

Tournaments, Prizes, and Political Support: Explaining LDP Dominance in Japanese House of Representatives Elections, 1980-2000

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Abstract

We reexamine the core questions of how elections are won and lost in democracies and what governs voter calculations about whether to turn out and which candidate to vote for. The empirical backdrop of our study is contemporary Japan, where the question of how Japan's Liberal Democratic Party (LDP) won nineteen of the past twenty House of Representatives (HOR) elections, even after an electoral reform in 1994 that ought to have made winning more difficult, is puzzling. We posit that incumbents have incentives to convert elections into tournaments between teams, in which the teams supplying the most votes are rewarded after the election and those supplying the least are punished. We gather new data on the universe of Japanese municipalities in the period 1980-2012 and present evidence from fixed effects regressions and a regression discontinuity (RD) design that central government allocations to municipalities in this period were a function of the electoral support they provided the LDP. We provide a more-nuanced story of how the LDP has used pork to win elections in Japan, both before and after electoral reform.¹

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1 Introduction

Japan is an advanced industrialized democracy with a curious feature: a single party, the Liberal Democratic Party (LDP), has won nineteen of the past twenty House of Representatives (HOR) elections. The only election it lost, by which we mean that it failed to capture a plurality of seats, was in 2009. After a three-year stint in opposition, it was back in a landslide in the 2012 election and won again in 2014 (Reed et al., 2013). The LDP also experienced a ten-month period of opposition between 1993 and 1994, but this was not because it failed to capture a plurality of seats, but because the seven opposition parties that contested the 1993 election won just enough seats between them to form a government. When this coalition collapsed in May 1994, the LDP returned to power. The LDP’s electoral success and longevity in government makes it an outlier, even among advanced democracies that have consistently returned one party to power, such as Italy, Sweden, and Israel (Krauss and Pekkanen, 2010; Pempel, 2010).

The LDP’s electoral dominance is remarkable for another reason: it is relatively unpopular and has few strong supporters. While it is tempting to attribute its success to the two decades of double-digit economic growth and fifty four-fold expansion of the Japanese economy it presided over, the number of respondents who said they supported the LDP in polls conducted between 1960 and 2008 averaged just 27% (e.g. Curtis, 1988; Krauss and Nyblade, 2005). When asked which party they supported, those selecting “no party” always outnumbered those choosing “the LDP” (Krauss and Pekkanen, 2010). The party’s share of the popular vote in HOR elections declined from a high of 58% in 1958 to 42% in 1976. After rising slightly to 49% in 1986, it slipped back down to 36.5% in 1993. In 1991, Miyake (1991) noted that there were “far more independents and apathetics in Japan than in other advanced industrialized countries”. In an index of partisanship he created, he credited 38% of respondents to a 1976 survey with being “loyal partisans” (defined as having cognitive awareness of the parties and positive attachment to their party). All told, his calculations revealed that 18% of his respondent pool were loyal LDP supporters. These lukewarm feelings have continued: in a 2003 survey conducted by Masaki Taniguchi, 37% of respondents said they supported the LDP and of these, 14% described themselves as “enthusiastic supporters”. All told, only 5% of respondents considered themselves strong supporters of the LDP.²

²These voter surveys, conducted in collaboration with the *Asahi Shimbun*, can be found [here](#).

Unsurprisingly, much scholarly effort has been devoted to trying to explain the LDP’s uninterrupted string of electoral victories. [Curtis \(1999\)](#) points to external forces, suggesting that the Cold War and U.S.-Soviet tensions made Japanese voters warier of electing Japan’s second-largest party, the Japan Socialist Party (JSP), than they might otherwise have been. Others have pointed to the electoral system, positing that the ability of candidates to win seats with small vote shares in multi-member districts removed the incentives for opposition parties to form a single unified party capable of wresting control from the LDP, thereby helping to perpetuate its rule (e.g. [Reed and Bolland, 1999](#); [Kohno, 1997](#)). Also in this vein is [Maeda \(2012\)](#)’s claim that the threat of intraparty competition encapsulated in multi-member districts worked against the moderation of the JSP’s platform, ensuring it remained a party on the fringes. Others have focused on the unique set of challenges the electoral system posed for majority-seeking parties – namely, they would lose seats if they ran candidates who were too popular – and how the solutions the LDP arrived at gave it an edge over opponents ([McCubbins and Rosenbluth, 1995](#); [Cox and Rosenbluth, 1994](#); [Ramseyer and Rosenbluth, 1993](#)). Still others have highlighted the party’s manipulation of micro-level electoral rules for the benefit of its incumbents ([McElwain, 2008](#)), its cultivation of a posse of local politicians who mobilize votes for the party during elections ([Scheiner, 2005](#)), its careful delivery of both “pork and productivity” ([Pempel, 2010](#)), and the over-weighting of rural versus urban votes in Japan ([Horiuchi and Saito, 2003](#)).

While all of these explanations are convincing, the events of the past twenty years demonstrate that they are inadequate. The Cold War ended in 1991. Japan’s economy entered a recession in the early 1990s, from which by some indicators it has not recovered. The electoral system was reformed in 1994. The new system, which accords more weight to urban voters ([Horiuchi and Saito, 2003](#)), generates centripetal forces that make it easier for a second major party with incentives to target the median voter rather than those on the fringes to form ([Cox, 1990](#)). Indeed, the Democratic Party of Japan (DPJ) was formed in 1996, ran candidates in almost all districts ([Reed, 2007](#)), and offered voters a platform similar to the LDP’s ([Catalinac, 2017](#)). To summarize, almost all of the factors thought to have encouraged LDP dominance have either disappeared or been eliminated, and yet the party remains just as dominant, and by some measures even more than it was in earlier periods ([Curtis, 2017](#); [Jain, 2016](#)). It is not an exaggeration to say that the biggest puzzle in the politics of the world’s third-largest economy is the continued dominance of this party.

In this paper, we build on work by [Bueno de Mesquita, Smith and LaGatta \(2017\)](#) to offer a general theory of how governing parties organize elections to win them. The central questions of concern in this work are how elections are won and lost in democracies, and what determines voter calculations about whether to turn out on election day and who to vote for. They posit that candidates and parties can increase the number of votes won and maximize their chances of electoral victory by converting elections into tournaments between competing teams, in which the teams supplying the “most” votes are rewarded with private goods after the election and teams supplying the “least” votes are punished with the removal of these goods. In such a tournament, voter calculations depend upon the decisions she anticipates her “teammates” making. Voters in teams with high expected support for the incumbent, whether candidate or party, are expected to turn out and vote for that incumbent at higher rates than their counterparts in teams with low expected support for the incumbent. Those voters may not turn out, and when they do, are more likely to vote for the candidate or party that best reflects their policy preferences.

We present evidence from a newly-constructed data set on Japanese municipalities in the period 1980-2000 that this is precisely how the LDP has organized elections in Japan. Our contention is not that existing explanations for LDP dominance are necessarily wrong or that our explanation should replace them. The theory we offer amounts – we believe – to a refinement of several of the explanations that others have offered. We demonstrate that our more-nuanced story can account for other puzzling features of Japanese politics that existing explanations have struggled with. In the remainder of the paper, we outline the theory, address the plausibility of its assumptions in contemporary Japan, describe our data collection, and present results from three empirical tests, two of which use fixed effects regressions with panel data and one that uses a regression discontinuity (RD) design.

2 Theory

Politicians face a daunting problem in elections. They must persuade enough voters to turn out and vote for them so that they win. Of course, their opponents are trying to do the same. The problem is daunting because most prospective voters seemingly have powerful reasons to stay home on election day. As is well established in the literature on elections, the probability

that any voter will tip an election one way or the other is practically zero (e.g. Feddersen, 2004; Geys, 2006). Hence, unless an election is expected to be a tie (an extremely remote likelihood in any large election), there seems to be little incentive for voters to vote. Indeed, voter turnout can very well suffer from the collective action problem. Instead of working hard to ensure the election of a public-spirited candidate, many people will choose to free-ride, hoping that the efforts of others will be sufficient to produce a publicly-beneficial electoral outcome without their having to make the effort to participate. Hence, when all else is equal, we can expect that turnout will be very low. Yet, turnout is not as low as many seem to think it should be if voters are rational. The key, we believe, is that politicians work hard to make sure that “all else” is not equal.

A challenge every politician faces is thus how to motivate people to turn out to support them. While appealing to voter’s policy preferences is one way, it is not likely to be a tremendously effective way. Why not? Putting aside the relatively few voters who have strongly-held policy preferences, for most voters their policy preferences are not strong enough to overcome the free rider problem or the simple fact that their vote almost certainly will not alter the electoral outcome. Yet, turnout in general elections is higher than what we would expect if strongly-held policy preferences – and substantial policy differences between candidates – are uncommon. A body of research, starting with Schwartz (1987) and developed in a strategic environment by Smith and Bueno de Mesquita (2012) and Bueno de Mesquita, Smith and LaGatta (2017) proposes that electoral turnout is motivated by benefits such as pork (e.g. Stokes, 2005; Ramseyer and Rosenbluth, 1993; Ferejohn, 1974), which can override even moderately-strong policy preferences. By “pork”, we mean club goods that benefit everyone in a particular, identifiable set of voters. For instance, a winning candidate may have access to money with which to build a new school, a new hospital, fix a road, improve water supply, or provide other projects. Such projects are typically geographically-focused. This means that the pork cannot be easily spread out evenly to all voters who supported the candidate (even if those voters could be known which, of course, they cannot be in a secret-ballot democracy). Rather, the pork, or varying quantities of it, can be focused on some identifiable groups of voters; that is, people in particular neighborhoods or municipalities.

How might such pork allocations work? While simply offering more pork or better pork is one means to elicit support, Smith and Bueno de Mesquita (2012) and Bueno de Mesquita,

Smith and LaGatta (2017) contend that politicians can do more with fewer resources by offering to allocate benefits across groups in a contingent manner – a mechanism they refer to as the “Contingent Prize Allocation Rule”. This is akin to the tournaments approach of Lazear and Rosen (1981), who show that firms interested in maximizing the effort of their employees should propose a contest for a prize, in which the employee observed to be the “most” productive gets a wage bonus or promotion. While simple wage competitions are difficult to structure in an electoral setting because individual votes are anonymous and wide-scale monitoring and rewarding of individual voters is expensive, time consuming and empirically, appears to be the exception rather than the rule (Stokes, 2005), support (in terms of vote totals) is readily observable at the group level (such as precincts, wards, or districts). If politicians have access to government funds, they will have incentives to choose policies that allocate prizes or punishment to disproportionately reward or punish one group over another. As a simple illustrative example, a politician might offer to build a park (the prize) in the precinct (the group) that provides her with the most votes.

A critical insight of this work is that politicians can use the allocation of contingent prizes to overcome the impediments to individuals turning out to vote. While voters have a near-zero probability of being individually pivotal in an election’s outcome, they have a higher probability of being pivotal on other dimensions (Schwartz, 1987). By carefully crafting the competition for prizes, a politician can make a voter more influential over the distribution of group-oriented prizes and punishments than over which candidate wins the election. In making voters pivotal over the award of prizes to their groups, politicians can motivate voters to turn out even when voting is costly and the outcome is anticipated to be lopsided. Similarly, “punishment pivotality” can induce individuals within groups to turn out to avoid a group-based punishment. Groups and group-based competition for prizes assumes a preeminent role in the contingent-prize theory of voting and resource allocations, but their “power” is derived from the actions of individual voters with self-interested motivations.

If the contingent-prize theory is correct, then voters in groups that are competitive for the prize – money, for instance, for local projects – have strong individual incentives to act as a group in pursuit of the prize even when they may disagree on policy matters. These voters have incentives to turn out and vote for the incumbent even when they do not agree with her policies and even when there is low uncertainty about the election’s outcome. These voters will

be voting to influence whether or not their group gets the prize. In contrast, voters in groups that are not competitive for the prize have strong individual incentives to stay home. If they do decide to turn out, their low “prize pivotality” gives them incentives to vote according to their policy preferences.

This argument generates a testable set of propositions, the first of which we evaluate in this paper. Because vote totals are recorded at the level of the Japanese municipality, we expect that resource allocations by the central government will be a function of the amount of electoral support each municipality provides the winning party, which is the LDP. The null hypothesis is that allocations to municipalities are merely a function of the central government’s official, formula-based allocation policy, which we outline below. An alternative hypothesis derived from the Japanese politics literature (Meyer and Naka, 1998, 1999), which we also evaluate, is that allocations to municipalities are determined by the power wielded by the individual LDP politicians representing them.

3 Case of Japan

Before describing our data collection, it is helpful to address the plausibility of the theory as an explanation for how the LDP has organized elections in Japan. It depends upon several assumptions, two of which are worth addressing in detail. The first is that Japanese municipalities have a demand for central government money. The second is that politicians can reward and punish municipalities by influencing the amount of money allocated them. We address each in turn.

3.1 Municipalities want central government money

Administratively, Japan is divided into 47 prefectures (akin to states), the borders of which have remained constant across our period of study. These prefectures are in turn divided into thousands of municipalities, referred to, variously, as “cities”, “wards”, “towns”, or “villages”. Before a large-scale merging of municipalities took place between 2000 and 2003, there were approximately 3,300 municipalities. The merger reduced this number to just under 2,000 (Yamada, 2016; Horiuchi, Saito and Yamada, 2015). The size of these administrative units varies enormously. In 1980, the largest municipality was Tokyo City in Tokyo prefecture (population

8,179,291) and the smallest was Aogashima Village, located on a small island off of Tokyo (population 185).³ Under Japan's old and new electoral systems, which are described below, effort was made to ensure that municipalities respect electoral district borders, which means that it is rare for a municipality to span more than one electoral district.⁴ Under Japan's old electoral system, used until 1994, the number of electoral districts used in our period of study was 129, with the average district containing 34 municipalities. Under Japan's new system, used since 1994, there were 300 districts in our period of study, with the average district containing 19 municipalities until the merger, after which it contained 13.⁵

Unlike other advanced industrialized democracies, Japanese municipalities are heavily dependent on the central government for money. By law, they are required to provide a certain standard of services such as police, fire protection, and compulsory education to their residents. Yet these laws place limitations on their ability to raise revenue through taxation. Of the total revenue collected from taxation in Japan, approximately 40% is collected at the local level and 60% at the national level. Yet municipalities require substantially more to perform the functions designated them. Their shortfall in revenue is made up with transfers from the central government, which only spends approximately 40% of what it collects (Shirai, 2005; Mochida, 2001; Yonehara, 1986). In doling out approximately 60% of its revenue in the form of transfers, the central government relies on formulas designed to ensure the same quality of services across all parts of the country, regardless of revenue from taxation (Steiner, 1965; Shirai, 2005). To summarize, while it is reasonable to assume that municipalities will be acting in ways that increase the amount of money accorded them, the emphasis on fairness works in the opposite direction, making it less likely that we will observe a political imprint on transfers.

3.2 Politicians can influence transfers to municipalities

During our period of study, Japan used two electoral systems. Existing theories of electoral competition, which we explain below, expect that politicians will have stronger incentives to use transfers to get elected under the old system relative to the new. Over the past twenty years,

³Some of the largest municipalities exist as municipalities but are broken down into smaller units for the purposes of collecting votes. In 1990, for example, 3,352 municipalities existed but vote totals were recorded for only 3,017 of these. The largest municipality for which we had vote totals in 1990 was Chiba City with population 809,128.

⁴We dropped municipalities that span more than one district for the analysis in this paper.

⁵Japan's new system also has a PR tier, which elects candidates in 11 regional blocs. The average bloc contained 27 municipalities before the merger and 29 after.

the Japanese politics literature has marshaled considerable support for this claim. However, key observable implications of this claim are not supported empirically. The contingent-prize theory of voting and resource allocations, in contrast, expects that politicians will always be seeking to convert elections into tournaments between teams, regardless of electoral system. We explain how this theory can provide a more-nuanced account for how the LDP has used pork for electoral gain, and may be able to account for features of distributive politics in Japan not well-explained by existing theories.

From 1947 until 1994, Japan used SNTV-MMD (‘single non-transferable vote in multi-member districts’) to elect between 467 and 512 members of the HOR in between 118 and 131 electoral districts. Under this system, voters cast a single vote for a candidate in a district that elected between two and six representatives, with most districts electing between three and five. Three characteristics of this system are thought to have encouraged incumbents to rely on transfers: multi-member districts, which encourage politicians to appeal to organized groups of voters rather than the median voter (e.g. [Downs, 1957](#); [Cox, 1990](#)); intraparty competition, which prevents politicians from relying on their respective party labels and encourages them to develop a “personal vote” (e.g. [Carey and Shugart, 1995](#)); and Japan’s constitutional structure as a parliamentary system, which gives ruling parties incentives to remain highly-disciplined in parliament ([Ramseyer and Rosenbluth, 1993](#); [McCubbins and Rosenbluth, 1995](#)).

The combination of these three characteristics posed the following problem for ruling parties: they needed to elect more than one candidate in a district, but also remain highly-disciplined in parliament after the election. Work in Japanese politics has demonstrated that the LDP, which assumed power in 1955 after a merger of two conservative parties, came up with a “solution” to this problem that entailed giving its members vetoes in two policy areas of their choosing ([Ramseyer and Rosenbluth, 1993](#); [Krauss and Pekkanen, 2010](#); [Estevez-Abe, 2008](#); [Tatebayashi, 2004](#); [Reed, 2009](#)). This simple act enabled politicians affiliated with the LDP to credibly commit to delivering policy in a definable policy area without fear of being overturned by their party leaders. Their need to compete against same-district co-partisans drove most of them to select construction, agriculture, forestry and fisheries, commerce and industry, and transportation to wield influence over, which would enable them to deliver private goods to groups of voters in their districts.

In early 1994, the coalition government that had assumed power in August 1993 reformed

its electoral system. The new system is called MMM ('mixed member majoritarian'). In it, there are two tiers and voters have two votes. In the first tier, voters choose a candidate in 300 (reduced to 295 in 2013) single member districts (SMD). In the second tier, voters choose a party in 11 regional blocs according to proportional representation (PR). Since 2000, 180 candidates have entered parliament through PR. Unlike other mixed-member systems, MMM requires parties to win seats in both tiers. It *adds* the seats a party wins in the SMD tier to the seats it wins in PR. In practice, this has the effect of encouraging majority-seeking parties to concentrate on winning SMDs. After electoral reform, the LDP returned to power and the DPJ was formed, which became the second-largest party in 2000. Both the LDP and the DPJ adopted a rule reflective of their need to win SMDs: they would allow dual-candidacy, but make their candidate's chances of being resurrected via PR dependent upon how closely they lost their SMD (Reed and Thies, 2001; McKean and Scheiner, 2000; Bawn and Thies, 2003; Ariga et al., 2016).

While Japan's constitutional structure remained the same, the new system eliminated multi-member districts and as a consequence, intraparty competition. Scholars expected that this would encourage politicians trying to place first in their districts to cultivate and run on a party label, which would in turn be comprised of positions on broad policy issues that appealed to the median voter in the universe of districts in which the party was running candidates (Cox, 1987). In this system, politicians are expected to find transfers less useful because they find it more useful to delegate power to their party leader to come up with and provide a platform comprised of programmatic goods, which appeal to the median voter in all districts (Rosenbluth and Thies, 2010). To the extent that transfers are used under the new system, we are more likely to observe newly-empowered party leaders directing them to districts that the party has a hard time winning.

Scholars have marshaled a volume of evidence that this story is correct. Prior to electoral reform, LDP politicians were shown to have relied on personal support organizations rather than party branches to get out the vote (Fukui and Fukai, 1999) and faction leaders for the funds to fight their campaigns and prestigious posts within government (Krauss and Pekkanen, 2010). Serious corruption scandals were common (e.g. Hrebendar, 2000). Government policy, whether it be huge outlays for construction projects (Woodall, 1996; Calder, 1988), protection for farmers, bankers, and special postmasters (e.g. MacLachlan, 2004; Rosenbluth and Thies, 2010), or the

downplaying of policies of interest to the median voter (e.g. [Estevez-Abe, 2008](#); [Catalinac, 2016](#)), reflected the interests of organized groups rather than the median voter. After electoral reform, party leaders appeared to gain new powers over candidate nomination, funding, the allocation of career-enhancing posts ([Fujimura, 2012](#); [Krauss, Pekkanen and Nyblade, 2006](#)), and policy ([Rosenbluth and Thies, 2010](#); [Kaihara, 2007](#); [Takenaka, 2006](#)). One study found that spending on particularistic goods such as construction declined and spending on programmatic goods such as social welfare, science and technology, and public order increased ([Noble, 2010](#)).

Given that local governments are heavily dependent upon the central government for money, as we explained above, it would seem that an important test of this hypothesis would examine transfers to local governments. Specifically, if this theory is correct, politicians should have allocated money in ways that would enhance their electoral prospects under the old system but not under the new. Studies of public spending allocations, however, finds limited evidence of this. Under the old system, [Horiuchi and Saito \(2003\)](#) found that the number of LDP incumbents in a district was negatively correlated with the transfers received by the municipalities therein, and [Meyer and Naka \(1998, 1999\)](#) found that transfers to prefectures under Japan's old system were negatively correlated with the size of the LDP's majority in the Diet. Similarly, [Reed \(2001\)](#) found no evidence that powerful LDP politicians who had earned a name for themselves as "construction dons" influenced spending on construction in their districts, and [Hirano \(2011\)](#) found that transfers did not change following the mid-term death of an LDP incumbent.

In terms of the purported impact of electoral reform, [Hirano \(2006\)](#) found that prior to reform, transfers tended to be focused on the municipalities containing and proximate to the hometowns of the district's LDP incumbents, and after reform, they were more spread out. On the other hand, LDP candidates still promise pork-barrel projects in their election manifestos ([Catalinac, 2016](#)) and when asked in interviews whether they can and do influence transfers, they tend to reply in the affirmative. In interviews with senior and junior LDP politicians, their staff, and party officials conducted by one of the authors in May and June 2017, politicians told stories of projects they had helped secure. These included money for a new rugby stadium, the making of jails and detention centers more robust to earthquakes, the beautification of train stations and beaches for surfing, the building of new roads, bypasses, and tunnels, and programs to increase the number of foreign tourists. For example, an LDP politician with experience of both electoral systems from a rural district described the activities of the largest city in his

district, Kita Kyushu, in the following way:

“A lot of Kita Kyushu’s demands are about highways, which are managed by the central government. They want them to be wider. They also want roads in the district to be made nicer, new roads to be built to get rid of traffic jams, bypasses to be built, public spaces to be made more beautiful, and the areas around train stations in the city to be renovated. They can go through the Ministry of Construction’s local branch. But if they don’t listen, I help them. This is the type of thing I help them with. I introduce them to people in the Ministry of Construction. I can do this for them because I’m a veteran politician and have connections to all kinds of people. I also have a lot of connections in foreign affairs and in education, so I can help them with that, also. Getting science and technology-related things for my district.”⁶

Another LDP politician with experience of both systems from an urban district described the cities in his district in the following way:

“They create lists of things they want and present them to me. On the list, they include the names of the ministries and agencies that deal with each of their requests for my sake. I take them to the party, and bureaucrats come, and we hammer things out”.⁷

Another LDP politician with experience of both systems from a rural district told me:

“Over time, as a politician, you build up connections. You accumulate a lot of people who can help you. Especially in the bureaucracy. So I think you can get stuff for your district.”⁸

An interview with a non-LDP politician was also illustrative. Until 2017, Nagashima Akihisa was a member of the DPJ. Being in the opposition, we would not expect him to use transfers to get elected. In our interview, he confirmed that while he did “introductions, sometimes, for people in my district who want things”, he does not “get things for my district”. Tellingly, however, he described a mayoral election for Hino City, located within his district, in April 2017. In this election, he campaigned for the DPJ-affiliated candidate and the LDP incumbent in the district, Odawara Kiyoshi, campaigned on behalf of the LDP-affiliated candidate. Nagashima described Odawara’s campaign as follows:

“In April this year there was a mayoral election in Hinoshi. This is a city within my district. I went out in support of the candidate and so did the LDP HOR representative. I got to watch what he talked about. I emphasized things the candidate had done for the city. He’d implemented some policies for old people, children, and industries. The LDP politician’s speeches were like something from the Meiji era. Honestly. He had one message and just continued with that the entire time, so I got

⁶Interview, HOR Member and LDP Member Mihara Asahiko, May 30, 2017, Tokyo, Japan.

⁷Interview, HOR Member and LDP Member Nakayama Yasuhide, May 25, 2017, Tokyo, Japan.

⁸Interview, HOR Member and LDP Member Mori Eisuke, June 8, 2017, Tokyo, Japan.

to listen to it a lot. I was “I will make sure this city gets central government money”. It was a strong message. It was “if you elect this person, I will make sure he gets money”.”⁹

Despite the incentives for LDP politicians to rely on their respective party labels under the new system, these anecdotes suggest that they remain involved in the allocation of government money. We contend that the contingent-prize theory of voting and resource allocations can shed light on two puzzles: one, why there is little evidence of politicians using transfers to enhance their electoral prospects under the old system; and two, why there is evidence politicians remain involved in transfers under the new. In the contingent-prize theory, politicians have incentives to convert elections into tournaments between teams regardless of electoral system. The way they do this is not by directing pork to their *districts*, but rather, by directing pork to the *municipalities within their districts* that give them either the most votes or a large number of votes relative to municipal population. Not only can this explain why districts with more LDP incumbents did not get more money under Japan’s old system, which flies in the face of conventional theories of how the system works, but it can also explain why districts with more senior LDP politicians did not get more money. In the contingent-prize theory, all politicians, whether junior or senior, can do less with more by converting elections into tournaments between teams.

4 Data

We assembled municipal-level data on central government transfers, demographic and economic variables, and voting behavior in all elections to Japan’s House of Representatives (HOR) in the period 1980-2012. We focus on HOR elections because of the HOR’s authority over the budget, treaties, and election of the Prime Minister, as well as its ability to pass legislation without approval from the House of Councilors if it can muster a two-thirds majority. For the voting data, we use the JED-M data set (Mizusaki, 2014). This reports municipal-level vote totals for the universe of candidates contesting HOR elections under Japan’s old electoral system and for the universe of candidates and parties contesting HOR elections in the district and PR tiers, respectively, under the new system.

⁹Interview, HOR Member and Independent Nagashima Akihisa, June 6, 2017, Tokyo, Japan.

For data on transfers, demographics, and economics, we use data gathered by Nikkei NEEDs, which has been used in other work on spending allocations (e.g. Hirano, 2006, 2011).¹⁰ Almost all the transfers received by municipalities in Japan fall into one of two categories: “local allocation tax” (LAT or *chiho kofuzei* in Japanese), which comprises approximately 20% of local government revenue and “national treasury disbursements” (NTD or *kokko shishutsukin*), which comprise approximately 14% of local government revenue. LAT is calculated according to a formula designed to equalize fiscal capacity across municipalities so that all municipalities will be able to provide the same quality of services such as police, fire protection, compulsory education, and the construction of roads and bridges to their residents, regardless of their revenue from taxation. NTD are discretionary conditional grants, which can be used to fund programs in areas such as health and welfare, regional development, compulsory education, transportation, and disaster relief. Yonehara (1986) notes that the central government can use the withholding of NTD to ensure that municipalities follow their guidelines and directives about how services should be provided. It is therefore reasonable to expect that politicians will be able to influence NTD on a year-to-year basis, so we focus on this in the analysis that follows.¹¹

We also collected variables that others have found influence transfers: namely, per capita income in the municipality; population in the municipality; proportion of municipal residents employed in primary industries such as agriculture; proportion of municipal residents aged 15 or under; and proportion of municipal residents aged 65 or older (Horiuchi and Saito, 2003; Hirano, 2006, 2011).¹² All else equal, we expect municipalities that are smaller, poorer, and have a higher proportion of residents who are dependent or employed in agriculture to receive more transfers. We also collected data on “municipal fiscal strength”, which is an indicator the central government uses to allocate LAT. This is the fraction of a municipality’s demand that can be financed with local taxes. If anything, we expect this variable will be negatively associated with transfers. We also collected data on municipalities that are so large they have received a special ordinance granting them a different relationship with the central government,

¹⁰A (Japanese-language) description of the data is [here](#).

¹¹Because LAT is allocated by formula, we expect that it will not be subject to manipulation by politicians for electoral purposes. However, there is a sub-category of LAT called “LAT special”, which is granted for “special” purposes such as restoring historical properties of interest, holding elections, or disaster relief. This comprises approximately 6% of the total LAT each year. We intend to supplement the analysis presented here with an analysis of these variables.

¹²Per capita income and population are measured annually but proportion employed in agriculture and proportion who are dependent are collected in the census, which is taken every five years. For each year, we took the value in the closest five-year interval.

and municipalities have been struck by natural disasters. We expect that municipalities in these two categories will receive more transfers.¹³ Finally, most of the specifications we report below control for the amount of NTD received by the municipality in the year of the election. If there is a path-dependent quality to NTD, we expect this variable to be positively correlated with NTD in the year after the election.

5 Results

We present three tests designed to evaluate the theory’s predictions. The first investigates the hypothesis that more effort, measured in votes cast for winning LDP politicians as a proportion of eligible voters in a municipality, equals more money after the election. The second investigates whether municipalities that supplied the most votes to a winning LDP politician in the previous election are punished for dropping from this position by receiving less money after the election. The third investigates whether municipalities that become top supporters of winning LDP politicians in an election get more money after the election.

5.1 Municipalities that exert more effort get more money

To create our effort variables, we first computed $VshareVP_{mct}$, which is the share of potential votes in municipality m captured by candidate c in election t for the universe of winning candidates in the seven House of Representatives (HOR) elections held between 1980 and 2000. By “potential votes”, we mean the total number of eligible voters in the municipality. We focus on the period from 1980 until 2000 because the borders of the approximately 3,300 Japanese municipalities remained virtually identical during this time.¹⁴ Intuitively, $VshareVP_{mct}$ measures how hard each municipality worked for each of the candidates who won a seat in the electoral district in which the municipality was located. Almost all municipalities are located within a single electoral district and those that are not are excluded. The borders of these districts were redrawn following Japan’s 1994 electoral reform, so municipality m was located in one district prior to reform and another district after reform.

¹³Data on municipal fiscal strength and special ordinance cities are measured annually. Data on natural disasters exists from 1995. We are in the process of collecting data on previous years.

¹⁴For the most part, border changes did not occur. Small changes in municipality size occurred occasionally because of land reclamation projects. Between 2000 and 2003, a series of municipal mergers occurred, which reduced the number of municipalities by more than 1,000.

Using these $VshareVP_{mct}$ scores, we created two effort variables. Our first, $bestLDP_VshareVP_m$, takes the $VshareVP_{mct}$ scores of the universe of LDP candidates who won in the district in that election and for each municipality, records its maximum. In other words, if there were three LDP winners in district d and they captured 0.4, 0.2, and 0.1 of the votes in municipality m respectively, municipality m 's $bestLDP_VshareVP_m$ score is the maximum of these, or 0.4. Our second effort variable, $sumLDP_VshareVP_m$, takes the $VshareVP_{mct}$ scores of the universe of LDP candidates who won in the district in that election and for each municipality, records the sum of these. In this example, municipality m 's $sumLDP_VshareVP_m$ score is the sum of these, or 0.7. Higher scores on both variables mean that larger proportions of potential voters in municipality m turned out and voted for one or all of the LDP winners in the district, respectively. Because we have repeated observations for the same municipalities over time, we can use panel regression with municipality fixed effects to estimate the effect of an increase in a municipality's effort level on the transfers it receives after the election. This design controls for unobserved, time-invariant features of municipalities that may influence their likelihood of becoming a high-effort municipality and therefore the transfers they receive after an election. To do this, we limited our analysis to the universe of 2,851 municipalities that were present in every HOR election from 1980 until 2000 and whose borders were not changed, and we ran the following regression:

$$transfers_{md(t+1)} = \beta_0 + \beta_1 bestLDP_VshareVP_{mdt} + \beta_2 Z_{mdt} + \gamma_m + \sigma_{dt} + \epsilon_{mt},$$

where the dependent variable, $transfers_{md(t+1)}$, is the (logged, per capita) amount of discretionary transfers received by municipality m in electoral district d the year after an election held in year t for the universe of municipalities present in the seven HOR elections between 1980 and 2000.¹⁵ Our independent variable of interest, $bestLDP_VshareVP_{mdt}$, measures the largest share of municipality m 's vote that went to a winning LDP candidate in election t . Z_{mdt} contains the following municipality-level covariates, all of which are measured in year t : the amount of discretionary transfers received (logged, per capita); log of the municipality's population; proportion of the municipality's population that is employed in agriculture; proportion of the population who are dependent; per capita taxable income in the municipality; municipality

¹⁵We intend to adjust the transfer and income data to their real values in a more recent year.

fiscal strength; an indicator for whether the municipality had been hit by a natural disaster; and an indicator for whether the municipality was a special ordinance city, which have a different relationship with the central government. γ_m are municipality fixed effects, which control for features of the municipality that could influence its effort level; σ_{dt} are fixed effects for a given electoral district in a given election, which control for features of the district in that election that might influence the amount of discretionary transfers received by the municipalities located therein, such as the number of representatives elected in the district or the identity of the politicians representing it; and ϵ_{mt} are individual municipality errors. In these regressions, standard errors are clustered at the municipality level to correct for correlation in the error terms over time.

The results are presented in the first and second columns of Table 1. The first column is the baseline model with municipality and district-year fixed effects and the second column includes the controls. In both specifications, the coefficient on $bestLDP_VshareVP_{mdt}$ is positive and significant, meaning that municipalities that increase their effort get more money after the election. Model 2 reveals that a one-unit increase in effort level nets a municipality a 13% increase in per capita transfers in the year after the election. To offer a intuitive example, in 1990 the average municipality had a population of 44,985 and received 32,908 yen (approximately \$300 USD) in per capita transfers. If that municipality increased the number of votes it gave to a winning LDP candidate by one-tenth of a unit, in this case approximately 4,500 votes, it would have net itself 37,186 yen (approximately \$330 USD) in per capita transfers. This increase would have translated into an increase of approximately \$1.3 million USD in transfers in 1991.

We ran the same as above regression with $sumLDP_VshareVP_{mdt}$ as the dependent variable. The results are presented in the third and fourth columns of Table 1. The first column is the baseline model with the municipality and district-year fixed effects and the second column includes the controls. In both specifications, the coefficient on $sumLDP_VshareVP_{mdt}$ is positive and significant, showing that municipalities that increase their cumulative effort for winning LDP candidates also get more money after the election. The coefficients are slightly smaller with this dependent variable, but similar. It is worth emphasizing that the models in the second and fourth columns control for the (logged per capita) amount of discretionary transfers received by the municipality in year t and for variables such as fiscal strength, which the Japanese government uses to determine the allocation of non-discretionary transfers. Of

Table 1: More votes for winning LDP politicians means more money after the election. A panel regression of the amount of central government transfers received the year after an election on the amount of effort exerted by that municipality in support of winning LDP candidates, plus controls, for the seven HOR elections, 1980-2000.

	Baseline	(+ controls)	Baseline	(+ controls)
(Intercept)	-3.02***	1.34 [†]	-2.99***	1.34 [†]
	(0.24)	(0.73)	(0.24)	(0.73)
Best LDP Vote Share (VP)	0.32***	0.13**		
	(0.06)	(0.05)		
Sum LDP Vote Shares (VP)			0.25***	0.12**
			(0.06)	(0.04)
Per capita transfers at t (logged)		0.45***		0.45***
		(0.01)		(0.01)
Fiscal strength index at t		-0.02		-0.02
		(0.07)		(0.07)
Proportion dependent at t		0.48		0.50
		(0.33)		(0.3)
Proportion employed in agriculture at t		-0.26		-0.26
		(0.31)		(0.31)
Population at t (logged)		-0.26**		-0.26*
		(0.1)		(0.01)
Income per capita at t (logged)		0.00		0.01
		(0.06)		(0.06)
Municipality FE	✓	✓	✓	✓
District-year FE	✓	✓	✓	✓
N	19957	19957	19957	19957
R^2	0.75	0.80	0.75	0.80
adj. R^2	0.69	0.76	0.69	0.76

Robust standard errors clustered on the municipality in parentheses

[†] significant at $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

the controls, only the amount of discretionary transfers received in the year of the election is significant. It is also worth pointing out that our findings hold under two electoral systems, one using multi-member districts and the other using single-member districts.

An alternative story holds that it is not LDP politicians who direct transfers to municipalities in their district based on their effort level, but *senior* LDP politicians who direct transfers to municipalities based on their effort level. We created a variable coded “1” if one of the LDP winners in the district was a senior LDP politician in election t (defined as having won five or more elections) and “0” otherwise.¹⁶ We ran the same regressions reported in Table 1 with this

¹⁶In 1980, 84% of municipalities were represented by a senior LDP politician. This dropped to 78% in 1983, 78% in 1986, 76% in 1990, 71% in 1993, 34% in 1996, and 37% in 2000, respectively.

variable and its interaction with our independent variables of interest: *bestLDP_VshareVP* and *sumLDP_VshareVP*, respectively. We found that the interaction was insignificant in all four models. This means that our result is not being driven by the presence of senior politicians, and both senior and junior politicians appear equally capable of directing spending to municipalities within their districts that gave them the most votes. This is consistent with other work that found a null effect of being senior on a politician’s ability to direct spending to their district (e.g. Reed, 2001; Hirano, 2011).

5.2 Municipalities supplying the most votes get less money once they stop doing so

Next, we created a third variable capturing effort. First, we computed $PropSupport_{mct}$, which measures the proportion of candidate c ’s votes that came from municipality m in election t for the universe of winning candidates in the seven HOR elections held between 1980 and 2000. Higher scores mean that municipality m supplied more of the votes that elected candidate c . Using these, we created a third variable called $TopSupporterLDP$, which is coded “1” if the municipality had the largest $PropSupport_{mct}$ score for one of the winning LDP candidates in the district and “0” otherwise. Intuitively, if municipality m has a $TopSupporterLDP$ score of “1”, it means that it supplied the largest number of votes to one of the winning LDP candidates in the district in that election.¹⁷ If one of the LDP winners in district d got 0.7 of their votes from municipality m , 0.2 of their votes from municipality n , and 0.1 of their votes from municipality o , municipality m would receive a “1” for $TopSupporterLDP$ and the others would receive a “0”, unless they supplied the largest number of votes to another winning LDP candidate, in which case they would also receive a “1” for $TopSupporterLDP$.

We conducted two tests with $TopSupporterLDP$. This subsection describes the first test, which is designed to evaluate if municipalities supplying the most votes to one of the winning LDP candidates in the previous election $drop$ from this position in election t are punished in $t + 1$ by receiving less discretionary transfers. To evaluate this, we created the variable $pastTopSupporterLDP$, which is coded “1” if municipality m was coded “1” for

¹⁷When districts have more than one LDP winner, they can have more than one municipality coded “1” for $TopSupporterLDP$. They can also have a single municipality coded this way if all winning LDP candidates in the district received their largest number of votes from the same municipality.

TopSupporterLDP in the previous election and “0” otherwise. Our *PastTopSupporterLDP* variables are coded from 1983, so we focus on the seven HOR elections held from 1983 until 2000. Limiting our analysis to the universe of 2,839 non-top supporting municipalities in these elections (those coded “0” for *TopSupporterLDP*) enables us to compare the amount of government transfers received in $t + 1$ by municipalities that *ceased* being the top supporter of a winning LDP candidate in the election held in t with the amount of transfers received in $t + 1$ by municipalities that had not been a top supporter in t or the previous election. Specifically, we ran the following regression:

$$\text{transfers}_{md(t+1)} = \beta_0 + \beta_1 \text{PastTopSupporterLDP}_{mdt} + \beta_2 Z_{mdt} + \gamma_m + \sigma_{dt} + \epsilon_{mt},$$

where the dependent variable, $\text{transfers}_{md(t+1)}$, is the (logged, per capita) amount of discretionary transfers received by non-top supporter municipality m in electoral district d the year after an election held in year t for the universe of non-top supporter municipalities in the seven HOR elections held between 1983 and 2000. Our independent variable of interest, $\text{PastTopSupporterLDP}_{mdt}$, is coded “1” if the non-top supporter municipality had been coded “1” for *TopSupporterLDP* in the previous election.¹⁸ Z_{mdt} contains the same municipality-level covariates mentioned above, all of which are measured in year t . γ_m are municipality fixed effects, which control for features of the municipality that could influence its effort level; σ_{dt} are fixed effects for a given electoral district in a given election, which control for features of the district in that election that might influence the transfers received by the municipalities located therein; and ϵ_{mt} are individual municipality errors. In these regressions, standard errors are clustered at the municipality to correct for correlation in the error terms over time.

Table 2 reports the results. The first column is the baseline model with the municipality and district-year fixed effects and the second column includes the controls. In both specifications, the coefficient on *PastTopSupporterLDP* is negative and significant, meaning that municipalities that cease to be top vote suppliers of winning LDP candidates get less money after the election. Model 2 shows that dropping from this position results in a “punishment” of 6% of the municipality’s per capita transfers in the year after the election. To offer an intuitive example, in 1986 Hokkaido First District contained 34 municipalities. In the 1986 election, three of these

¹⁸In 1983, 3% of municipalities received a “1” for variable. In 1986, it was 3%; in 1990, it was 3%; in 1993, it was 6%; in 1996, it was 2%; and in 2000, it was 2%.

supplied the largest number of votes for one of the three winning LDP candidates: Sapporo City’s Toyohira Ward, Sapporo City’s West Ward, and Otaru City. In the next election, held in 1990, only the former retained its status as a top supporter, supplying the most votes to the two LDP candidates who won in 1990. Our model expects that in 1991, Sapporo City’s West Ward and Otaru City would have received 6% fewer transfers than other municipalities in 1991 that were comparable on key demographic and economic metrics but were not top supporters in either 1986 or 1990. Given that Otaru City received a per capita transfer of 51,134 yen (approximately \$480 USD) in 1990, dropping from this position is expected to cost it 3,068 yen (approximately \$26 USD) per person. Given that Otaru City had a population of 166,522 in 1990, this translates into a net loss of about \$5.1 million USD.

Table 2: Municipalities that drop from being the top vote supplier of a winning LDP candidate get less money after the election compared to municipalities that were not top vote suppliers in either election. A regression of the amount of transfers received by a municipality the year after the election on a variable indicating whether it had dropped from being a top supplier of votes for a winning LDP candidate in the previous election, plus controls and fixed effects, for all HOR elections, 1983-2000.

	Baseline	(+ controls)
(Intercept)	-2.92*** (0.38)	1.86† (0.99)
Past Top Supporter LDP	-0.09** (0.03)	-0.06* (0.02)
Per capita transfers at t (logged)		0.45*** (0.01)
Fiscal strength index at t		-0.07 (0.09)
Proportion dependent at t		0.47 (0.39)
Proportion employed in agriculture at t		0.03 (0.43)
Population at t (logged)		-0.30** (0.11)
Income per capita at t (logged)		0.07 (0.08)
Municipality FE	✓	✓
District-year FE	✓	✓
N	16554	16554
R^2	0.76	0.81
adj. R^2	0.70	0.76

Robust standard errors clustered on the municipality in parentheses

† significant at $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

As before, the model in the second column of Table 2 includes the (logged per capita) amount of discretionary transfers received by the municipality in year t and variables such as fiscal strength. That municipality m 's drop in top supporter status in the election held in year t has a negative impact on transfers in $t + 1$ even after controlling for the transfers it received in t is powerful evidence that politicians observe its effort level and find a way to punish those who under-perform relative to their former performance. As before, these results suggest that the mechanism of punishing municipalities for exerting less effort exists under both electoral systems. As before, we found no evidence that the punishment is being doled out by senior LDP politicians. Running the same regression with our “senior” variable, indicating that one of the winning LDP candidates in the district had won five or more elections, and its interaction with *PastTopSupporterLDP* revealed that it was insignificant in both models. It does not seem to be the case that senior politicians are better able to punish municipalities for dropping from this status than their junior peers.

5.3 Municipalities supplying the most votes get more money after the election

Our second test with *TopSupporterLDP* is designed to evaluate whether municipalities that become top vote suppliers of at least one of the winning LDP candidates in their district are rewarded with more money after the election. In regressions, both election-specific and a specification that pools observations from the eight HOR elections held between 1980 and 2000, the coefficient on *TopSupporterLDP* is always positive and statistically significant, even when controlling for a host of other variables that we might expect also influence transfers in $t + 1$. However, this merely establishes a correlation between being the top vote supplier in election t and receiving more transfers in $t + 1$. Municipalities that become top supporters likely differ from municipalities that do not in unobserved ways that are related to the amount of transfers they expect to receive. For example, they are likely to be larger.

To evaluate the causal impact of becoming a top supporter in election t on the transfers a municipality receives in $t + 1$, we use a regression discontinuity (RD) design. We identify municipalities that narrowly became top supporters in election t and municipalities that narrowly missed out on this position and compare the transfers both sets of municipalities received

in $t + 1$. The identifying assumption in this design is that when only a few votes determines whether or not an observation is “treated” (that is, a municipality becomes a top supporter), it is reasonable to assume that those municipalities will be similar on all metrics relevant to transfers. Whether they receive the ‘treatment’ or not can be considered as-if random. Because the only difference between these two groups is their treated status, any statistically significant difference in transfers received at $t + 1$ between them can be attributed to the causal impact of receiving the treatment. We are in the process of examining the validity of these assumptions.

Implementing an RD design requires creating a “score” for each municipality. Municipalities with scores exceeding a known cutoff are treated, while those with scores below the cutoff are not treated. Our score, $c2TopSupporterLDP$, scales municipalities based on their proximity to the municipality that provided the second-largest number of votes for any winning LDP candidate in that district in that election. This score places all municipalities on a scale in which 0 is the vote share supplied by the second-highest vote supplier; municipalities over this cutoff are top supporters ($TopSupporterLDP = 1$), with their distance from the cutoff illustrating their margin of victory; and municipalities under this cutoff are not top supporters ($TopSupporterLDP = 0$), with their distance from the cutoff illustrating their margin of loss. Because many districts have more than one LDP winner, creating this variable entailed two steps. First, for each LDP winner, we took the $PropSupport_{mct}$ scores for all municipalities in their district and identified the municipality in which they won their second-largest number of votes. We subtracted this municipality’s $PropSupport_{mct}$ score from the $PropSupport_{mct}$ scores of all municipalities in the candidate’s district and divided those by the $PropSupport_{mct}$ score of the municipality supplying the second-largest number of votes. For each LDP winner, this places all the municipalities in their district on a scale in which 0 is the vote share supplied by the municipality supplying them with the second-largest number of votes, the municipality with a positive score is their top supporter, and all municipalities with negative scores are not top supporters. This means that municipalities in districts with LDP winners will have n scores, where n is the number of LDP winners in the district. The second step was to take the maximum of each municipality’s score. The result is a measure of how close each municipality was to becoming a top supporter for one of the winning LDP candidates in the district, and for top supporters, how large their margin of victory was.

We then restricted our sample to municipalities that are above and below the cutoff of 0,

and ran the following regression:

$$\begin{aligned}
\text{transfers}_{md(t+1)} &= \beta_0 + \beta_1 \text{TopSupporterLDP}_{mdt} \\
&+ \beta_2 c2\text{TopSupporterLDP}_{mdt} \\
&+ \beta_3 \text{TopSupporterLDP}_{mdt} \times c2\text{TopSupporterLDP}_{mdt} \\
&+ \beta_4 Z_{mdt} + \sigma_{dt} + \epsilon_{mt}
\end{aligned}$$

where the dependent variable, $\text{transfers}_{md(t+1)}$, is the (logged, per capita) amount of discretionary transfers received by municipality m in electoral district d the year after an election in year t for the universe of municipalities in the five HOR elections held between 1980 and 1993. Our independent variable of interest, $\text{TopSupporterLDP}_{mdt}$, is coded “1” if the municipality supplied the largest number of votes to one of the winning LDP candidates in the district and “0” otherwise. $c2\text{TopSupporterLDP}$ is the municipality’s score on the aforementioned running variable, which measures a municipality’s proximity to becoming top supporter and margin of victory of the top supporter. Z_{mdt} contains the same municipality-level covariates mentioned above, all of which are measured in year t . σ_{dt} are fixed effects for a given electoral district in a given election, which control for features of the district in that election that might influence the transfers received by the municipalities located therein, and ϵ_{mt} are individual municipality errors. In these regressions, standard errors are clustered at the municipality to correct for correlation in the error terms over time.

Table 3 presents the results. In the first column, the regression is run on municipalities that are within 1% of the cutoff, and in the second column, the regression is run on municipalities that are within 2.5% of the cutoff. The RD estimate on TopSupporterLDP is positive and statistically significant at the 0.05 level with a 2.5% spread and positive and significant at the 0.10 level with a 1% spread. Concentrating on municipalities that are within 2.5% of the cutoff, the model shows that narrowly becoming a top supporter in t netted a municipality 29% more in central government transfers in $t + 1$. For example, Okayama First District elected five representatives in 1990. Of these, two were from the LDP: Aisawa Ichiro, who placed third, and Hiranuma Takeo who placed fourth. Remarkably, there was only *one vote* between the 2,134 votes provided by Hiranuma’s top supporter (Ochiai Town, population 17,112) and the 2,133 provided by his second-best supporter (Mimasaka Town, population 14,098). Had Mimasaka

Town provided Hiranuma with just two more votes, our model expects that it would have net itself 29% more in transfers, which would have increased its per capita amount from 16,173 yen (approximately \$135 USD) in 1990 to 20,863 yen (approximately \$180 USD) in 1991. Aisawa's top supporter in 1990 was Oku Town (population 20,062), which provided him with 2,359 votes. His second-best supporter was Sanyo Town (population 21,922), which provided him with 2,061 votes. Had Sanyo Town given Aisawa 299 more votes, it would have become his top supporter, netting itself a 29% increase in transfers in 1991. Alternatively, Sanyo Town could have become Hiranuma's top supporter with just 70 more votes (from the 2,065 it supplied Hiranuma to the 2,135 needed to become his top supporter), netting itself the same increase.

6 Conclusion

This paper began with a puzzle: Japan has all the hallmarks of a fully-functioning democracy, with one exception: the absence of regular alternations in power. Despite an electoral reform in 1994 designed to make continuous rule by a single party much more difficult, Japan's LDP has won six of the seven elections held under this system. Under Japan's old system, it won all thirteen of the thirteen elections it contested. Uninterrupted rule has enabled the party to exercise an enormous influence on all facets of policy in Japan, whether domestic or foreign. In this paper, we drew upon work by [Bueno de Mesquita, Smith and LaGatta \(2017\)](#) to offer a general theory of how governing parties organize elections to win them. We provided evidence from a newly-constructed data set on the universe of Japanese municipalities in existence between 1980 and 2000 that this is precisely how the LDP has done so in Japan. In doing so, we have provided a more-nuanced story of how LDP politicians used pork to win elections under the old system, and how it continues to do so under the new.

Table 3: RD effect of becoming a top supporter in election t on the amount of central government transfers received in $t + 1$, 1980-1993. With a 2.5% spread (the second column), the coefficient on top supporter is significant. With a 1% spread (the first column), it is significant at the 0.10 level.

	Spread of 1%	Spread of 2.5%
Top Supporter LDP	0.390 [†] (0.217)	0.294* (0.144)
Per capita transfers at t (logged)	0.841*** (0.048)	0.843*** (0.046)
Fiscal strength index at t	0.036 (0.134)	0.015 (0.084)
Proportion dependent at t	-0.272 (1.307)	0.068 (1.151)
Population employed in agriculture at t	0.130 (0.580)	0.320 (0.483)
Population at t (logged)	0.061 (0.050)	0.071 (0.045)
Per capita income at t (logged)	-0.105 (0.201)	-0.096 (0.180)
Municipality with special ordinance	-0.003 (0.062)	-0.020 (0.054)
Constant	-1.655 (0.878)	-1.763* (0.797)
District-year FE	✓	✓
Observations	871	935
R-squared	0.918	0.912

Running variable is the top supporter's margin of victory.

Coefficients on β_2 and β_3 are not displayed.

Robust standard errors clustered on municipality in parentheses.

[†] significant at $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

References

- Ariga, Kenichi, Yusaku Horiuchi, Roland Mansilla and Michio Umeda. 2016. "No sorting, no advantage: Regression discontinuity estimates of incumbency advantage in Japan." *Electoral Studies* 43:21 – 31.
- Bawn, Kathleen and Michael Thies. 2003. "A Comparative Theory of Electoral Incentives: Representing the Unorganized under PR, Plurality and Mixed-member Electoral Systems." *Journal of Theoretical Politics* 5(1):5–32.
- Bueno de Mesquita, Bruce, Alastair Smith and Tom LaGatta. 2017. "Group Incentives and Rational Voting." *Journal of Theoretical Politics* 29(2):299–326.
- Calder, Kent E. 1988. *Crisis and Compensation: Public Policy and Political Stability in Contemporary Japan*. Princeton, N.J.: Princeton University Press.
- Carey, John and Matthew Shugart. 1995. "Incentives to Cultivate a Personal Vote: A Rank Ordering of Electoral Formulas." *Electoral Studies* 14:417–39.
- Catalinac, Amy. 2016. *Electoral Reform and National Security in Japan: From Pork to Foreign Policy*. New York, New York: Cambridge University Press.
- Catalinac, Amy. 2017. "Positioning Under Alternative Electoral Systems: Evidence From Japanese Candidate Election Manifestos." *American Political Science Review* forthcoming.
- Cox, Gary and Frances Rosenbluth. 1994. "Reducing Nomination Errors: Factional Competition and Party Strategy in Japan." *Electoral Studies* 13(1):4–16.
- Cox, Gary W. 1987. *The Efficient Secret: The Cabinet and the Development of Political Parties in Victorian England*. Cambridge, U.K.: Cambridge University Press.
- Cox, Gary W. 1990. "Centripetal and Centrifugal Incentives in Electoral Systems." *American Journal of Political Science* 34(4):903–935.
- Curtis, Gerald. 1988. *The Japanese Way of Politics*. New York: Columbia University Press.
- Curtis, Gerald. 1999. *The Logic of Japanese Politics: Leaders, Institutions, and the Limits of Political Change*. New York: Columbia University Press.
- Curtis, Gerald L. 2017. "Japan's Democratic Party doomed to opposition?" *East Asia Forum* .
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.
- Estevez-Abe, Margarita. 2008. *Welfare and Capitalism in Postwar Japan*. New York: Cambridge University Press.
- Fedderson, T. J. 2004. "Rational choice theory and the paradox of not voting." *Journal of Economic Perspectives* 18(1):99–112.
- Ferejohn, John. 1974. *Pork Barrel Politics: Rivers and Harbors Legislation, 1947/1968*. Stanford, California: Stanford University Press.
- Fujimura, Naofumi. 2012. "Electoral incentives, party discipline, and legislative organization: manipulating legislative committees to win elections and maintain party unity." *European Political Science Review* 4(2):147175.

- Fukui, H. and S. N. Fukai. 1999. Campaigning for the Japanese Diet. In *Elections in Japan, Korea, and Taiwan under the Single Non-Transferable Vote*, ed. B. Grofman, S. C. Lee, E. A. Winckler and B. Woodall. Ann Arbor, Michigan: Michigan University Press pp. 121–152.
- Geys, B. 2006. “Rational theories of voter turnout: a review.” *Political Studies Review* 4(1):16–35.
- Hirano, Shigeo. 2006. “Electoral Institutions, Hometowns, and Favored Minorities: Evidence from Japanese Electoral Reforms.” *World Politics* 58:51–82.
- Hirano, Shigeo. 2011. “Do Individual Representatives Influence Government Transfers? Evidence from Japan.” *Journal of Politics* 73(4):1081–1094.
- Horiuchi, Yusaku and Jun Saito. 2003. “Reapportionment and Redistribution: Consequences of Electoral Reform in Japan.” *American Journal of Political Science* 47(4):669–682.
- Horiuchi, Yusaku, Jun Saito and Kyohei Yamada. 2015. “Removing Boundaries, Losing Connections: Electoral Consequences of Local Government Reform in Japan.” *Journal of East Asian Studies* 15:99–125.
- Hrebenar, Ronald J. 2000. The Money Base of Japanese Politics. In *Japan’s New Party System*, ed. Ronald J. Hrebenar. Boulder, Colorado: Westview Press pp. 59–82.
- Jain, Purnendra. 2016. “What’s next after Abes supermajority in the upper house?” *East Asia Forum*.
- Kaihara, Hiroshi. 2007. “The Advent of a New Politics. Effects of the 1994 Revision of the Electoral Law.” *Asian Survey* 47(5):749–765.
- Kohno, Masaru. 1997. “Electoral Origins of Japanese Socialists’ Stagnation.” *Comparative Political Studies* 30(1):55–77.
- Krauss, Ellis S. and Benjamin Nyblade. 2005. “Presidentialization in Japan? The Prime Minister, Media and Elections in Japan.” *British Journal of Political Science* 35(2).
- Krauss, Ellis S. and Robert J. Pekkanen. 2010. *The Rise and Fall of Japan’s LDP. Political Party Organizations as Historical Institutions*. Ithaca, New York: Cornell University Press.
- Krauss, Ellis S., Robert Pekkanen and Benjamin Nyblade. 2006. “Electoral Incentives in Mixed-Member Systems: Party, Posts, and Zombie Politicians in Japan.” *American Political Science Review* 100(2):183–193.
- Lazear, Edward P. and Sherwin Rosen. 1981. “Rank-Order Tournaments as Optimum Labor Contracts.” *The Journal of Political Economy* 89(5):841–64.
- MacLachlan, Patricia. 2004. “Post Office Politics in Modern Japan: The Postmasters, Iron Triangles, and the Limits of Reform.” *Journal of Japanese Studies* 30(2):281–313.
- Maeda, Ko. 2012. “An Irrational Party of Rational Members: The Collision of Legislators’ Reelection Quest with Party Success in the Japan Socialist Party.” *Comparative Political Studies* 45(3):341–365.
- McCubbins, Matthew D. and Frances Rosenbluth. 1995. Party Provision for Personal Politics. Dividing the Vote in Japan. In *Structure and Policy in Japan and the United States*, ed. Peter F. Cowhey and Matthew D. McCubbins. New York: Cambridge University Press pp. 35–55.

- McElwain, Kenneth. 2008. "Manipulating Electoral Rules to Manufacture Single-Party Dominance." *American Journal of Political Science* 52(1):32–47.
- McKean, Margaret and Ethan Scheiner. 2000. "Japan's new electoral system: la plus ca change." *Electoral Studies* 19:447–477.
- Meyer, Stephen A. and Shigeto Naka. 1998. "Legislative Influences in Japanese Budgetary Politics." *Public Choice* 94:267–88.
- Meyer, Stephen A. and Shigeto Naka. 1999. "The Determinants of Japanese Local Benefit-Seeking." *Contemporary Economic Policy* 17(1):87–96.
- Miyake, Ichiro. 1991. Types of Partisanship, Partisan Attitudes, and Voting Choices. In *The Japanese Voter*, ed. Scott C. Flanagan, Bradley M. Richardson, Shinsaku Kohei, Ichiro Miyake and Joji Watanuki. New Haven, Connecticut: Yale University Press pp. 226–264.
- Mizusaki, Tokifumi. 2014. *Sosenkyo Deta Besu. JED-M Deta*. Tokyo, Japan: LDB.
- Mochida, Nobuki. 2001. *Local Government Development in Post-War Japan*. Oxford, United Kingdom: Oxford University Press chapter Taxes and Transfers in Japan's Local Public Finance, p. 85111.
- Noble, Gregory W. 2010. "The Decline of Particularism in Japanese Politics." *Journal of East Asian Studies* 10:239–273.
- Pempel, T. J. 2010. "Between Pork and Productivity: The Collapse of the Liberal Democratic Party." *Journal of Japanese Studies* 36(2):227–254.
- Ramseyer, Mark and Frances Rosenbluth. 1993. *Japan's Political Marketplace*. Cambridge: Harvard University Press.
- Reed, Stephen R. 2009. "Party Strategy or Candidate Strategy? How does the LDP run the Right Number of Candidates in Japan's Multi-Member Districts?" *Party Politics* 15:295–314.
- Reed, Steven R. 2001. *Local Government Development in Post-war Japan*. Oxford, United Kingdom: Oxford University Press chapter Impersonal Mechanisms and Personal Networks in the Distribution of Grants, pp. 112–131.
- Reed, Steven R. 2007. "Duverger's Law is Working in Japan." *Senkyo Kenkyu* 22:96–106.
- Reed, Steven R., Ethan Scheiner, Daniel M. Smith and Michael Thies. 2013. *Japan Decides 2012: The Japanese General Election*. New York: Palgrave Macmillan chapter The 2012 Election Results: The LDP Wins Big by Default, pp. 34–46.
- Reed, Steven R. and John M. Bolland. 1999. The Fragmentation Effect of SNTV In Japan. In *Elections in Japan, Korea, and Taiwan under the Single Non-Transferable Vote*, ed. et al. Bernard Grofman. Ann Arbor, Michigan: Michigan University Press pp. 211–226.
- Reed, Steven R. and Michael Thies. 2001. The Causes of Electoral Reform in Japan. In *Mixed Member Electoral Systems: The Best of Both Worlds?*, ed. Matthew S. Shugart and Martin P. Wattenberg. New York: Oxford University Press pp. 152–172.
- Rosenbluth, Frances and Michael Thies. 2010. *Japan Transformed. Political Change and Economic Restructuring*. Princeton, N. J.: Princeton University Press.

- Scheiner, Ethan. 2005. "Pipelines of Pork: A Model of Local Opposition Party Failure." *Comparative Political Studies* 38:799–823.
- Schwartz, Thomas. 1987. "Your Vote Counts on Account of the Way It Is Counted: An Institutional Solution to the Paradox of Not Voting." *Public Choice* 54:101–21.
- Shirai, Sayuri. 2005. "The Impact of Intergovernmental Transfers in the Japanese Local Government Fiscal System." *Asian Economic Papers* 4(2):26–58.
- Smith, Alastair and Bruce Bueno de Mesquita. 2012. "Contingent Prize Allocation and Pivotal Voting." *British Journal of Political Science* 42:371–92.
- Steiner, Kurt. 1965. *Local Government in Japan*. Stanford, California: Stanford University Press.
- Stokes, Susan C. 2005. "Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina." *American Political Science Review* 99:315–25.
- Takenaka, Harutaka. 2006. *Shusho Shihai*. Tokyo, Japan: Chuo Koron.
- Tatebayashi, Masahiko. 2004. *Giin Kodo no Seiji Keizaigaku. Jiminto Shihai no Seido Bunseki. [The Political Economy of Politician's Behavior]*. Yuhikaku.
- Woodall, Brian. 1996. *Japan under Construction: Corruption, Politics, and Public Works*. University of California Press.
- Yamada, Kyohei. 2016. "From a Majority to a Minority: How Municipal Mergers in Japan Changed the Distribution of Political Powers and the Allocation of Public Services Within a Merged Municipality." *Urban Affairs Review* pp. 1–33.
- Yonehara, Junshichiro. 1986. *Japan's Public Sector: How Government Is Financed*. Tokyo, Japan: University of Tokyo Press chapter Relations between National and Local Governments.