

Pork for Hawks

Pork Barrel Politics and Candidate's Policy Positioning

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Abstract

How are pork barrel politics and policy position-taking of legislators related? The majority of existing literature has analyzed pork-driven and policy-based political competition in isolation from one another. The lack of systematic data on individual political candidates' policy-positioning during the election has also hindered progress in testing the relationship between the two modes of political competition. Leveraging unique survey data on all Lower-House election candidates from Japan under the mixed electoral system, we address this problem by developing independent measures of "effort" and "outcome"-based measures of pork barrel behavior and policy position taking at the individual candidate-level in two policy dimensions (economy and foreign security). We demonstrate that the effect of pork barreling on candidate positioning varies depending on the salience of each issue dimension. Pork barrel incumbents moderate their positions toward the opponents in highly salient issues, but this moderation effect is absent for issues with lower salience. By contrast, challengers facing pork barrel incumbents are more likely to take extreme positions in low salient issues to mobilize ideological voters untapped by the incumbent candidate. The results call on scholars to move beyond the conventional pork vs. policy dichotomy and open new research agendas for more nuanced theorizing about the relationship between programmatic vs. clientelistic electoral competition.

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Politicians in democracies make substantial effort in at least two dimensions to stay in the office: establishing policy platform and expertise and providing constituency services to their districts such as pork barrel projects. The majority of the existing literature, however, has analyzed pork and policy-based political competition in isolation. The two modes of political competition, furthermore, are often assumed as a dichotomy (i.e., programmatic vs. clientelistic) and theorized as a trade-off: parties or individual legislators engage in either pork or policy-based political competition, but not both (Cox 1987; Kitschelt 1990; Cox and Rosenbluth 1995; McCubbins and Rosenbluth 1995; Scheiner 2006; Keefer and Vlaicu 2009; Kitschelt and Wilkinson 2006; Stokes 1963). Consequently, we have a limited understanding of how pork and policy based strategies relate to each other when they co-exist.

Studies in American politics on political candidates' valence advantage and policy positioning directly investigate this relationship, yet they provide opposite predictions and mixed empirical results (Fiorina 1974, Bartels 1991, Londregan and Romer 1993; Groschlose et al. 2001; Ashworth and Bueno de Mesquita 2007; Ansolabehere et al 2001, Burden 2004, Gulate 2004, Griffin 2006; Stone and Simas 2010; Peress 2010; Adams et al. 2011). Studies such as Groschlose (2001) predict that a candidate with a valence advantage converges policy positions toward the opposition's to diminish the salience of the policy-dimension (we refer to this logic as the "trade-off" hypothesis).² Londregan and Romer (1993) predict the opposite, that candidates with valence advantages are more likely to diverge from the opposition candidates as they can afford to express their sincere positions, which tend to diverge from the median voters or the party lines (we refer to this logic as the "sincerity" hypothesis).³

² Adams, Merrill and Groffman 2005; Ansolabehere and Snyder 2000; Feld and Groffman 1991.

³ See Fenno 1978; Bianco 1994; Burden 2004.

A major hurdle to reconciling this debate is the absence of data in two respects. First, the majority of studies on policy positioning use roll-call votes which are available only for candidates who serve in office, not those who lose.⁴ Because losers never have the opportunity to vote on bills, locating winners' and losers' policy positions in a common space has been difficult. Second, measuring valence advantage including pork often poses a challenge. This leaves one of the most extensive debates in electoral politics largely untested.

This paper aims to fill this gulf by using a new data on pre-election candidate survey of the 2005 Lower-House election in Japan and expanding the scope of analysis from uni-dimensional to multidimensional policy competition. Pre-election survey data provides three advantages over the roll-call data. First, it allows us to locate both incumbent and challenger policy positions on a common policy space (Ansolabehere et al. 2001).⁵ Second, when survey data is available for both incumbents and challengers, the response rate is often poor leading to biased results. In this case, because the survey results were published in a Japanese daily with nation-wide circulation before elections, the response rate was very high (91.4%) which remedies the common problem of missing data. That these responses were published across the country immediately before the elections also means that we can be reasonably sure the responses accurately represent campaign positions.⁶

⁴ Exceptions are Ansolabehere, Snyder, and Stewart 2001; Burden 2004; Stone and Simas 2010; Taniguchi 2007.

⁵ This *Todai-Asahi* survey also has a matching voter survey (with a thousand respondents), which would have been a perfect candidate for MRP (multilevel regression and post-stratification) developed and used in Lax and Phillips 2009. Unfortunately, the voter survey only recorded a few demographic variables (education and gender), which does not allow us to conduct MRP. We can, however, calculate the extent to which candidate policy positions within a district converge.

⁶ We are interested in politicians' strategic policy-positioning in the eyes of voters and interest groups rather than their "sincere" positions. We compared our ideal points estimates presented in this paper with the ideal point estimates using anonymous legislator surveys conducted by Muramatsu and Kume (2006) in 2003. The latter does not produce coherent results.

Finally, in parliamentary systems, strategic voting and strong party discipline often make the analysis of roll-call votes less meaningful (Spirling and McLean 2006). Indeed, Japanese legislators frequently report that their policy preferences do not align with their party's (Muramatsu and Kume 2006), yet the majority of floor votes are strictly along party lines. This means that important policy concessions are made before the bill reaches the floor and that survey-based data –i.e., the publicly stated preferences on issue scales – might capture legislator's policy preferences more accurately than roll-call votes.⁷

Using this data, we develop new measures of policy position-taking and pork barrel behavior at the individual candidate level. Unlike expert surveys that often impose a pork vs. policy dichotomy (i.e., experts assess whether party or candidate is policy or pork-oriented), our measures make no assumptions about the relationship between the two theoretical constructs. We investigate whether pork contributes to convergence or divergence of policy platforms⁸ in districts or pork is orthogonal to policy-based competition.

We find that whether pork barrel incumbents moderate their positions toward the opponents' is conditional on the salience of policy issues, especially whether a given issue received a high or low amount of attention during the election. For highly salient issues, such as economic policy issues in the 2005 election, pork-heavy incumbents moderate toward the opposition candidates' positions, confirming the trade-off hypothesis. This pattern, however, does not hold for issues with low salience. Examining security policy issues in the 2005

⁷ Saiegh 2009 also found that ideal points scaled from elite survey data correlate highly with the ideal points scaled from the roll-call votes in Latin America (Saiegh 2009).

⁸ An additional test would be to examine whether candidates converge to the median voter in each district. Data on voter preferences is, unfortunately, unavailable in this case. We address the lack of constituency data by assuming that the median voter is located between the LDP's and DPJ's party median (as opposed to the outside of the two parties' median lines) and examine the candidate positions relative to their parties' median (see Figure 3).

election⁹ we find that the level of pork barreling in a given district is orthogonal to candidates' platform divergence. Challengers facing pork barreling incumbents, however, are more likely to take extreme positions on low salience issues. Extreme issue positioning is an effort to mobilize ideological voters untapped by the incumbents (e.g., security policies in the 2005 election) and this attention-getting positioning by challengers is absent for highly salient issues (e.g., economic issues).

These results suggest that the effect of pork barreling on policy-based competition is more complex than is conventionally thought. Pork barrel politics can lead to the two parties' platform convergence toward a median voter in highly salient issue dimension (e.g., economic policies), yet, pork pushes challengers to take extreme positions away from a median voter on low salient issues.

Our findings have broader implications for three research programs. First, the literature on candidates' valence advantage and policy positioning has progressed in the past decade, yet, empirical tests have lagged far behind the theories. This paper provides one of the first such tests. Moreover, our findings that candidates' behavior varies depending on the salience of policy issues calls for scholars to extend the analysis from uni-dimensional to multi-dimensional policy space.

Second, burgeoning research in comparative politics has analyzed the causes and consequences of programmatic vs. clientelistic electoral competition. Our findings suggest that, in highly salient issues, pork barrel politics can facilitate the Downsian convergence to a median voter by diminishing platform differences in single-member districts. Thus, pork can improve

⁹ As described later in the paper, security was clearly a low salience issue in the 2005 election.

the congruence of positions between candidates and median voters. By contrast, in policy issues with low salience, a high-level of pork encourages challengers to diverge from the party line or a median voter, leading to weaker party coherence and the lack of congruence between candidates and voters. Contrary to the conventional wisdom, then, pork barrel politics are not necessarily detrimental to the development of programmatic and policy-based electoral competition.

Accordingly, we suggest that scholars go beyond a dichotomous conceptualization and coding of political parties, manifestos and voters into programmatic vs. clientelistic types.

Finally, our findings complement emerging studies on Japan linking a new majoritarian electoral system with more policy-based competition (Estevez-Abe and Hikotani 2008; Rosenbluth et al. 2007).¹⁰ Contrary to the conventional wisdom, we demonstrate that whether candidates ran from the single-member district or a closed-list, proportional representation tier had no systematic effects on how closely they toed the party lines. Moreover, our findings suggest that the presence of pork can polarize candidates' positions on security policy through the attention-getting behaviors of challengers, leading to more "extroverted" legislators (Estevez-Abe and Hikotani 2008). Unlike previous studies which focus on the incumbent LDP legislators, however, we find that DPJ challengers facing pork barrel incumbents are the most likely to take extreme and Dovish foreign policy positions.

Pork vs. Policy: Two Dimensions of Electoral Competition

The assumption that a trade-off exists between pork and policy-based electoral competition has been a building block for much of the extant work on electoral competition and party systems (Cox 1987; Carey and Shugart 1995; Kitschelt 2000; Groseclose et al. 2001;

¹⁰ These studies have looked at the LDP legislators' issue attentions to security issues, rather than their policy positions.

Keefer and Vlaicu 2008; Hicken 2008). Although the micro-foundation of this trade-off has rarely been made explicit, there are two assumptions employed in the literature: (i) *voters' tastes* (i.e., demand-side) and (ii) *electoral incentives* (i.e., supply-side).

Voters' Tastes

The first assumption is that voter preferences dictate the legislators' choice between engaging in pork and policy-based electoral competition. According to this view, voters have differing tastes or needs for their preferred type of representative: politicians who can bring pork to the district, or legislators with well-defined issue positions that align with their preferences (Groseclose et al 2001; Londregan and Romer 1993; Scheiner 2006; Shinada 1998; Stokes 1963; Stokes 2005; Serra 2010).

In the literature on the U.S. Congress, Groseclose et al. (2001) models voters' evaluation of candidates in two dimensions, policy and valence, to be a trade-off. Voters attach relative weights to evaluating candidates' policy positions or valence. When voters care more about valence characteristics, a candidate with a valence advantage converges toward the opposition's to diminish the salience of the policy-dimension and to increase the relative importance of the valence dimension (we refer to this logic as the "trade-off" hypothesis). Londregan and Romer (1993) build their model on a similar trade-off yet predict the opposite outcome: when voters care more about constituency service, e.g, pork, they are more willing to sacrifice ideal point proximity with the candidate to derive pork benefits. Knowing the voters' willingness to sacrifice, candidates are more likely to express their sincere positions, which tend to diverge from the median voters or the party lines (we refer to this logic as the "sincerity" hypothesis). The model thus predicts that incumbency advantage and voter preferences for constituency

service both lead to more polarization of candidates' positions. While this literature breaks new ground by modeling how two dimensions of electoral competition relate to each other, empirical tests of these predictions have lagged far behind theories due to the lack of data discussed previously.

Empirical studies of constituents' influence on legislator's pork or policy-orientation in campaign behavior have largely been confined to explaining the levels of one of the two dimensions (pork or policy), and not the relationship between the two. Stokes (2005), for instance, finds that poor and smaller communities in Argentina are more likely to be bought off by the distribution of targeted goods such as bags of rice and beans and public sector jobs. Using public opinion surveys in Japan, Scheiner (2006) finds that rural voters are more likely to prefer pork oriented representatives, while urban counter-parts are more likely to prefer representatives with national policy concerns.

However, there are two problems with the empirical work linking legislators' pork vs. policy-orientation and voter preferences. First, the majority of the empirical support for this link comes from one of two sources: 'revealed' preferences through voting behavior (Burden 2004; Taniguchi 2005), or, public opinion surveys that are dichotomously framed (Scheiner 2006:82).¹¹ Conceptualizing voting behavior as revealed preferences with regards to a pork barrel legislator or party poses a potential over-identification issue: pork barreling or clientelism might be only a partial determinant of the electorate's voting behavior. Opinion surveys can also be problematic because they impose the dichotomy, rather than eliciting it from voters. If public opinion surveys were to allow voters to express independent preferences with regards to pork barrel and

¹¹ For instance, Japan Election Studies II (1993) asked voters: "all else equal, would you cast a ballot for a candidate who dedicates him or herself primarily to national and foreign affairs or one who devotes him or herself to activities involving the protection of local interests?" (discussed in Scheiner 2006: 82).

policy positions of legislators, would they not want a representative that generates pork barrel projects *and* contributes to the realization of their preferred policy? A more reasonable theory is that voters evaluate both a legislator's policy positions and pork potential (Calvo and Murillo 2004; Huber and Ting 2009).

Electoral Competition and Platform Divergence

Competing theories associate levels of electoral competition with platform divergence. The 'marginality hypothesis' developed by Fiorina (1973) and tested by others (Fiorina 1974; Kuklinski 1977; Bartels 1991; Gulati 2004; and Griffin 2006) suggests that candidates moderate their positions to get closer to median voters in more electorally competitive districts, while polarization occurs in safe seats because the safety of seats allows incumbent candidates to express more sincere positions, which tend to be more extreme than that of median voters in a district ("sincerity" hypothesis). Others argue that in close races candidates need to motivate their base, forcing them to take extreme positions.

There is also a strong consensus among scholars that the multimember district system (MMD) is associated with the prevalence of pork-based electoral competition and the lack of policy-based campaigns as legislators from the same party must compete for the same seat (Carey and Shugart 1995; Cox 1990; Cox and Rosenbluth 1995; Hirano 2006; Tatebayashi 2004; Scheiner 2006).¹² On the other hand, SMD and closed-list PR systems, adopted in Japan since 1996 election, are considered to encourage programmatic political competition (Tebellini and

¹² Exceptions are Tatebayashi (2004) which suggests that the LDP legislators divided votes along the two distinct equilibrium under MMD system; along policy specialization ("policy") or geographic divisions ("pork") (Hirano 2006). Another is a series of studies on "policy tribe politicians" that specialized in a policy issue (*zoku giin*). See Inoguchi and Iwai (1987).

Persson 2003; objection to the programmatic effect of PR, see Rogowski and Kayser 2002; Bawn and Thies 2003 and Scheiner 2006).

The problem with these electoral theories, however, is again that they generally measure legislators' performance in one of the two dimensions, pork or policy. These studies also tend to link electoral systems with outcomes observed at the national-level, and thus do not allow scholars to test the relationship between the two modes of competition in districts when they coexist. This poses a particular challenge to the study of mixed electoral systems, which combine elements of proportionality and majoritarian systems (Ferrara and Herron 2005; Whitefield 2000). In sum, the two micro-foundations of pork vs. policy trade-off pose ambiguities in their logic and empirical tests and call for a more systematic test of the relationship between the two modes of competition.

Empirical Strategy

We use a pre-election survey of all candidates for the lower house of the Japanese legislature conducted by the University of Tokyo-Asahi Daily in 2005. The survey asked legislators and candidates their positions on twelve major policy issues focusing on the areas of security (constitutional revision, nuclear arming, and the U.S.-Japan security treaty), economy (small government, inequality, lifetime employment system, decentralization, and consumption tax) and society (gender equality).¹³ Politicians gave their position on each issue using a five-point scale: agree, more or less agree, can't say one or the other, more or less disagree, and

¹³ See appendix for exact wording of survey instruments.

disagree. The response rate was high (91%) yielding the total of 1048 candidates¹⁴ participating the survey.¹⁵

In addition to the rare advantages of our data set described previously, the 2005 election provides an ideal opportunity to test hypothesis relating electoral systems to pork and policy positioning incentives. First, post-1994 Japan is a laboratory of electoral systems: for the lower-house, it employs a mixed electoral system which utilizes both a closed-list proportional representation (PR) system and single-member majoritarian districts (SMD). This system is expected to create incentives to engage in both pork and policy-based competition (Bawn and Thies 2003; Scheiner 2006; Shugart and Carey 1995). Within-country variance of electoral rules allows us to conduct a finer test of the effect of electoral systems on individual legislators' policy-positioning and pork barrel behavior.

Second, the Japanese case allows us to address the issue of reverse causality inherent in the survey-based studies, i.e., how to distinguish whether candidates adjust their policy positions to the presence of pork in a district, or, they adjust their pork allocation to candidates' policy positioning (Green 2007). Because Japan's two-party competition came to fruition only after the 2003 Lower-House election, (i.e., immediately before the 2005 election that this paper analyzes)¹⁶ but the pattern of pork allocation was stable between 2003 and 2005 elections

¹⁴ The total number of surveys returned was 1131, however of those returned only 1048 answered a sufficient number of questions to be included in our analysis.

¹⁵ We interviewed three LDP legislators (two seniors and one junior) before the 2009 election and confirmed that legislators themselves are likely to fill out the surveys when they are informed that the survey results will be published in the media with the identities of the respondents. Even the case in which secretaries fill out the survey, legislators are likely to double-check the contents before returning them. Interviews conducted by the author in Tokyo, June 2009.

¹⁶ The two major parties, the Liberal Democratic Party and Democratic Party of Japan occupied 86% of the Lower-House seats as a result of 2003 election. The national media also reported this election as the beginning of two-party competition. *Asahi Shimbun*, November 10, 2003 and *Shimbun Akahata*, November 15, 2003.

(Rosenbluth, Saito and Yamada 2010), we can safely assume that the pattern of pork allocation preceded the candidates' policy positioning.

Finally, the 2005 was called "Postal Reform Election" due to the clear policy divisions within the LDP to support vs. oppose privatization of postal service (Estevez-Abe 2008; Nemoto et al. 2009). If anything, this election should provide the opportunity to test how pork barrel politics affects candidates' policy-positioning.

Scaling Procedure

We employ a scaling technique that uses twelve issue scale responses to map each individual's issue position onto a two-dimensional common space with the other respondents ("ideal point estimation"). A major challenge in placing all individuals into a common space – originally observed by Aldrich and McKelvy (1977) – is that each individual may vary, not only in their preferences, but also in their perceptions of the issue space ("anchoring issues", see King et al. 2004). To solve this problem, Aldrich and McKelvy (1977) propose a simple parametric assumption about the nature of perceptual bias, then employ this assumption to derive a mathematical technique – similar to principal components analysis – which, given a set of preference data, provides both the locations of the respondents and the 'anchored' locations of the stimuli as output.¹⁷ We employ Poole's (1998b) generalization¹⁸ of the original Aldrich and McKelvy (1977) method, allowing for multiple dimensions and missing data in the input matrix.

¹⁷ King et al (2004) note the efficacy of this approach, and Saiegh (2009) finds that estimates generated using the Aldrich and McKelvy (1977) method to scale expert surveys are convergent with estimates from actual vote data for legislatures in several Latin American countries.

¹⁸ An MS-DOS compatible version of the BLACKBOX program is provided by Keith Poole and available at <http://voteview.ucsd.edu:21000/wfl/BLACKBOX.EXE>. Instructions for use are provided in Poole (1998a and 1998b).

The summary statistics for the scaling of the 2005 survey are shown in Table 1.¹⁹ The first dimension corresponds to foreign policy questions, while the second dimension captures variation in economic policy issues.²⁰ Bootstrapped standard errors for the stimuli locations are shown in parentheses and provide another indicator of the reliability of the results.²¹ [Table 1 about here]

Figure 1 demonstrates low salience of the first dimension issues (i.e., security policies) and high salience of the second dimension issues (i.e., economic policies) in the 2005 election.²² In a nationally-representative survey conducted by University of Tokyo-Asahi Daily team after the 2005 election, respondents were asked to choose policy issues that were important for them in determining votes.²³ Among the twelve issues, five issues of highest salience were: postal privatization reform (54%), welfare policy (54%), tax policy (48%), fiscal reconstruction (i.e., national debt) (36%) and economy (35%). All the five issues of high salience concerned the role of government in domestic economy.

¹⁹ We also checked the robustness of our results by using the 2003 survey data. The results are very similar to the results for the 2005 survey. Despite the popular conjecture that the 2005 election was “single-issue election” on postal privatization reform, public opinion scholars in Japan have found that the issue attention and salience was not single-peaked at all, as also evinced by our Figure 1. See Hirano 2006.

²⁰ A third dimension captures legislators’ attitudes towards becoming a permanent member of UN Security Council and is entirely orthogonal to the hawk vs. dove dimension of security and the economic policy division. Dropping this dimension has only negligible effects on the first and second dimension coordinates, and thus our analysis focuses on policy-positioning in two-dimensions not three.

²¹ Details on the bootstrap program are in Poole (1998b).

²² Why did the first dimension issues receive low attention and the second dimension issues receive high attention during the election? Japanese legislators have long considered policy position-taking in security policy to be ‘the riskiest move’ in the election campaigns and fiercely avoided the PARC and committee assignments on National Security. They fear that the divisive nature of the policy would risk alienating median voters (Inoguchi and Iwai 1987:134, 209). This means that the majority of legislators do not make security policies as their individual campaign platform despite strong division among voters and parties over the issue. This might account for the puzzling combination of high individual-level attitudinal coherence found in the survey and the perceived lack of policy debates in Japanese politics, although systematically probing this is beyond the scope of this paper. Otake 1994 also provides a similar account.

²³ Todai-Asahi team could have matched policy issues asked in the candidate survey with the voter version of the survey, but they did not.

By contrast, issues with lowest salience were: Japan's joining the UN security council (5%), decentralization (8%), Japan-U.S. relations (13%), Japan-China/Japan-South Korea relations (18%), and constitutional revision (22%).²⁴ Except for the issue of decentralization reform, the low salience issues concerned Japan's foreign and security policy.

The results of the multi-dimensional coordinates are shown in Figure 2. The origin (0,0) indicates the mean legislator, with higher numbers representing more extreme positions. The two-dimensional coordinates for each politician thus represent their policy positions on foreign and economic policy issues relative to the rest of the survey respondents. Overall, the two dimensional model captures legislators' policy positioning quite well; an R^2 of 0.730.²⁵ [Figure 2 about here]

Substantively, the two ideological dimensions account for 60% to 73% of legislators' responses to 12 policy issues; this indicates that Japanese legislators' attitudinal structures are highly coherent. Furthermore, if we look at individual candidates' platforms in *each district*, in 75% of the total 300 single-member districts, the LDP and the largest opposition party Democratic Party of Japan's candidate positions diverge in a systematic and consistent manner (i.e., a LDP candidate prefers a smaller government than a DPJ candidate and a LDP candidate is more hawkish than a DPJ candidate)(Taniguchi 2005). [Figure 3 about here]

In only 25% of SMD districts where LDP and DPJ candidates were the top two vote-getters do positions switch, or converge to the extent that voters are unlikely to differentiate the

²⁴ This is not to deny that legislators have increased their attention to foreign policy issues after the electoral reform as argued by Rosenbluth et al. 2007 and Estevez-Abe and Hikotani 2008. Compared to domestic economy issues, foreign policy issues still receive scant attention from voters during the election.

²⁵ As a robustness test, we checked for the pair-wise correlation of the 2003 and 2005 common space coordinates (for legislators who responded to both surveys) in the first and second dimensions. They are $r=0.801$ and $r=0.516$ respectively.

two party candidates' platforms (ideal point distance smaller than 0.1). This finding challenges the Downsian prediction that under a single-member district system, the two party candidates converge to a median voter. This further highlights the central question of this paper: How do legislators' position-taking relate to pork barrel behavior at the district-level?

Measures of Policy Positioning

Following Kitschelt's (2007:323) proposed indicators of programmatic political competition,²⁶ we develop two measures of policy position-taking (or, the lack thereof), which we call *Platform Divergence* and *Party Directional Distance*. Each measure captures a different aspect of policy-based political competition.

Platform Divergence is the distance between the top two candidates' ideal point estimates in a given single-member district. This measure is calculated separately for each of the two policy dimensions. The divergence measure seeks to capture whether "positions on salient issues systematically diverge." (Kitschelt and Wilkinson 2007:323) As the results from the Asahi survey were published in a national newspaper, this should be an accurate estimate of the overall campaign platforms taken by each candidate. *Platform Divergence* should provide a good indicator of whether candidates have a high level of policy divergence or whether they converge to the median voter.

Party Directional Distance is the candidate's ideal point distance from their party line (i.e. the red and green vertical lines indicating DPJ and LDP's party median respectively in

²⁶ In addition to these two dimensions, Kitschelt (2007) lists (3) legislators' ability to self-locate on an ideology scale, (4) legislators' congruence with voters, and (5) the mapping of partisan cycles with actual policy cycles. We focus our analysis on the first two dimensions on his list as they are more critical conditions for programmatic competition than the latter three. We also conducted the analysis on policy knowledge by using the frequency of centrist positions ("can't say one or the other") for 12 questions. The pork is not systematically associated with the frequency. Moreover, we conducted the analysis on candidates' self-placement on an eleven-point ideology scale (ranging from 1 to 11). Pork had no systematic effects on the ideology placement. The results are available at reviewers' request.

Figure 3). *Party Directional Distance* takes a positive value when a candidate takes a more extreme position than the party line, and it takes a negative value when a candidate takes a more moderate position than the party line (i.e., toward the opposition's party line). This is calculated for each of the two dimensions separately.

Measuring Pork-barrel Behavior

We generate two measures of pork-barrel behavior. The first is conventionally used: the subsidy per capita allocated from the central government to municipalities.²⁷ We aggregate per capita subsidy allocation data available at the municipality level into single-member electoral districts (*Subsidy PC*). While this measure is widely used to proxy for levels of pork allocations (Ansolobehere and Snyder 2001; Horiuchi and Saito 2003), a substantial limitation is that it measures the *outcome* of pork barrel bargaining as opposed to legislators' *efforts* to bring in pork (Keefer and Khemani 2009). One potential problem with an outcome-based measure is that some transfers are formula-based and legislators could have obtained comparatively high levels of per capita subsidies without spending much time and resources. We thus need a good measure for 'effort' that is independent from policy outcomes.

One of our two measures for legislator effort is the residual (e_i) from the baseline demographic and economic model estimating the level of subsidy allocation to a district i :

$$Subsidy\ PC_i = \beta_1 * (\text{mean income})_i + \beta_2 * (\% \text{ over } 65)_i + \beta_3 * (\% \text{ urban})_i + \beta_4 * (\% \text{ unemployed})_i + e_i$$

²⁷We test the robustness of our results by using two measures of Subsidy per capita. One is national expenditures (*kokko shishitsu kin*) per capita in a district (*Subsidy PC*) and another is a sum of national expenditures (*kokko shishitsu kin*), local general grant (*chiho futsu koufuzei*), local special grant (*chiho tokubetsu koufuzei*), and prefectural-level transfers to municipalities (in per capita)(*Total_SubsidyPC*).

The estimated residual (*Effort*) is the amount of per capita subsidy allocation unexplained by the economic and demographic characteristics of district i .²⁸ Positive residuals mean that a district receives a higher level of subsidies per capita relative to other districts given its demographic and economic characteristics, while a negative residual indicates a district receives less. We use this residual as a proxy for a legislator's pork barrel effort.

Alternative Hypotheses and Controls

We test and rule out alternative mechanisms that can affect political candidates' policy-positioning and capacity to bring pork to constituents. First, district characteristics might determine both an incumbent candidate's effort to bring pork and candidates' policy-positioning. For instance, rural districts have been more dependent on the government's public work projects in Japan and the LDP candidates representing rural districts are more likely to be senior and ideologically conservative. To address this potential omitted variable bias, we include the battery of district-level controls.

Tax Income PC: following Jinno's calculation for Mainichi Daily (2007), mean income calculated from tax revenues from resident income tax divided by the number of taxpayers in the district.

Percent Urban: percentage of urban population per total district population.

Percent Over 65: percentage of population aged over 65 per total population.

Percent College: percentage of people over age 30 with college or post-college degrees.

Percent Farmers: percentage of labor force engaged in agriculture, fishery and forestry.

²⁸ Rosenbluth, Saito, and Yamada (in works) have demonstrated that subsidy allocation to municipalities has shifted from (i) favoring rural to urban, and (ii) favoring core to swing districts after the electoral reform of 1994. Our baseline model for calculating the residuals incorporates this insight.

Export: the logged values of manufacturing exports in a district using manufacturing shipping data.

Second, the literature has suggested that the level and nature of electoral competition is correlated with both incumbents' needs to bring pork and candidates' policy-positioning (Fiorina 1973). To address this, we include the following co-variates.

Margin: margin of victory in a given single-member district in the 2003 election²⁹.

PR: one for legislators elected on or candidates run on a PR list, zero otherwise.

Zombies: one for legislators who lost in SMD but were revived on the PR list.³⁰

Opponent's Positioning: a given candidate's opponent's ideal point in each policy dimension.

Rebel: one for a single-member district where a former incumbent LDP legislator voted against the postal reform legislation and lost the LDP nomination for the 2005 election, zero otherwise.³¹

We interact pork barrel variables with the LDP incumbency dummy (substantively, this is because only LDP incumbents can claim credit for pork delivered in during the previous electoral cycle) and estimate the following equations for ideal point divergence and distance from the party mean for a district or legislator i using OLS.³²

$$\text{Policy Positioning}_i = \text{Pork}_i + \text{Party}_i + \text{Pork} * \text{LDP Incumbency} + \text{District Characteristics}_i + \text{Electoral Incentives}_i + e_i$$

Results

²⁹ Where s_1 is the vote share of the winner and s_2 is the vote share of the first runner-up, we calculate the margin (*Margin*) as $\text{Margin} = (s_1 - s_2) / (s_1 + s_2)$.

³⁰ See Pekkanen et al. 2006.

³¹ See Nemoto et al. 2009 for the details of this process.

³² OLS is chosen following Poole (1998), McCarty, Poole, and Rosenthal (2006).

The results presented in Tables 2 and 3 demonstrate that (i) pork barrel districts with LDP incumbents exhibit greater platform convergence on economic issues, and (ii) that pork has no systematic effects on candidates' platform divergence in security issues. We discuss specific results below.

Platform Divergence in Single-Member Districts

Table 2 shows the results for the *Platform Divergence* of position taking in the highly salient, economic policy dimension. On the economic issues, the LDP incumbent candidates in districts with higher levels of pork (e.g., subsidy per capita) are more likely to moderate their positions and converge to the opposition's. The closer races also result in closer issue positions between the top two candidates lending support to the marginality hypothesis (Fiorina 1973). Finally, *LDP incumbency* itself is associated with higher levels of divergences than districts with non-LDP incumbency. Figure 4 visualizes the substantive impact of pork on the two-party candidates' platform divergence on economic issues and Figure 5 visualizes the substantive impact of margin of victory on the two-party candidates' platform divergence. The results on economic issues thus lend support to a trade-off relationship between pork and policy-based electoral competition.

Table 3 demonstrates that for security policy issues (i.e., low salience issues), pork barrel politics have no systematic effects on candidates' platform divergence in a district. Policy positions are also invariant to changes in the electoral climate such as the margin of victory in the previous election. The presence of an LDP incumbent, on the other hand, is associated with further platform divergence in a district and is significant at the 90% level in almost all models. For the base model, races with an LDP incumbent have an expected platform divergence 0.167

than when there is no LDP incumbent. The substantive impact of *LDP incumbency* on security divergence is large as the mean level of platform divergence is only 0.264 on the security dimension. The results on security issues disconfirm the trade-off and the sincerity hypotheses, but present another question: was it the extreme positioning of the LDP incumbents or the DPJ challengers that contributed to the platform divergence in the LDP incumbent districts?

Table 4 provides a partial answer to this question. We model an alternative measure of policy-positioning: a candidate's policy distance from the party means (see our discussion on page 17 regarding *Party Directional Distance*). The models in Table 4 use a similar set of covariates as Tables 2 and 3. We find that in pork heavy districts DPJ candidates tend to take more extreme positions (i.e. further to the left of the DPJ party median) on security issues, while there is no relationship between pork and *Party Directional Distance* for LDP candidates. Sub-setting the data into separate models for incumbents (Model 2) and challengers (Model 3) reveals that DPJ incumbents appear to be driving this attention-getting effect. Among the challengers, however, LDP challengers appear to be slightly more extreme than their party mean as compared to DPJ challengers.³³

This finding contradicts the trade-off and the sincerity hypotheses. The polarization in candidates' positions occurs in pork-heavy districts, disconfirming the trade-off hypothesis. This polarization, however, occurs not due to the LDP candidates with pork advantage being able to "afford" to take sincere positions. Rather, the polarization occurs as a function of DPJ candidates' (with less access to pork) strategy to mobilize ideological voters who are untapped

³³ There are 174 DPJ incumbents running for office in our sample.

by the incumbent party (e.g., voters located outside of the DPJ's party median line – see Figure 3).³⁴

Table 5 shows the results for how variations in electoral systems affect candidates' policy-positioning from the party line. The results suggest that the LDP and DPJ candidates running from different electoral rules (SMD, PR and Zombies) do not differ in their policy positions from the party lines. The results are robust across different measures of *Party Distance* and for both economic and security issues.³⁵ The results are surprising given the conventional wisdom that candidates elected from a closed list PR system are more likely to toe the party line as they are solely depend on the party's ranking of the candidates. Zombies—candidates who ran and lost under SMD but were revived in PR—do not appear to differ from other SMD or PR candidates, either.³⁶ Variables *LDP* and *DPJ* indicate the relative cohesiveness of the two parties. The LDP incumbents are closer to the party line than DPJ incumbents in security issues, but this effect is absent for economic issues—this is likely the result of the high partisan salience of security issues.

Conclusion

Using surveys of political candidates for the Lower-House election of 2005 in Japan, this paper has analyzed the relationship between two dimensions of political competition, pork vs. policy-based competition. Our contribution is three-fold.

³⁴ Hicken (2004) discusses this effect in the context of Thailand.

³⁵ In Table 5, columns titled “Median Dist” summarize the results of estimating a candidate's ideal point distance from the median district (i.e., a median between the two vertical lines indicating party means for the LDP and DPJ), columns titled “Party Dist” summarize our estimates for a candidate's ideal point distance from the party's mean (the vertical line), and columns “Directional PD” summarize our estimates for a candidate's ideal point distance from the party mean and takes a negative value if a candidate's location is inward from the party line, and takes a positive value if it is outward from the party line.

³⁶ See Pekkanen, Nybrade and Krauss 2006.

First, we demonstrate that candidates' valence advantage (i.e., pork) has varying effects on policy-based electoral competition in high vs. low salient issues. The literature on candidates' policy positioning and valence advantage has blossomed in the past decade, yet, they have only considered a uni-dimensional issue space. Using a multi-dimensional scaling technique, we have shown that pork has two distinct effects on candidates' policy-positioning: it moderates incumbents' positions toward the opponents on high salience issues, and encourages challengers to take extreme positions on low salience issues.

Second, in the field of comparative politics, pork barrel politics has often been considered as something inherently detrimental to the development of policy-based electoral competition and programmatic party systems. We have provided one of the first micro-level tests of this claim and demonstrated that the effect of pork on policy-based electoral competition varies across issue areas. Our findings have important implications for empirical research, which often employs a dichotomous coding scheme for party manifestos and for the framing of public opinion survey questionnaires. We suggest alternative coding and framing schemes that allow coders and survey respondents to independently assess legislators' performance in pork and policy dimensions. Furthermore, our findings highlight the importance of disaggregating "programmatic-ness" into several distinct aspects such as platform divergence, congruence with a median voter and party coherence. We have shown that these elements do not necessarily highly correlate either conceptually or empirically.

In conclusion, we suggest several limitations of our study and fruitful avenues for future research. First, we have used self-reported policy positions of legislators that were published in a widely subscribed daily newspaper. One could argue that "talk" may be cheap—i.e.,

legislators' true policy positions might differ from their self-reported positions. Comparing an anonymous legislator survey or behavioral indicators of revealed preferences with published indicators like the Asahi survey would be a promising line of research. Second, in order to test more accurately the relationship between pork barrel and policy position-taking, we can exploit legislators who switch parties or districts as a quasi-experimental opportunity (Desposato and Scheiner 2008).

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Table 1: Fit Statistics By Issue—2005 Asahi Survey, All Candidates
(Bootstrapped Standard Errors in Parentheses)

Issue	n_j	\hat{c}_j	\hat{w}_1	\hat{w}_2	\hat{w}_3	R^2		
						1	2	3
DEFENSE	1032	3.41 (0.04)	4.11 (0.04)	-0.36 (0.17)	0.07 (0.21)	0.845	0.847	0.847
TREATY	1039	3.48 (0.04)	3.79 (0.04)	0.01 (0.14)	-0.44 (0.38)	0.811	0.81	0.812
ATTACK	1029	3.69 (0.04)	3.43 (0.06)	-0.88 (0.17)	0.18 (0.28)	0.708	0.726	0.727
UN	1034	2.04 (0.04)	2.13 (0.07)	1.22 (0.24)	-5.11 (1.45)	0.302	0.373	0.891
N KOREA	1040	3.22 (0.04)	3.65 (0.06)	0.34 (0.21)	-0.47 (0.44)	0.731	0.735	0.739
COLLECTIVE SD	1025	3.8 (0.04)	3.52 (0.08)	-1.3 (0.24)	0.57 (0.72)	0.665	0.7	0.704
SMALL GOVT	1019	3.59 (0.04)	3.21 (0.07)	0.75 (0.24)	0.27 (0.87)	0.646	0.658	0.661
LIFETIME	1036	2.52 (0.03)	-1.73 (0.1)	-2.22 (0.26)	-0.14 (1.18)	0.292	0.469	0.477
PUBLICEN	1021	2.68 (0.03)	-0.76 (0.08)	-3.85 (0.17)	-1.12 (0.62)	0.05	0.567	0.623
KEYNES	1021	3.4 (0.03)	-0.22 (0.09)	-4.47 (0.23)	-0.87 (0.97)	0.003	0.645	0.68
SAFETY	1038	3.61 (0.03)	3.26 (0.06)	-0.95 (0.24)	-0.06 (0.79)	0.685	0.707	0.708
FOREIGN	1040	2.22 (0.04)	-3.42 (0.09)	0.53 (0.38)	-2.75 (1.99)	0.61	0.626	0.727

Table 2. Platform Divergence between LDP & DPJ: Economic Policy Dimension

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pork & Credit Claiming							
Subsidy PC	0.487 (0.365)	0.546 (0.357)	0.488 (0.365)				
Total Subsidy				0.172* (0.0932)	0.141 (0.105)		
Effort						0.492 (0.361)	
Total Effort							0.121 (0.106)
Pork							
LDP Incumbent * Subsidy PC	-0.897** (0.454)	-0.842* (0.443)	-0.888* (0.451)				
LDP Incumbent * Total Subsidy PC				-0.0992 (0.109)	-0.110 (0.113)		
LDP Incumbent * Effort						-0.891** (0.452)	
LDP Incumbent * Total Effort							-0.0376 (0.131)
Electoral Incentives							
Margin	-0.275** (0.131)	-0.265** (0.122)	-0.279** (0.130)	-0.260** (0.122)	-0.273** (0.130)	-0.268** (0.122)	-0.261** (0.122)
LDP Incumbent	0.137** (0.0624)	0.127** (0.0601)	0.137** (0.0623)	0.0657 (0.0498)	0.0737 (0.0530)	0.0314 (0.0291)	0.0336 (0.0293)
District SES Variables							
Tax Income PC	-0.0385 (0.169)	-0.0820 (0.0779)		0.00182 (0.0903)			
Percent Over 65	0.353 (0.535)		0.420 (0.447)		0.272 (0.455)		
Percent Urban	0.0620 (0.0575)		0.0563 (0.0517)		0.0534 (0.0520)		
Unemployment	1.670 (1.254)		1.744 (1.208)		1.581 (1.223)		
Percent College	-0.125 (0.263)		-0.152 (0.234)		-0.0349 (0.279)		
Export	-0.00701 (0.0119)		-0.00657 (0.0117)		-0.00486 (0.0118)		
Constant	0.0829 (0.291)	0.306*** (0.112)	0.0247 (0.138)	0.204 (0.130)	0.0545 (0.137)	0.269*** (0.0225)	0.266*** (0.0228)
Observations	213	225	213	225	213	225	225
R^2	0.074	0.043	0.073	0.044	0.064	0.039	0.033

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3. Platform Divergence between LDP & DPJ: Security Policy Dimension

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pork & Credit Claiming							
Subsidy PC	0.707 (0.443)	0.723* (0.437)	0.712 (0.446)				
Total Subsidy				0.129 (0.114)	0.218* (0.128)		
Effort						0.676 (0.443)	
Total Effort							0.199 (0.130)
Pork							
LDP Incumbent * Subsidy PC	-0.967* (0.551)	-0.745 (0.542)	-0.870 (0.553)				
LDP Incumbent * Total Subsidy PC				-0.0876 (0.134)	-0.144 (0.137)		
LDP Incumbent * Effort						-0.857 (0.555)	
LDP Incumbent * Total Effort							-0.221 (0.161)
Electoral Incentives							
Margin	0.0749 (0.159)	0.0642 (0.149)	0.0322 (0.159)	0.0662 (0.149)	0.0387 (0.159)	0.0620 (0.149)	0.0636 (0.150)
LDP Incumbent	0.167** (0.0757)	0.129* (0.0735)	0.167** (0.0763)	0.0735 (0.0611)	0.118* (0.0645)	0.0478 (0.0357)	0.0528 (0.0358)
District SES Variables							
Tax Income PC	-0.407** (0.205)	-0.125 (0.0953)		-0.0829 (0.111)			
Percent Over 65	0.185 (0.649)		0.888 (0.547)		0.722 (0.553)		
Percent Urban	0.118* (0.0698)		0.0577 (0.0633)		0.0552 (0.0632)		
Unemployment	1.090 (1.520)		1.874 (1.478)		1.710 (1.489)		
Percent College	0.643** (0.319)		0.357 (0.287)		0.581* (0.340)		
Export	-0.0190 (0.0144)		-0.0143 (0.0143)		-0.0128 (0.0143)		
Constant	0.410 (0.353)	0.293** (0.137)	-0.205 (0.169)	0.280* (0.160)	-0.186 (0.166)	0.224*** (0.0276)	0.219*** (0.0279)
Observations	213	225	213	225	213	225	225
R^2	0.097	0.037	0.080	0.031	0.081	0.027	0.026

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Determinants of Legislator's Location from Party Mean

	Both	Incumbents	Challengers
Pork			
DPJ Subsidy PC	0.576** (0.231)	0.690** (0.279)	0.382 (0.419)
LDP Subsidy PC ¹	0.200 (0.243)	0.456 (0.332)	-0.209 (0.371)
LDP	0.0449 (0.0414)	0.00244 (0.0528)	0.132* (0.0741)
Electoral			
Margin	0.0897 (0.0768)	0.133 (0.110)	0.150 (0.135)
Opp. Security Position	-0.0466 (0.0454)	-0.0180 (0.0574)	-0.0715 (0.0773)
District			
Tax Income PC	-0.000460 (0.0381)	-0.0217 (0.0471)	0.0218 (0.0667)
Percent College	-0.00213 (0.314)	0.211 (0.391)	-0.472 (0.548)
Percent First Industry	0.0665 (0.279)	0.00331 (0.376)	0.124 (0.423)
Export	-0.0151* (0.00853)	-0.00858 (0.0113)	-0.0244* (0.0131)
Rebel District	-0.0464* (0.0261)	0.00461 (0.0428)	-0.0854** (0.0356)
Constant	-0.0723 (0.116)	-0.0320 (0.146)	-0.104 (0.198)
Observations	492	304	188
R-squared	0.038	0.047	0.075

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

¹We calculate a model with Subsidy PC and Subsidy * LDP interaction. The table reports the coefficient for the Subsidy, β_1 , which is the marginal effect for a DPJ candidate. LDP candidate reports the marginal effect of Subsidy for an LDP candidate β_1 plus the interaction coefficient β_2 , with a standard error for the marginal effect with the variance calculated as $Var(\beta_1) + Var(\beta_2) + Cov(\beta_1, \beta_2)$.

Table 5: Determinants of Legislator's Distance from Party Mean

	Security Issues			Economic Issues		
	Median Dist ¹	Party Dist ²	Directional PD ³	Median Dist ¹	Party Dist ²	Directional PD ³
LDP ⁴	0.119*** (0.0111)	-0.0647*** (0.00922)	-0.00445 (0.0153)	-0.0210* (0.0108)	0.00161 (0.0105)	0.000989 (0.0175)
Zombies	0.00665 (0.0144)	0.0105 (0.0119)	-0.0240 (0.0198)	0.00220 (0.0140)	0.0105 (0.0136)	0.00175 (0.0226)
PR	0.0318 (0.0241)	0.0148 (0.0200)	0.0361 (0.0331)	-0.0139 (0.0235)	-0.0146 (0.0227)	-0.00855 (0.0379)
Incumbent	-0.00591 (0.0113)	-0.00110 (0.00942)	0.000818 (0.0156)	-0.00759 (0.0111)	-0.00984 (0.0107)	0.0207 (0.0178)
Constant	0.191*** (0.0110)	0.172*** (0.00913)	0.00395 (0.0151)	0.192*** (0.0107)	0.169*** (0.0104)	-0.0126 (0.0173)
Observations	589	589	589	589	589	589
R-squared	0.180	0.081	0.005	0.009	0.003	0.003

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

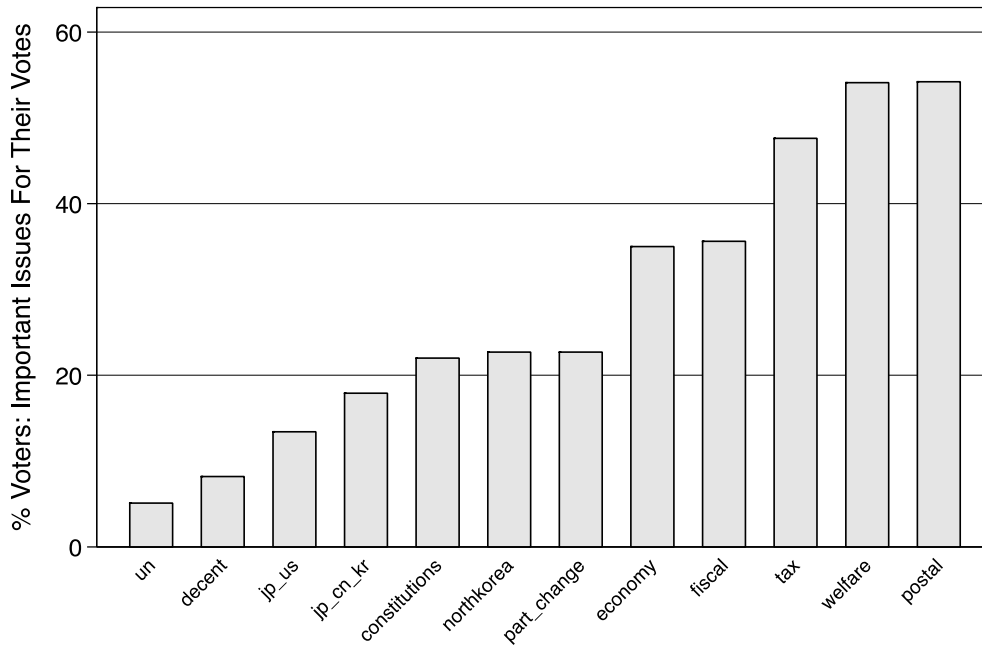
¹Median Dist. is defined as the distance between a legislator's scaled issue position and the position of the median candidate.

²Party Dist. is defined as the distance between a legislator's scaled issue position and the position of the median candidate in their own party.

³Direction PD is defined in the same way as Party Dist., but with candidates more moderate than their party median taking a negative value and those that are more extreme than their party median taking a positive value.

⁴We restrict the cases to LDP and DPJ candidates only. Thus the LDP dummy represents the average difference between an LDP and DPJ candidate.

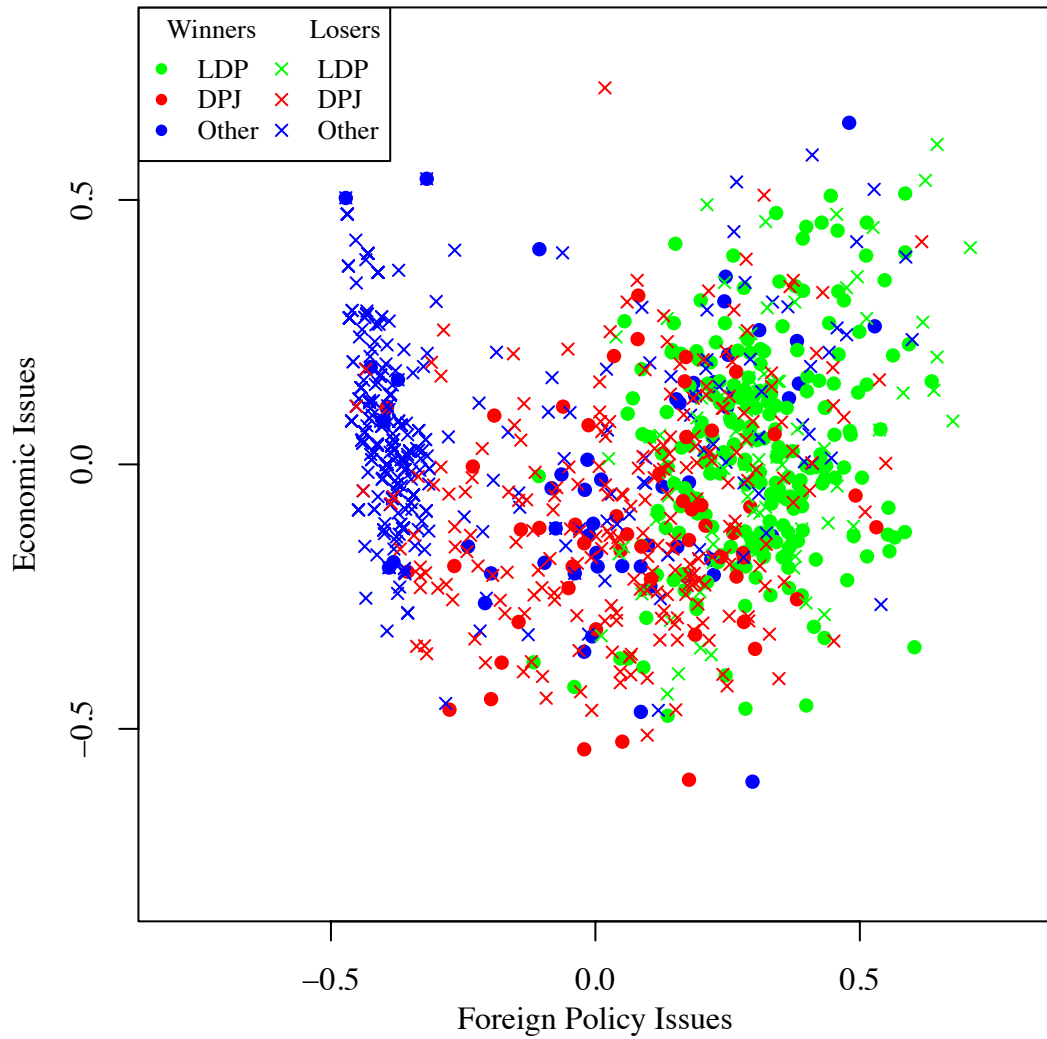
Figure 1 Salience of Economic and Security Issues in the 2005 Election



Source: Todai-Asahi Survey, 2005.

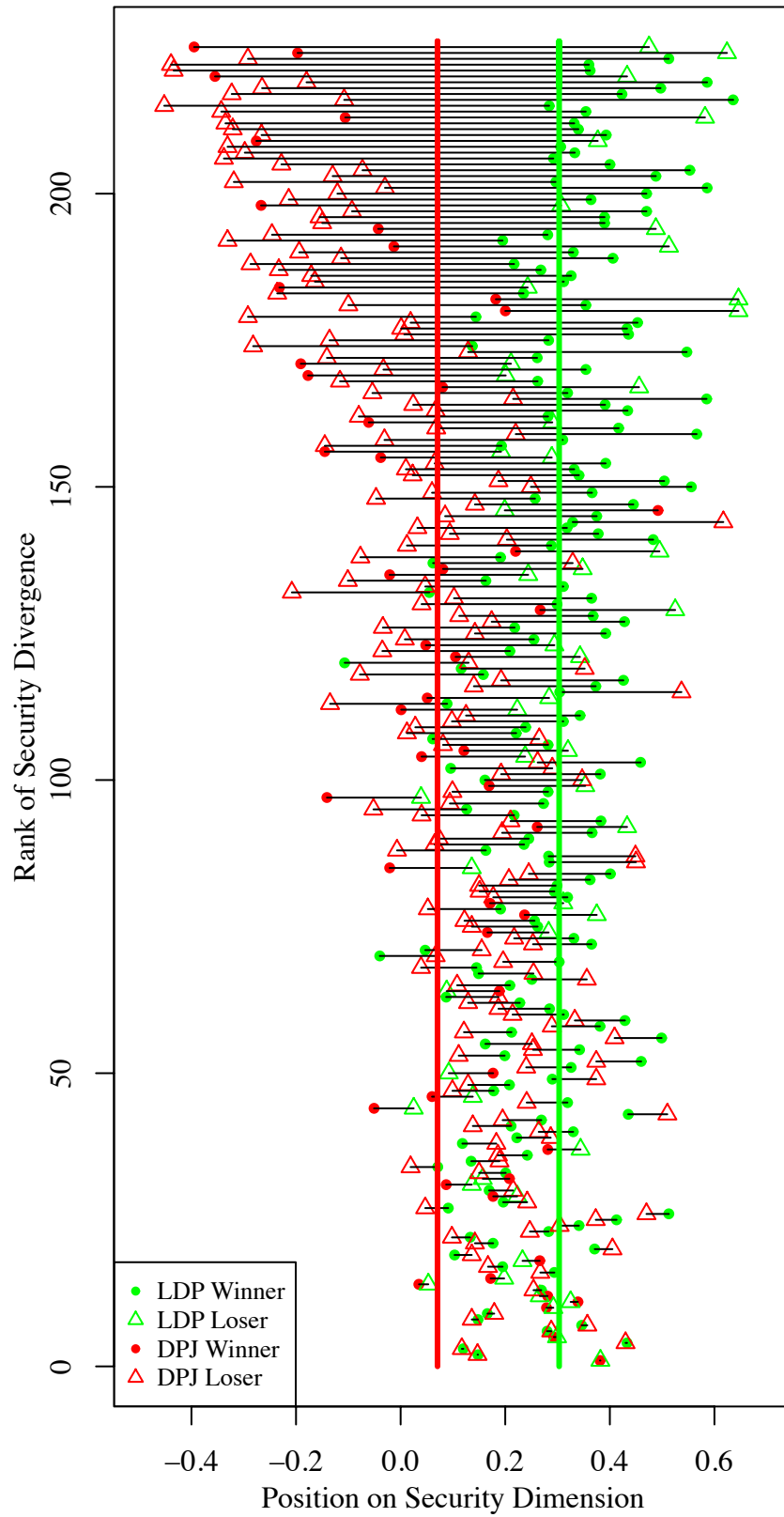
Note: The question wording is: "Whether you support or oppose, which of the following issues did you weigh in voting? (choose as many as you wish): constitutional revision, Japan-U.S. relations, Japan-China/Japan-South Korea relations, North Korea relations, Japan's joining UN Security Council, Social Insurance System, Economy, Fiscal Reconstruction, Tax, Postal Privatization, Decentralization and Partisan Change.

Fig 2. 2-D Common Space Estimates for Japanese Legislators
2005 Asahi Survey



Note: X-axis is a candidate's ideal point estimate for the security policy dimension and Y-axis is the same for the economic policy dimension.

Figure 3. Candidate Security Positions, Ranked by Divergence

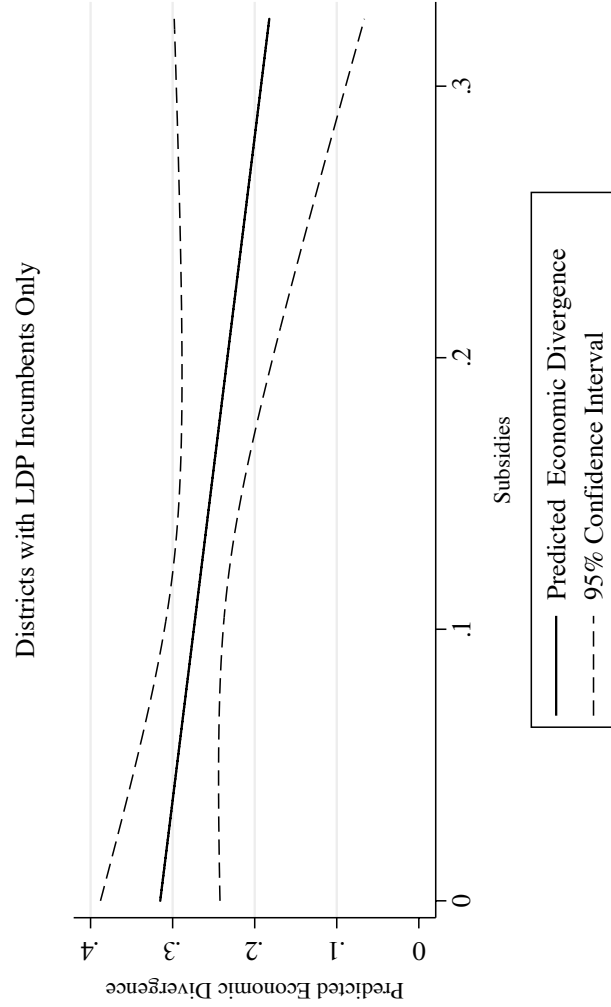


Note: X-axis is the first dimension ideal point estimates, and Y-axis is 277 single-member districts in our dataset ranked by the two-party candidates' platform divergence.

Appendix: Translation of Survey Instruments

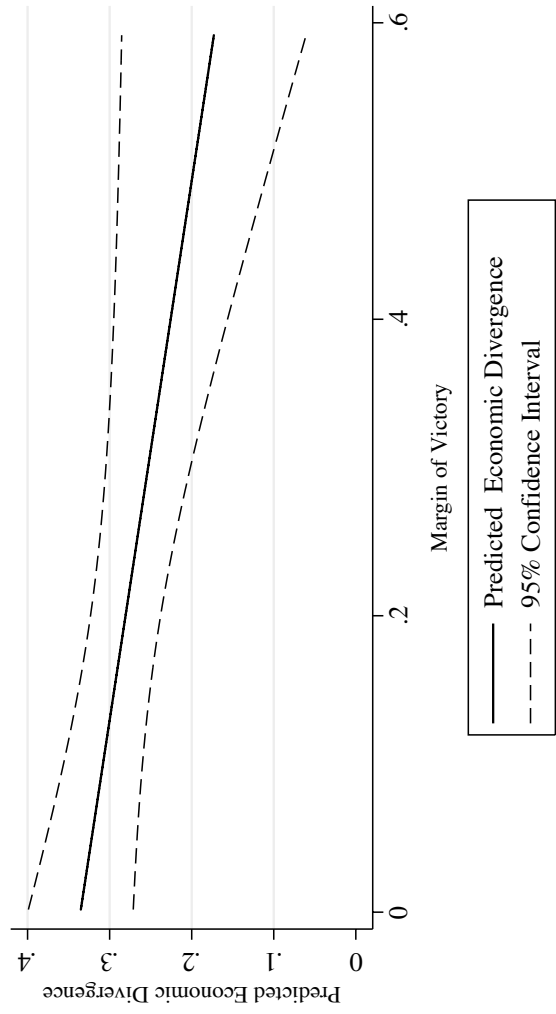
1. Japanese defense capabilities should be strengthened (defense).
2. The Japan-U.S. security treaty should be stronger than the status-quo (treaty).
3. When another country's attack is anticipated, Japan should not hesitate conduct preemptive attack (attack).
4. Japan should become a permanent member of U.N. security council and actively fulfill the international role (UN).
5. Small government is preferable, even if it means declining government service in social welfare and other areas (smallgov).
6. Japanese companies should maintain the lifetime employment system (lifetime).
7. It is necessary to secure local employment using public work projects (publicen).
8. The urgent issue is to solve the deflation, thus we should not suppress the government expenditures but instead use fiscal stimulus to deal with recession (keynes).
9. We should put pressure on North Korea rather than engaging in a dialogue (nkorea).
10. The government should reinterpret the Constitutions to allow the use of collective defense (collecti).
11. It is inevitable individual privacy and rights are constrained in order to secure safety (safety).
12. We should allow permanent resident foreigners to participate in local politics (foreign).

Figure 4. Predicted Effect of Subsidies on Economic Divergence



Note: Graph based on table 2, model (1).

Figure 5. Predicted Effect of Margin of Victory on Economic Divergence



Note: Graph based on table 2, model (1).