in the multimember district system may have fostered social connections in particular geographic areas that are no longer being fostered by the LDP candidates in the SMD system. The weakening of these local social structures could have significant long-term effects on aspects of Japanese politics and society, such as voter information, trust, and civic engagement. While such claims are beyond the scope of this article, the patterns described above suggest that an examination of the broader connections between electoral institutions and society is worth pursuing.