Does electoral strength affect politician's trade policy preferences? Evidence from Japan

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2 March 2015

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March 2, 2015

Abstract

This study examines the effect of electoral strength on politician's trade policy preferences using data of candidates running for the members of the House of Representatives in Japan. The results reveal that the electoral strength measured by the margin of vote affects candidates' trade policy preferences after controlling attributes of candidates and constituencies. Specifically, candidates who face a close race in election are more likely to be protectionist than those who are expected to be elected by a substantial majority, suggesting that electoral competitions deter politicians from supporting trade liberalization. This result is robust to the model with the margin of vote as an endogenous variable.

Keywords: Trade policy; policy preferences; electoral competition
JEL Classifcations: D72, F13

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1. Introduction

Although economists have shown the benefits of free trade in terms of economic welfare, protectionist trade policies, such as imposing high tariffs, may be given priority over free trade policy. Clarifying a factor that deters a politician from supporting free trade policy has been a central issue in international economics. Previous empirical studies on determinants of congressional voting patterns on trade policy have focused on the role of economic variables such as skill endowment and industry composition in his/her constituencies to examine the theoretical predictions by trade theories[1] and that of campaign contributions based on political economy.[2] On the other hand, a recent study reports that in addition to economic variables, electoral factors affect legislators' votes on trade policy. A politician may change a favorable policy when influenced by re-election incentive. Using micro data of candidates running for the members of the House of Representatives in Japan, this study empirically examines the effect of electoral strength on politicians' trade policy preferences.

Empirical evidence on the influence of electoral incentives or pressures on trade policy preferences are initially observed by Conconi et al. (2014), who examine the determinants of votes on trade policy using the results of votes on major bills related with trade liberalization since the 1970s in the U.S. Congress. They show that senators are more likely to support free

[1] For example, Magee (1980) and Irwin (1994) examine the correlation between votes for trade bills by congressional representatives and industry characteristics of their constituencies but do not consider skill endowment factors. Similarly, Kaempfer and Marks (1993), Baldwin and Magee (2000), and Beaulieu (2002) examine the determinants of votes for trade liberalization bills by members of the congress, introducing both skill endowment and industry variables in their representative districts. Mostly, these studies report that both skill endowment and industry characteristics of legislator's constituency are correlated with votes on trade policy bills.

[2] Grossman and Helpman (1994) theoretically explain that the introduction of a trade restriction policy is determined by the contributions of lobbying groups. Baldwin and Magee (2000) and Devault (2010) report that campaign contributions affected legislators' votes on free trade agreements in the U.S. House of Representatives.

trade policy than house representatives, except for those who are serving their final term, suggesting that re-electoral incentives deter legislators from supporting free trade policies. For politicians, election pressure is possibly a source of protectionism. Although Conconi et al. (2014) first attempted to show that electoral pressures drive politicians toward protectionism, there are some studies that examine the relation between electoral competition and political stance in general policies. For example, Lee et al. (2004) empirically examine the causal issue as to whether voters affect candidates' policy preferences or merely select existing policies using various voting score data in the U.S. Congress during 1946–1995. In the former causal relation, candidates who are elected with a large majority are likely to select more partisan policies, whereas electoral competition leads candidates to select policies that are more moderate.

In the context of trade liberalization versus protectionist trade policy, politicians who face close races in elections are expected to advocate protectionist trade policies that maintain the status quo (Fernandez and Rodrik, 1991). On the other hand, the latter causal relation implies that candidates adopt policies based solely on their political beliefs, and therefore, the strength of their election performances has no relation with trade policy preferences. These contrasting predictions have been a controversial issue in the fields of political economy and political science. For general policy positions, the latter prediction is supported by Lee et al. (2004) for the U.S. representatives and Albouy (2011) for the U.S. senators.[3] However, in the context of determinants of protectionism, no study has yet attempted to examine the relation between electoral strength and political stance of trade policy. Although Conconi et al. (2014) focus on the proximity of the election, even if the election is near, candidates'

[3] As a measurement of representatives' policy positions, they use Americans for Democratic Action score.

policy preferences may differ depending on their electoral strength. In this respect, the present study sheds light on the heterogeneity of electoral pressures among candidates and examines the effects of electoral strength on trade policy preferences using data collected from electoral candidates.

In the empirical analysis, I use the bivariate probit model to determine the probability of supporting a protectionist trade policy and nonparticipation in the Trans-Pacific Partnership (TPP). The results show that electoral strength, as measured by the margin of votes received in the election, is strongly associated with politicians' trade policy preferences. More specifically, winners in an election by a narrow margin are more likely to support a protectionist trade policy compared with winners by huge majorities, ceteris paribus. This result suggests that there is a possibility that electoral pressures deter politicians from supporting free trade policy. In addition, this finding is robust to control the potential endogeneity of electoral strength using an indicator of hereditary candidates as an instrument.

The remainder of this paper is organized as follows. Section 2 presents a hypothesis to be tested and describes data on trade policy preferences. Section 3 presents a structural equation model to explain the probability of selecting trade policy preferences and explanatory variables with an instrumental variable. Section 4 presents the estimation results of the structural model. Section 5 concludes the study.

2. Electoral strength and trade policy preferences

2.1. Hypothesis on electoral strength and its measurement

How the level of electoral strength leads politicians to support protectionist trade policies is an interesting issue. Conconi et al. (2014) focus on the difference in generations of senators and find that the oldest generations who face elections are likely to support protectionist trade policies. However, even if the election is near, policy preferences may differ between candidates who are expected to win election and those who are not. This study sheds light on the heterogeneity of electoral pressures among candidates.

A theoretical conjecture on the relation between electoral competition and protectionism is related with the discussion on policy convergence vs. policy divergence. As presented by the median voter theorem, electoral competitions cause policy convergence among politicians under certain conditions. However, there is also a view that the opposite is true when politicians can simply implement their preferred policy. In this case, voters cannot affect politicians' policy preferences; this results in policy divergence (Alesina, 1988).

Based on data of the U.S. Congress, recent empirical studies attempt to uncover the contrastive relation as to whether voters affect candidates' policy preferences or merely select existing policies (Lee et al., 2004; Albouy, 2011). Although these studies focus on the general voting behavior that covers broad policies, little is known about preferences of trade policy as a specific policy. This study follows the assumption of Lee et al. (2004) that candidates who are elected with a large majority select more partisan policies, whereas those with weak electoral support select policies that are more moderate. In the context of trade policy, politicians who face close races in elections are expected to more likely advocate protectionism

because protectionist trade policies are considered as a moderate way in the sense of the status quo, whereas free trade policy is likely to be a partisan way because it leads to structural changes. In this respect, Fernandez and Rodrik (1991) theoretically show that there is a status quo bias in formulating structural reform (i.e., trade liberalization) whenever individual gainers and losers from the reform cannot be identified ex ante, and this tendency holds even if economic welfare is expected to increase ex post as a whole. Therefore, the hypothesis to be tested is as follows:

H: Candidates who face close race in elections are more likely to support protectionist trade policies than those who win elections by a large majority.

In this study, the electoral strength is measured based on the number of votes gained in the election.[4] Assuming that all candidates estimate the number of possible votes they will obtain in the election with high accuracy based on opinion polls in the election campaign, the difference in actual votes over competitors can be considered as a proxy for the level of electoral strength. Specifically, I construct a victory margin or loss; for winners, *margin* is defined as the share of the obtained vote over the vote of the second-placed candidates, whereas for those placed second and thereafter, it is defined as the share of the obtained vote over the vote of the first-placed candidate.

2.2. Data for trade policy preferences

This study uses data for politicians' trade policy preferences retrieved from the University of Tokyo-Asahi Survey (UTAS).[5] The survey has collected data on preferences of various

[4] The results of votes are available on the website of the Ministry of Internal Affairs and Communications.

[5] UTAS is conducted by Masaki Taniguchi of the Graduate Schools for Law and Politics, University of Tokyo and the Asahi Shimbun.

policies, including trade policies from candidates running for the Diet. The results of the survey are released promptly before the election date by the Asahi Shimbun, which is one of Japan's major daily newspapers, for voters to differentiate the policy preferences of candidates running for election.[6] This study focuses on the election of the members of the House of Representatives in December 2012, which covers the data on 1,294 candidates in a single-seat constituency.[7]

The survey comprised two questions about trade policy preferences. One is a general question about trade liberalization: "*Which policy do you support: (a) trade liberalization and/or (b) protection of domestic industries?*" The answers (with the distribution of responses in parentheses) are as follows: For (a), "*support*" (11.7%), "*somewhat support*" (15.3%), and "*not sure*" (22.6%). Likewise, for (b), "*support*" (23.5%), "*somewhat support*" (22.0%), and not answered (4.9%). Another question regards the TPP as a specific EPA, which is the subject of ongoing negotiations and one of the important issues in the election: "*Answer what you think about the opinion as follows: We should participate in the membership of the TPP.*" The distribution of responses is as follows: "*agree*" (15.9 %), "*somewhat agree*" (12.6 %), "*not sure*" (14.6 %), "*somewhat disagree*" (9.2 %), "*strongly disagree*" (43.6 %), and not answered (4.1 %). As seen in the distribution, a majority of candidates support protectionist trade policy. This is contrastive to the trade policy preferences of the general

[6] In Japanese parliament, the principle of "one party for one person" is common. Therefore, no variations exist in voting behavior among members who belong to the same party. This survey is the only way to know their political stances.

[7] The survey was conducted for 1,504 candidates from November 16 to December 16 just before the election counting date, and there were 1,404 valid respondents. Of these, 1,294 candidates ran in single-seat constituencies. In the election, 480 seats were filled, of which 300 were for single-seat districts and 180 were elected by the proportional representation system. Candidates who belong to a political party are allowed to run for the election in both single-seat constituency and a proportional representation district. The seat allocation of a proportional representation system uses the D'Hondt formula, and in the case of the same order, the candidate who is high in loss margin in the single-seat constituency is elected.

population. A recent academic survey on trade policy preferences at the individual level in Japan showed that approximately 51% favor further liberalization and 32% object to it (Ito et al., 2015). In addition, major opinion polls suggest that more than half of the nationals support participation in the TPP. This contrasting result from the individual's viewpoint raises the question of why politicians are unwilling to support trade liberalization.

Table 1 shows the distribution of respondents' answers to the abovementioned two questions. Interestingly, there are politicians who have a view that trade liberalization is agreeable while dissenting on specific trade agreement, and vice versa. It is interesting to see difference in the effects of electoral strength on choosing the trade policy preferences between the two questions. An econometric issue is that the two choices are determined simultaneously, and therefore, there is a concern about the endogeneity problem in the sense that the error terms of the two equations in terms of trade policy preferences for the two responses are correlated with each other. To deal with the problem, this study estimates the probability of making two choices using the bivariate probit model. Applying this method enables the identification of possible different effects of explanatory variables on the trade policy preferences depending on the two questions.

<Table 1 around here>

3. Empirical strategy and control variables

3.1. Bivariate probit model with endogenous variable

Following the literature on this topic, the model is specified based on a binary choice model. As mentioned in Section 2.2, there are two questions about trade policy preferences, and

therefore two binary variables are constructed. One is derived from the responses to the general question about trade liberalization and the other is drawn by analyzing results from the question about the TPP as a specific regional trade agreement. The two outcome variables, y_{ij1} and y_{ij2} are expressed as follows:

$$y_{ij1} = \begin{cases} 1 : \textit{Protectionist} & if\ y^*_{ij1} > 0 \\ 0 : \textit{Free trade} & if\ y^*_{ij1} \leq 0 \end{cases} \tag{1}$$

$$y_{ij2} = \begin{cases} 1 : \textit{Anti-TPP} & if\ y^*_{ij2} > 0 \\ 0 : \textit{Pro-TPP} & if\ y^*_{ij2} \leq 0 \end{cases} \tag{2}$$

where suffix i denotes the candidate, and j denotes the constituency. y^*_{ij1} and y^*_{ij2} are latent variables defined as an observable binary variable that equals 1 if candidate i who runs from constituency j supports a protectionist trade policy, and 0 otherwise. Each latent variable is assumed to be linearly related with electoral strength z_i and a set of exogenous covariates $\mathbf{x}$ explained in the section as follows.

A key empirical issue is that the electoral strength measured by the victory or loss margin of vote is suspected to be an endogenous variable as the number of votes gained is an outcome of the election.[8] To deal with the endogeneity problem, this study employs a bivariate probit with an endogenous variable model. Similar to standard instrumental variables estimation, introducing additional instrumental variables that have explanatory power for the endogenous variable but do not affect the outcome variable is necessary. As an instrument, I adopt a

[8] In considering the causality issue, one may think that using the number of votes of the last election is appropriate, but in that case, it sacrifices the sample of newcomers, who comprise 61% of the total sample. Furthermore, because Japan underwent a regime change in the 2009 election from the Liberal Democratic Party (LDP) to the Democratic Party of Japan (DPJ) and in the 2012 election from the DPJ to the LDP, the change of seats has been drastic, and the number of votes obtained in the previous election does not necessarily reflect the pressure of the current election in a precise manner.

dummy variable indicating hereditary candidates (i.e., *hereditary*). In Japan, it is common knowledge that second-generation candidates have an advantage over their competitors in election campaigns because of their succession of a support base, name recognition, and an election campaign fund-raising from their relatives and supporters of the first generation. In addition, the dummy for hereditary candidates is believed to be irrelevant to trade policy preferences. In this study, hereditary candidates are defined as candidates whose relative within the third degree of relation was a Diet member (including an experienced member), in succession to the entire electoral district or some part of the district, or candidates whose parents were Diet members even if they do not succeed to the district. According to the definition, 11% (140 people) were hereditary candidates (1,294 people) who ran from single seat constituencies, and 80% (112 people) of those were elected.

In the empirical specification, the dummy for hereditary candidates is h_i, which is likely to affect the electoral strength, z_i but neither y^*_{i1} nor y^*_{i2}. To sum up, these relations are formed as the equations as follows:

$$y^*_{i1} = \mathbf{x}^{'}_{ij}\beta + \eta z_i + \sigma u_i + \epsilon_{i1} \tag{3}$$

$$y^*_{i2} = \mathbf{x}^{'}_{ij}\gamma + \theta z_i + \phi u_i + \epsilon_{i2} \tag{4}$$

$$z_i = \mathbf{x}^{'}_{i}\delta + \lambda h_i + \omega u_i + \epsilon_{i3} \tag{5}$$

where $\mathbf{x}^{'}_{i}$ is a set of covariates explained in the section below, and β and γ are vectors of coefficients. The continuous and endogenous variable z_i is affected by an unobserved component, u_i that also influences the two binary outcome variables. The error terms and

unobserved component are assumed to be distributed as the standard normal distribution. These equations are estimated using a general structural model, which fits generalized linear models with latent variables by maximum likelihood estimation.[9]

3.2. Candidate's attributes

The UTAS compiles candidates' basic characteristics, such as gender and age. In the estimation, effects of both *age* and *gender* are controlled. In addition, the data on political characteristics is available in the survey. The term for which a candidate was elected as a member of the House of Representatives may be correlated with his/her trade policy preferences if the extent of experience as a member strengthens his/her influence on making policy. As a measurement of experience, the survey provides information on candidates' careers as follows: newcomer, experienced, former member, or incumbent. To control a hysteresis effect on trade policy preferences, dummy variables for career as a member of the House of Representatives (*experienced*, *former*, and *incumbent*) and the terms (*terms*) are added into the right-hand side of the model. The affiliation of a political party is likely to affect their policy preferences strongly. In the case of the U.S. Congress, Democrats tend to be more protectionist than Republicans, as shown by Conconi et al. (2014). In Japan, there are many political parties, as illustrated in Table 4, which displays the distribution of candidates' trade policy preferences by political party. Obviously, their policy preferences differ according to party affiliation, and this suggests that party dummy variables would be strongly significant.

Differences in the policy interests of candidates may be correlated with their trade policy

[9]Since the likelihood includes the integral of latent variables, the model does not have a closed-form solution. I apply the Gauss–Hermite quadrature approximation to the likelihood.

preferences. In Japan's political system, the members of the House of Representatives who have focused on a specific policy for many years are said to have a strong influence on the policy. In this respect, the survey comprised the question about particular areas of engagement as follows: "*Which is the field of policy that you have made efforts until now?*" Regarding trade policies, because agriculture is the most sensitive and import-competing sector in Japan, candidates who engaged in agricultural policy as their field of expertise were likely to support import restriction to protect the sector and maintain their political influence. From answers to this question, I defined the dummy variable for influential members on agricultural policy (*influence*) with a value of 1 if a candidate selected "*policy for agriculture, forestry, and fisheries*," and 0 otherwise. A difference in campaign style may affect their trade policy preferences. A candidate who appeals to organizations from which many votes can be expected may conform to their needs. In the survey, a question regarding campaign style is as follows: "*For an election campaign, various activities are allowed, except appealing for a policy. During this election, which is the element you make the most of (except appealing for a policy)?*" To control the difference in the style of election campaigns, I introduce the dummy variable (*organized*) into the model that takes a value of 1 for a candidate who selected to appeal to specific people or organizations, and 0 otherwise.[10] Because it is believed that a candidate intending an organized election campaign has a strong tendency toward protectionism, the dummy variable is expected to have a positive sign. With regard to TPP participation, the TPP is generally believed to be approximately equivalent to the FTA with the U.S. because the majority of trade volumes within member countries are a result

[10]The choices are prepared as follows: *(1) to appeal to specific people or organizations who or that have always supported you, (2) to emphasize past achievements, (3) to emphasize ability for government leadership, (4) to emphasize the nature of the leader, and (5) to emphasize your own achievements and nature.*

of trade between the U.S. and Japan.[11] Therefore, negotiations with the U.S. play a major role in obtaining a conclusion. There is a concern that the anti-U.S. feeling of politicians may deter them from supporting Japan's participation in the TPP. The survey comprised the question as follows: "*Do you have friendly feelings toward the U.S.?*" To control the effect of sentiment toward the U.S., the anti-U.S. feeling dummy (*sentiment*) is included in the model that takes a value of 1 for a candidate who answered "*No*" to this question, and 0 otherwise.

3.3. Constituency's attributes

Characteristics at the constituency level are expected to affect candidates' policy preferences.[12] First, as reported by previous studies (Kaempfer and Marks, 1993; Baldwin and Magee, 2000; Beaulieu, 2002), both skill endowment and industry variables in their constituencies are employed as explanatory variables based on ideas from trade theories. If workers cannot move across industries, as assumed by the Ricardo–Viner model, industry composition is expected to be correlated with candidates' trade policy preferences. Candidates who run for the election in constituencies with a high share of workers in import-competing industries are likely to oppose trade liberalization. On the other hand, a large share of workers in export industries may lead candidates to support free trade policies. In this analysis, the share of agricultural workers (*agri*) and that of manufacturing workers (*manuf*) are added into the model as a proxy for the share of workers of import-competing

[11] According to trade volume statistics in 2013, the U.S. is Japan's largest export destination and the second largest origin of imports. The share of trade with the U.S. is 26.9% of Japan's total trade volume.

[12] There is no official statistics at the constituency level. Therefore, I construct by aggregating data of the national census disaggregated into the "cyocyo" level, which is the smallest unit of address under municipality (like a "street" level) in 2010.

industries and that of export industries, respectively.[13] In addition, the presence of high-skilled individuals in constituencies is likely to be correlated with their preferences if workers are mobile between industries, as presented in the Stolper–Samuelson theorem. To examine this, the population's share of high-skilled individuals, defined as graduates from college or graduate school, is included in the model. Because high-skilled individuals expect increases in their income owing to increases in the prices of skill-intensive products, a candidate who runs for election in constituencies with high shares of high-skilled individuals is anticipated to tend to support trade liberalization and TPP participation. As proxies for the share of high-skilled individuals, I employ the share of people with bachelor's degrees (*skill*) and average income (*income*) in the constituency; both variables are expected to be negatively correlated with protectionism.

Second, a variable based on ideas from political economy is considered. As presented by Hotelling–Downs median voter theorem, ideological positions converge at the median voter's preference when there are two candidates. However, the conclusion is different when the number of candidates is more than two. Cox (1987, 1990) shows that the ideological position of each candidate is scattered as the number of candidates in a constituency increases because a candidate realizes the chance of winning with few number of votes and attempts to differentiate his/her political stance from those of competitors for securing votes from a specific group. To control the possible differences in trade policy preferences due to differences in the number of candidates, the Cox threshold (*Cox*), defined as the total number of votes over the number of candidates, is added into the empirical model.[14]

[13] In Japan, the average MFN applied tariff rate for agricultural products is 19%, whereas that for non-agricultural products is 2.6%, according to the *World Tariff Profile 2014*.

[14] Based on this prediction, Park and Jensen (2007) examine the relation between the Cox threshold and

Candidates who face a narrow constituency are anticipated to tend to favor protectionist trade policies, and thus, the negative sign of the Cox threshold is predicted. In addition, population density (*density*) is added into the model because it is believed that candidates running from city districts are likely to be advocates of trade liberalization area. Table 2 displays the descriptive statistics of the characteristics of candidates running for the election and their constituencies' characteristics.[15]

<Table 2 around here>

4. Empirical results

4.1. Baseline results

Before presenting the estimation results of bivariate probit with an endogenous variable, Table 3 displays the basic results estimated by the standard bivariate probit model for the choice of whether trade liberalization or the protection of domestic industries is agreeable and whether Japan's participation in TPP is agreeable. The figures show the estimated coefficients and robust standard errors clustered at the constituency level in brackets to account for the correlation between candidates within a constituency. The possible endogeneity bias associated with the simultaneous decision of the two choices is considered in this model. The correlation between the error terms, as expressed by rho, is statistically significant at the 1% level, which suggests that the two decisions are positively correlated with each other and support the application of the bivariate model.

agricultural subsidies using cross-country and commodity-level data and report a negative correlation between the two variables.

[15] Although one may be concerned about multicollinearity, a correlation matrix among the explanatory variables does not show significantly high correlation coefficients.

<Table 3 around here>

The key variable here is victory margin over the second-placed candidate or loss margin over the first-placed candidate as a proxy variable for electoral competition. To examine the consistency of the results, the model in column [1] includes victory or loss margin and candidate's characteristics, whereas column [2] shows the results for the complete set of covariates, including constituency characteristics, and the square term of margin is added to the model in column [3]. The statistical significance of the margin does not change among these models. The margin of victory or loss is statistically significant and negatively associated with the probability of supporting the protectionist trade policy, as predicted. At the same time, the coefficient of the squared term is significantly positive and indicates that there is a negative quadratic relation, with a turning victory margin of 3.5. This relation is illustrated in Figures 1 and 2. Figure 1 indicates that the likelihood of supporting both the protection of domestic industries and nonparticipation in the TPP decreases as the margin of victory increases, but the probability becomes increasingly less likely to respond, leading up to a victory margin of 3.5, and confidence intervals tend to diverge from the fitting line. Conversely, Figure 2 shows that the likelihood of supporting trade liberalization and TPP participation increases as the margin of victory increases, whereas it is saturated when the victory margin approaches the value of 3.5 and confidence intervals diverge as the margin increases. Given these results with respect to the proxy for electoral pressures, candidates who won the election by narrow margins are suggested to more likely favor protectionist trade policies than those who won by substantial majorities.

<Figures 1 and 2 around here>

4.2. Results from structural model

The victory margin and loss are suspected to be endogenous because they are based on the number of votes gained in the election. To deal with the endogeneity issue, in this study, an instrumental variable approach is considered by introducing a dummy variable indicating hereditary candidates as an instrument. Table 4 presents the results of the structural model for Eqs. (3)–(5). As shown in columns of "Margin," the hereditary candidate dummy is significantly and positively correlated with the victory margin, which is as expected. After controlling endogeneity bias, the victory margin and loss remain significant and negative. In addition, the statistical significance of explanatory variables does not change from those shown in Table 3. Table 5 shows the computed marginal effects at the mean level on the probability divided into the four options. For an average candidate, one unit increase in the margin of victory decreases the probability of supporting protectionist trade policy and nonparticipation in the TPP by 15% but increases the probability of supporting free trade policy and TPP participation by 10%.

<Tables 4 and 5 around here>

Among candidates' characteristics, only the variables *age*, *influence*, *organized*, and *sentiment* show statistically significant coefficients and raise the probability of favoring the protectionist trade policies, whereas there is no correlation between the experience of representatives and protectionism. Although previous studies on determinants of individuals' trade policy preferences consistently show that females are more likely to prefer import restrictions than males,[16] politician's gender does not seem to affect their trade policy preferences. Ad-

[16] See Mayda and Rodrik (2005), Scheve and Slaughter (2001), Blonigen (2011), and Ito et al. (2015).

vocates of protectionism can be found among older candidates. Because younger candidates are likely to appeal for structural reform, this result is natural. As expected, the result of *influence* indicates that a candidate with experience in agricultural policy is likely to support protectionism. In addition, candidates who appeal groups or organizations from which many votes can be expected in election campaigns tend to support the protectionist trade policies. Anti-U.S. sentiment among politicians seems to be a barrier to trade liberalization. This result implies that trade liberalization and TPP participation are considered to be a market opening to the U.S.

Examining how the constituency-level attributes are related with politician's trade policy preferences from the viewpoint of trade theory predictions is interesting. Concerning the industrial composition of constituencies and as for the choice of TPP participation, there is a positive correlation between the agricultural workers ratio (*agri*) and opposition to TPP participation. In addition, there is a negative correlation between the manufacturing workers ratio and support for TPP participation, as expected. This result suggests that candidates' judgment about whether TPP participation is right is sensitive to changes in the industrial composition in constituencies. However, this tendency is not observed for the choice of general preferences of trade liberalization. Instead, the coefficient of the skill variable is negative and significant, as predicted; this implies that the probability of supporting protection is low in a constituency with a high concentration of skilled individuals. This result is consistent with the Stolper–Samuelson theorem, which assumes that workers are perfectly mobile across industries and predicts that skilled workers benefit from income increases after trade liberalization in a skill-abundant country. These results are consistent with findings by previous studies (Kaempfer and Marks, 1993; Baldwin and Magee, 2000; Beaulieu, 2002). The

different responses in terms of *agri* and *skill* probably depend on a difference in the sensitivity of voters. A specific trade agreement such as the TPP seems to be a more sensitive political issue for the agricultural sector in each constituency than the general view on trade liberalization. On the other hand, an advocate of free trade is more likely to be found in constituencies with high education levels.

Narrow constituencies are expected to induce candidates to appeal to a specific group from which a certain number of votes can be expected. However, contrary to the expectations, the Cox threshold shows significant and positive sign. Generally, an urban area constituency has more number of candidates than a rural area constituency. Although the population density and the share of agricultural workers are controlled, such counter-intuitive result could be partly because of the difference between the number of candidates in urban and rural areas. Alternatively, this result may be because candidates tend to display policy differentiation in constituencies with many candidates.

For a robustness check, I excluded losers in the election from the entire sample. The estimation results remain almost the same even when the data is restricted to only winners, as shown in Table 6. Turning to the main variable of interest, the results of the victory margin from the restricted sample are consistent with those from the entire sample, although the statistical significance appears to be weak at the 10% level for the choice of whether to support trade liberalization. From these results, even if the sample is restricted to winners in the election, the candidates who won by a narrow margin of votes tend to be advocates of protectionism compared with those who won with a large majority.

<Table 6 around here>

5. Conclusions

Implementing free trade policies is a politically difficult issue, but very few researchers have attempted to empirically examine the type of political pressure that affects politicians' views on trade policy. An exception is Conconi et al. (2014) who focus on the role of electoral cycle in affecting voting behavior of the U.S. Congress on trade liberalization bills. The present study explores the effect of electoral competition among politicians on their trade policy preferences using candidate-level data of the general election for the members of the House of Representatives in Japan.

Considering the potential endogeneity bias in electoral strength, this study adopts an instrumental variable approach employing the hereditary characteristic of candidates as the instrumental variable. The results indicate that politicians' preferences for trade policy are sensitive to electoral pressures. Losers and winners who run a close race in an election are more likely to advocate protectionism compared with winners by huge majorities. This tendency is observed even among election winners and even after controlling the endogeneity bias. Note that there is a possibility that electoral pressures deter politicians from supporting free trade policy.

This result partly explains why politicians tend to support protectionist trade policy, even though a majority of the nationals support further trade liberalization. Although politicians are better informed regarding the benefits of trade liberalization than the nationals, the results of this study suggest that electoral pressures makes them hesitant toward supporting free trade policy. The low voter turnout in general elections may amplify the effect of electoral pressures on the likelihood of supporting protectionism because the majorities who support

free trade policy are not interested in elections and are less likely to vote to achieve trade liberalization, whereas the median voter is likely to vote according to interests on factor endowments.[17]

One of the limitations of this study is the nature of the data. Because candidates' trade policy preferences were surveyed during the election campaign, they may be partial to protectionism. In addition, the question of whether they really vote against trade liberalization bills still needs to be examined. A winning candidate who previously opposed Japan's participation in the TPP may change his/her opinion and vote in favor of the bill in the parliament based on the principle of "one party for one person." In Japanese parliament, where this principle is dominant, there may be no variations in the voting behavior of members belonging to the same party. Nevertheless, if a winner elected with a narrow margin persists on protectionism even when voting for trade policy bills, the evidence of electoral pressures would be quite conclusive.

[17]Public elections in Japan are not compulsory voting. The voter turnout in the election is 59.32%, and the most recent one in 2014 election is 52.66%; these values are lower than those of the U.S. (67.95%) and UK (65.77%) and close to those of France (55.4%).

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Figure 1: Victory margin and likelihood of supporting protectionist trade policies

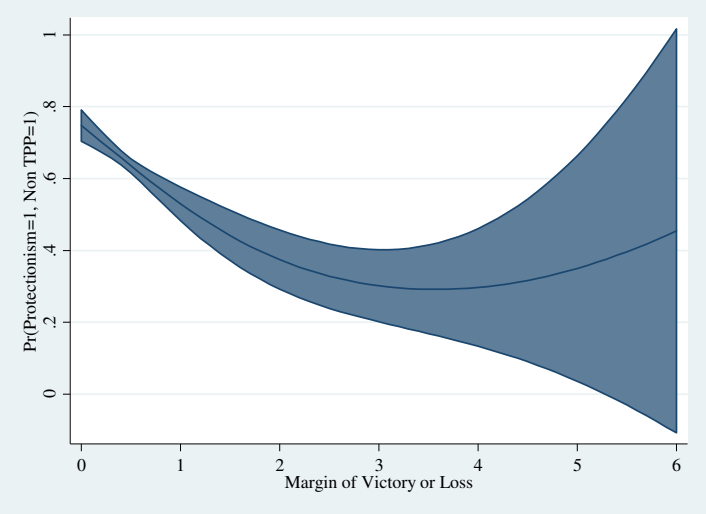

Figure 2: Victory margin and likelihood of supporting free trade policies

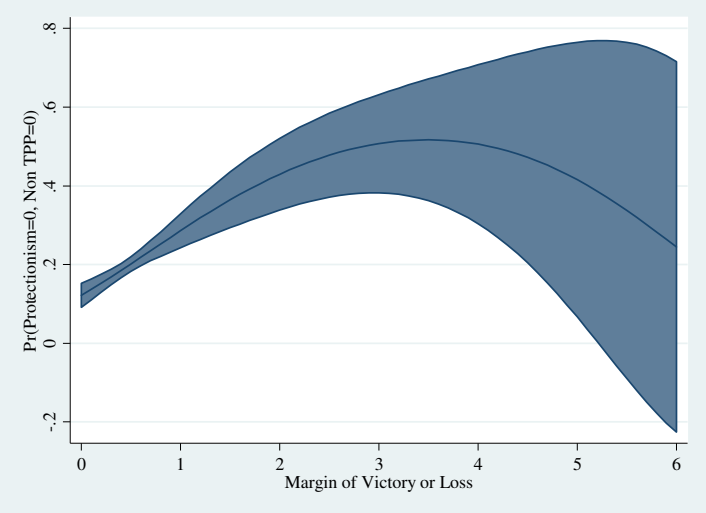

Table 1: Distribution of trade policy preferences

	Pro-TPP		Not sure		Anti-TPP		Total	
Free trade	255	(20.9%)	39	(3.2%)	50	(4.1%)	344	(28.2%)
Not sure	75	(6.2%)	96	(7.9%)	116	(9.5%)	287	(23.6%)
Protectionist	38	(3.1%)	49	(4.0%)	500	(41.1%)	587	(48.2%)
Total	368	(30.2%)	184	(15.1%)	666	(54.7%)	1,218	(100.0%)

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Protectionist: Include "not sure"	1218	0.718	0.450	0	1
Protectionist: Exclude "not sure"	931	0.631	0.483	0	1
Anti-TPP: Include "not sure"	1218	0.698	0.459	0	1
Anti-TPP: Exclude "not sure"	1034	0.644	0.479	0	1
Margin: Margin of vote over 1st- or 2nd-placed	1218	0.694	0.738	0.007	7.108
Gender: Female=1	1218	0.146	0.353	0	1
Age: Candidate's age	1218	50.164	11.107	25	94
Term: N of experienced terms	1218	1.213	2.143	0	14
Newcomer: Newcomers in the election=1	1218	0.610	0.488	0	1
Experienced: Experienced candidates=1	1218	0.030	0.169	0	1
Former: Former member=1	1218	0.052	0.222	0	1
Incumbent: Incumbent member=1	1218	0.309	0.462	0	1
Influence: Specialized in agricultural policy=1	1218	0.167	0.374	0	1
Organized: Organized election campaign=1	1218	0.432	0.496	0	1
Sentiment: Ant-U.S. sentiment=1	1218	0.043	0.202	0	1
Agri: Agricultural workers share (%)	1218	3.651	3.795	0.040	19.256
Manuf: Manufaturing workers share (%)	1218	15.908	6.675	4.156	39.109
Skill: Share of individuals having a bachelor degree	1218	13.806	5.001	4.920	27.150
Income: Average annual income (million JPY)	1218	3.159	0.661	0	6.687
Density: Population density (1000persons/km2)	1218	3.261	4.429	0.026	19.812
Cox: Cox threshold (total votes/N of candidates)	1218	46.027	10.582	21.752	120.401
Hereditary: Hereditary candidates=1	1218	0.365	0.481	0	1

Table 3: Baseline results from bivariate probit

	[1]		[2]		[3]	
	Protectionist	Anti-TPP	Protectionist	Anti-TPP	Protectionist	Anti-TPP
Margin	-0.360***	-0.453***	-0.384***	-0.516***	-0.971***	-0.964***
	[0.102]	[0.109]	[0.104]	[0.115]	[0.239]	[0.265]
Margin-sq					0.146**	0.114*
					[0.0569]	[0.0687]
Gender	0.146	0.123	0.154	0.162	0.132	0.147
	[0.134]	[0.137]	[0.137]	[0.140]	[0.137]	[0.140]
Age	0.0190***	0.0211***	0.0176***	0.0193***	0.0165***	0.0185***
	[0.00429]	[0.00444]	[0.00431]	[0.00455]	[0.00436]	[0.00459]
Terms	-0.0284	-0.0212	-0.0295	-0.0224	-0.0165	-0.0132
	[0.0324]	[0.0295]	[0.0334]	[0.0332]	[0.0339]	[0.0333]
Expe	-0.0513	0.155	0.0887	0.412	0.106	0.429
	[0.301]	[0.307]	[0.292]	[0.310]	[0.291]	[0.309]
Former	0.0435	-0.297	0.145	-0.117	0.21	-0.061
	[0.226]	[0.250]	[0.224]	[0.246]	[0.228]	[0.246]
Incumb	-0.0508	0.282	-0.0506	0.383**	0.00627	0.431**
	[0.172]	[0.176]	[0.177]	[0.183]	[0.181]	[0.187]
Influence	0.940***	1.105***	0.779***	0.715***	0.773***	0.714***
	[0.159]	[0.176]	[0.172]	[0.195]	[0.170]	[0.196]
Organized	0.284***	0.326***	0.249***	0.249***	0.236***	0.238***
	[0.0902]	[0.0894]	[0.0910]	[0.0915]	[0.0907]	[0.0914]
Sentiment	0.687**	1.380***	0.693*	1.510***	0.667*	1.492***
	[0.329]	[0.368]	[0.354]	[0.387]	[0.351]	[0.385]
Agri			-0.0107	0.0891***	-0.0112	0.0893***
			[0.0156]	[0.0195]	[0.0156]	[0.0197]
Manuf			-0.00728	-0.0108	-0.00621	-0.0102
			[0.00698]	[0.00687]	[0.00701]	[0.00693]
Skill			-0.0420***	0.000684	-0.0398***	0.00277
			[0.0142]	[0.0138]	[0.0141]	[0.0138]
Income			-0.0477	-0.0925	-0.0416	-0.0892
			[0.0648]	[0.0593]	[0.0625]	[0.0587]
Density			-0.00274	-0.0290**	-0.00377	-0.0298***
			[0.0120]	[0.0113]	[0.0121]	[0.0115]
Cox			0.0104***	0.00912**	0.0102***	0.00891**
			[0.00353]	[0.00355]	[0.00363]	[0.00370]
Party dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.292	0.763**	0.844**	0.909**	1.270***	1.224**
	[0.285]	[0.304]	[0.409]	[0.450]	[0.431]	[0.477]
Rho	0.962***		1.005***		0.998***	
	[0.0729]		[0.0789]		[0.0789]	
Observations	1,218		1,218		1,218	
ll	-971		-930		-925	
df_m	30		42		44	
chi2	560		664		659	

Notes: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors clustered within a constituency are in brackets.

Table 4: Results of bivariate probit with endogenous variable

	[1]			[2]		
	Protectionist	Anti-TPP	Margin	Protectionist	Anti-TPP	Margin
Margin	-0.357***	-0.504***		-0.384***	-0.516***	
	[0.103]	[0.108]		[0.104]	[0.115]	
Gender	0.146	0.0842	-0.0658***	0.155	0.107	-0.0627***
	[0.134]	[0.136]	[0.0218]	[0.136]	[0.136]	[0.0213]
Age	0.0191***	0.0226***	-0.00437***	0.0179***	0.0206***	-0.00424***
	[0.00423]	[0.00435]	[0.000995]	[0.00426]	[0.00452]	[0.000974]
Terms	-0.0309	-0.00965	0.0716***	-0.0337	-0.00063	0.0721***
	[0.0328]	[0.0331]	[0.0155]	[0.0337]	[0.0366]	[0.0154]
Expe	-0.0246	0.327	-0.103**	0.12	0.542	-0.107**
	[0.304]	[0.382]	[0.0476]	[0.298]	[0.388]	[0.0490]
Former	0.069	-0.34	-0.0444	0.18	-0.166	-0.04
	[0.237]	[0.265]	[0.0858]	[0.236]	[0.259]	[0.0873]
Incumb	-0.055	0.306	0.321***	-0.0438	0.364*	0.313***
	[0.176]	[0.191]	[0.0571]	[0.179]	[0.198]	[0.0562]
Influence	0.937***	1.091***	0.0709	0.775***	0.709***	0.0707
	[0.159]	[0.181]	[0.0453]	[0.172]	[0.194]	[0.0433]
Organized	0.278***	0.326***	0.00303	0.245***	0.256***	0.00608
	[0.0902]	[0.0914]	[0.0237]	[0.0913]	[0.0937]	[0.0239]
Sentiment	0.711**	1.584***	-0.0418**	0.724**	1.800***	-0.0471**
	[0.321]	[0.461]	[0.0212]	[0.347]	[0.503]	[0.0227]
Agri				-0.00909	0.0853***	0.00532
				[0.0157]	[0.0192]	[0.00512]
Manuf				-0.00688	-0.0104	0.000269
				[0.00703]	[0.00708]	[0.00144]
Skill				-0.0414***	0.000716	0.00441*
				[0.0141]	[0.0149]	[0.00266]
Income				-0.051	-0.126*	-0.0180*
				[0.0661]	[0.0689]	[0.0107]
Density				-0.00184	-0.0261**	0.00219
				[0.0122]	[0.0114]	[0.00263]
Cox				0.00976***	0.0111***	0.00316**
				[0.00349]	[0.00367]	[0.00125]
Hereditary			0.237***			0.233***
			[0.0696]			[0.0701]
Party dummy	Yes	Yes		Yes	Yes	Yes
Constant	0.297	0.819***	1.551***	0.856**	0.972**	1.360***
	[0.286]	[0.307]	[0.0625]	[0.410]	[0.450]	[0.0965]
Observations	1,218			1,218		
ll	-1,695			-1,646		

Notes: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors clustered within a constituency are in brackets.

Table 5: Marginal effects of covariates

	Pr(1, 1)	Pr(0, 1)	Pr(1, 0)	Pr(0, 0)
Margin	-0.1572	0.0153	0.0398	0.1020
	(0.0332)	(0.0195)	(0.0149)	(0.0213)
Gender	0.0564	-0.0117	-0.0093	-0.0353
	(0.0422)	(0.0259)	(0.0191)	(0.0263)
Age	0.0065	-0.0012	-0.0012	-0.0041
	(0.0014)	(0.0008)	(0.0006)	(0.0009)
Terms	-0.0095	0.0033	0.0005	0.0057
	(0.0102)	(0.0063)	(0.0046)	(0.0063)
Experienced	0.0802	0.0332	-0.0531	-0.0603
	(0.0933)	(0.0532)	(0.0407)	(0.0583)
Former	0.0126	-0.0448	0.0316	0.0006
	(0.0665)	(0.0488)	(0.0376)	(0.0424)
Incumbent	0.0468	0.0586	-0.0623	-0.0431
	(0.0546)	(0.0347)	(0.0257)	(0.0340)
Influence	0.2692	-0.0727	-0.0311	-0.1654
	(0.0545)	(0.0329)	(0.0264)	(0.0347)
Organized	0.0891	-0.0206	-0.0131	-0.0554
	(0.0278)	(0.0176)	(0.0130)	(0.0174)
Sentiment	0.3704	0.0449	-0.1584	-0.2568
	(0.1196)	(0.0563)	(0.0438)	(0.0744)
Agri	0.0111	0.0134	-0.0144	-0.0101
	(0.0052)	(0.0032)	(0.0028)	(0.0035)
Manuf	-0.0031	0.0002	0.0009	0.0021
	(0.0021)	(0.0013)	(0.0009)	(0.0013)
Skill	-0.0086	0.0088	-0.0042	0.0040
	(0.0043)	(0.0026)	(0.0019)	(0.0027)
Income	-0.0238	-0.0017	0.0092	0.0163
	(0.0197)	(0.0114)	(0.0077)	(0.0121)
Density	-0.0049	-0.0031	0.0041	0.0039
	(0.0036)	(0.0022)	(0.0016)	(0.0022)
Cox	0.0035	-0.0010	-0.0004	-0.0022
	(0.0011)	(0.0006)	(0.0005)	(0.0007)

Notes: Pr(Protectionist=0/1, Anti-TPP=0/1). Standard errors are in parentheses.

Table 6: Results from the restricted sample to winners

	[1]All winners			[2]Winners in a single seat		
	Protectionist	Anti-TPP	Margin	Protectionist	Anti-TPP	Margin
Victory margin	-0.187	-0.539***		-0.231*	-0.377**	
	[0.117]	[0.126]		[0.133]	[0.158]	
Gender	0.0851	-0.223	-0.163	0.33	-0.684	0.0769
	[0.296]	[0.468]	[0.149]	[0.368]	[0.447]	[0.236]
Age	0.0144	0.0313**	-0.0139**	0.0168	0.0439**	-0.0175**
	[0.00924]	[0.0131]	[0.00570]	[0.0118]	[0.0182]	[0.00777]
Terms	-0.0308	0.0392	0.0485**	-0.0557	-0.0406	0.0247
	[0.0480]	[0.0656]	[0.0242]	[0.0546]	[0.0841]	[0.0327]
Experienced	-0.416	0.434	-0.0253	-0.304	0.729	0.0551
	[0.411]	[0.492]	[0.136]	[0.446]	[0.618]	[0.184]
Former	0.0968	-0.488	0.17	0.0895	-0.681*	0.271**
	[0.277]	[0.328]	[0.112]	[0.319]	[0.409]	[0.137]
Incumbent	-0.184	0.0841	0.757***	-0.135	-0.0221	0.883***
	[0.296]	[0.394]	[0.168]	[0.360]	[0.609]	[0.218]
Influence	0.678**	0.698	0.038	0.497	0.569	-0.0522
	[0.292]	[0.426]	[0.118]	[0.344]	[0.612]	[0.142]
Organized	0.337**	0.104	-0.0362	0.278	0.12	-0.0446
	[0.160]	[0.206]	[0.0736]	[0.192]	[0.247]	[0.0917]
Sentiment	3.770***	2.943***	-0.459***			
	[0.298]	[0.336]	[0.104]			
Agri	-0.021	0.0995**	-0.00308	-0.00334	0.175*	0.00734
	[0.0288]	[0.0434]	[0.0150]	[0.0400]	[0.0928]	[0.0202]
Manuf	-0.00994	-0.0112	-0.00374	-0.0201	7.86E-05	-0.00114
	[0.0122]	[0.0150]	[0.00552]	[0.0168]	[0.0262]	[0.00710]
Skill	-0.0376	0.0271	-0.0224**	-0.0252	0.0602	-0.0233
	[0.0242]	[0.0323]	[0.0108]	[0.0373]	[0.0438]	[0.0164]
Income	-0.0214	-0.079	-0.0244	-0.215	-0.244	-0.106
	[0.114]	[0.102]	[0.0446]	[0.246]	[0.177]	[0.0664]
Density	-0.0694***	-0.115***	0.0160*	-0.0824***	-0.154***	0.0169
	[0.0226]	[0.0296]	[0.00950]	[0.0293]	[0.0408]	[0.0104]
Cox	0.000372	-0.0115	0.00726**	0.00385	-0.0101	0.00923**
	[0.00665]	[0.00778]	[0.00347]	[0.00827]	[0.0107]	[0.00407]
Hereditary			0.288**			0.218*
			[0.116]			[0.130]
Party dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.368*	1.645	2.077***	1.873*	0.847	2.488***
	[0.705]	[1.070]	[0.420]	[1.052]	[1.602]	[0.596]
Observations	425	425	425	300	300	300
ll	-749	-749	-749	-511.8	-511.8	-511.8

Notes: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors clustered within a constituency are in brackets. Column [1] presents the results for winners in the election including candidates who failed to win in a single-seat constituency, but won a seat in a proportionally represented constituency. Column [2] shows the results for only winners in a single-seat constituency. Sentiment is omitted due to collinearity.