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## **Reciprocal Versus Unilateral Trade Liberalization: Comparing individual characteristics of supporters<sup>1</sup>**

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### Abstract

Reciprocity has been an influential principle leading actual trade liberalization, while unilateral trade liberalization has been politically unpopular in spite of gains from trade. Based on a survey of 10,816 individuals in Japan, we disaggregate people into four categories by their opinions on import liberalization and reciprocity. People working in the import-competing protected sector (agriculture in the Japanese case) tend to demand not only protection but also reciprocity in trade liberalization. Unilateral free traders are found among people working in non-agriculture sectors, in managerial occupations, or who are above the retirement age. We also confirm the effect of education on protectionism.

*Keywords:* Policy preference, Trade policy, Reciprocity, Unilateral trade liberalization,  
Survey data

*JEL classification:* F13

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## 1. Introduction

The concept of gains from trade is one of the most essential elements in basic economics. However, trade liberalization, especially *unilateral* trade liberalization, has been unpopular in many countries. As a result of such weak public supports, countries seldom open their markets unilaterally. The Britain's repeal of the Corn Law in 1846 and U.S. tariff cuts in early GATT rounds until the late 1950s are rare exceptions.<sup>1</sup> On the other hand, *reciprocal* trade liberalization obtains at least some extent of public supports and has led actual trade negotiations. This paper exploits individual-level data derived from a survey on around ten-thousand individuals in Japan, and identifies contrasts in individual characteristics not only between free traders versus protectionists but also between reciprocitarians versus non-reciprocitarians.<sup>2</sup>

In the agreement establishing the WTO (World Trade Organization), the member governments state that they enter into “reciprocal and mutually advantageous arrangements directed to the substantial reduction of tariffs and other barriers to trade” to achieve goals, such as raising standard of living. WTO actually imposes reciprocity, as any country is allowed to raise its tariffs when its trading partners will withdraw equivalent concessions. The reciprocity thus has a critical influence on actual trade liberalization.

The principle of reciprocity refers to the balance of “concessions.” From mercantilist viewpoint, trade negotiators regard import liberalization as “concessions.” Improved market access arguments often heard in public news on trade negotiations are analogous to the principle of reciprocity. The reciprocity argument has hence long been regarded as a political or mercantilist view, not rooted in orthodox economics. Bagwell and Staiger (1999), however,

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<sup>1</sup> Another example of unilateral liberalization includes recent tariff cuts by developing countries actively involved in offshoring, as analyzed by Baldwin (2010).

<sup>2</sup> Bhagwati and Irwin (1987) express people demanding reciprocity as “reciprocitarians.”

formalize reciprocity in standard trade theory and prove that reciprocal trade agreements can neutralize the terms-of-trade effect by large countries and thus improve welfare of trading countries. Bagwell and Staiger (2011) provide empirical evidence supporting their theoretical prediction.<sup>3</sup> Consequently, it is worthwhile for us to squarely pick up reciprocity and characterize supporters for reciprocity empirically based on individual data.

The empirical investigation of individual characteristics based on survey data is not new in trade literature. The work by Scheve and Slaughter (2001) is one of the pioneering studies on individual characteristics of protectionists in the U.S., while Mayda and Rodrik (2005) conduct an international comparison. Individual characteristics focused on by these previous studies have almost been limited to labor-market attributes of individuals, such as occupation and industry, for testing the consistency with orthodox trade theory. Blonigen (2011) revisits this issue and argues that such focus is insufficient.

This paper disaggregates people into the following four groups along the reciprocity dimension as well as support for import liberalization: Unilateral Free Traders, Reciprocal Free Traders, Reciprocal Protectionists, and Absolute Protectionists, based on a survey on 10,816 individuals in Japan. This sample size is notably larger than that in previous studies (at most 5,224 by Blonigen 2011). To preview our principal findings, people working in import-competing protected sector (agriculture in the Japanese case) are significantly likely to be protectionists demanding reciprocity. This suggests the possibility that public supports for import liberalization might expand if reciprocal concessions from trading partners are visibly attained. On the other hand, protectionists not valuing reciprocity tend to be less-educated,

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<sup>3</sup> As predicted by their terms-of-trade theory, Bagwell and Staiger (2011) empirically find that countries cut tariffs in trade negotiations more on those products where an increase in the import tariff has a larger terms-of-trade effect. Ossa (2011) revisits Bagwell and Staiger (1999)'s argument and finds that the reciprocity prevents governments from using an import tariff to attract a larger share of manufacturing production.

young, female or risk-averse, not necessarily working in agriculture sector. Unilateral Free Traders are found among people in managerial occupations or above the retirement age.

The rest of this paper is organized as follows. Section 2 describes our survey data and definitions of key variables used for our analyses. Section 3 reports estimation results and discusses which characteristics of individuals are particularly related with her/his preference on unilateral or reciprocal import liberalization. Section 4 adds concluding remarks.

## **2. Data description**

This section is devoted to explanations of our survey data.<sup>4</sup> Detailed descriptions will be additionally given in Appendix. The first sub-section explains the definitions of the variables critical for our research and summarizes their descriptive statistics. The basic information on the survey will be explained in the second sub-section.

### **2.1. Definitions of key variables and descriptive statistics**

As this paper tries to investigate individual characteristics of supporters for reciprocal or unilateral import liberalization, we ask related questions to surveyed individuals. First, to collect data on individual's opinion on trade liberalization, we ask the following question.<sup>5</sup>

*Answer what you think about the following opinion; "We should further liberalize imports to make wider varieties of goods available at lower prices."*

*(Choose one from the below.)*

- 1. Strongly agree.*
- 2. Rather agree.*

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<sup>4</sup> The survey was conducted by a commercial research company Intage under the contract with Research Institute of Economy, Trade and Industry (RIETI) for our research project at RIETI.

<sup>5</sup> Questions actually presented to surveyed individuals are expressed in italics in this paper. As questions are originally in Japanese, the authors translate them into English for this paper.

3. *Rather disagree.*
4. *Strongly disagree.*
5. *Cannot choose or Do not know.*

Based on the responses to this question, we define the binary dummy variable *IMP* for supporters for import liberalization. We categorize people choosing “strongly agree” or “rather agree” into free traders, and those choosing other three options into protectionists, but an alternative definition for this dummy will be introduced later to check the robustness.<sup>6</sup>

Similarly, we ask individual’s view on reciprocity by the following question.

*Answer what you think about the following opinion; “It is a loss for our country to liberalize imports when our trading partners keep their doors closed.”*

Respondents are required to choose one of the five options exactly as in the previous trade liberalization question. As in *IMP*, we define the binary dummy variable *REC* for reciprocitarians with responses choosing “strongly agree” or “rather agree” to this question. Again as in *IMP*, we also report results from an alternative definition of the variable later.

By combining these two questions, we disaggregate surveyed people into the following four groups.

$$\textit{Reciprocal Free Trader} = \textit{REC} * \textit{IMP} \quad (1)$$

$$\textit{Unilateral Free Trader} = (1 - \textit{REC}) * \textit{IMP} \quad (2)$$

$$\textit{Reciprocal Protectionist} = \textit{REC} * (1 - \textit{IMP}) \quad (3)$$

$$\textit{Absolute Protectionist} = (1 - \textit{REC}) * (1 - \textit{IMP}) \quad (4)$$

Among these four, people in the first group, as we label Reciprocal Free Traders, support import liberalization and at the same time believe that reciprocity is important in import

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<sup>6</sup> Percentage distributions of responses in the original five categories are reported in Appendix Table A1.

liberalization.<sup>7</sup> These individuals are supporting import liberalization of Japan as long as liberalization is reciprocal or because they believe that liberalization will be reciprocal. One possible interpretation of their position might be sought in their belief, expectation or demand that Japanese government will obtain reciprocal concessions from trading partners. This indicates that their supports for trade liberalization will be lost once liberalization turns out not to be reciprocal.

On the other hand, people in the second group, labeled as Unilateral Free Traders, support import liberalization but view reciprocity unimportant. We can interpret that they understand gains from trade in the sense of economics.<sup>8</sup> They support Japan's unilateral import liberalization even if trading partners keep their markets closed.

Next, we turn to protectionists. People in the third group, labeled as Reciprocal Protectionists, oppose import liberalization and favor reciprocity in import liberalization. These individuals are taking positions against import liberalization of Japan as long as liberalization is not reciprocal or because they believe that liberalization will not be reciprocal. One possible interpretation of their position might be motivated by their fear that Japan will not be able to gain reciprocal concessions from trading partners and forced to unilaterally liberalize imports. This, however, might also indicate that their opposition will be relieved once reciprocity is established.

Finally, people in the last group, labeled as Absolute Protectionists, oppose import liberalization but do not view reciprocity important. This indicates that their resistance to import liberalization will remain basically unchanged even after reciprocity is established.<sup>9</sup>

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<sup>7</sup> Conconi and Perroni (2012) prove that a reciprocal trade agreement proposed by the large country reinforces credibility of trade reforms by the small country in a two-country framework.

<sup>8</sup> Krishna and Mitra (2005) theoretically show that unilateral import liberalization by one country increases the incentives of export lobby in the partner country against the import-competing protectionist lobby and thus results in lower protection there.

<sup>9</sup> As this group of people regard reciprocity unimportant, it might be possible to call them as

Percentage distributions across these four groups are reported in Table 1. As the first point to note in the upper panel (A) of this table, no single group is dominant. In our sample, people are roughly evenly divided within variations from twenty to thirty percent. If a national referendum ballot were held, the decision would be reached with really a narrow margin. This suggests that comparing individual characteristics across these groups will be informative for predicting trade policy choices in the real world.

As shown in the lower panel (B) of Table 1, the distribution changes if we exclude people choosing “cannot choose or do not know.”<sup>10</sup> In the previous table, we included them into protectionists or non-reciprocitarians, since they are not active supporters for liberalization or reciprocity. Our motivation behind the inclusion of these individuals in the previous table is that indifferent or undecided people are likely to choose the status-quo or inaction option. As a result of this exclusion in (B), Absolute Protectionists become rare (less than nine percent), though the other three groups occupy proximate percentages (29 to 31%). Slightly more than sixty percent support import liberalization, while nearly sixty percent believe the value of reciprocity. If indifferent or undecided voters do not show up in the national referendum, the import liberalization policy, especially reciprocal liberalization, will be chosen with a safe margin.<sup>11</sup> However, these inactive voters may be susceptible to political campaigns from various interest groups including protectionists.

## **2.2. Description of the survey**

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Unilateral Protectionists in line with Unilateral Free Traders. We choose the expression Absolute Protectionists to imply that they request protection no matter how trading partners give concessions.

<sup>10</sup> We also try another alternative definition: free traders or reciprocitarians are limited to those “strongly” favoring import liberalization or reciprocity. However, according to this strict definition, more than eighty percent of the surveyed individuals fall into one category (Absolute Protectionists).

<sup>11</sup> As cited above, our survey questionnaire is accompanied with expressions emphasizing merits of imports. If respondents had been reminded of damages caused by import competition, the opposition may have occupied majority.



This sub-section describes the survey, from which we derive individual data for our research. We design the sample as representative of the entire Japan as possible in the composition across genders, regions, and ages,<sup>12</sup> and collect data from 10,816 individuals, approximately one out of ten thousand in Japan's total population. This sample size is substantially larger than those used in previous studies (at most 5,224 by Blonigen 2011).<sup>13</sup> The survey was conducted in October 2011.<sup>14</sup>

The survey collects such various data on basic individual characteristics as education, occupation, industry, income, age, and gender. The summary statistics for the variables, which will be included in logit estimation in the next section, are shown in Table 2.<sup>15</sup>

Among conventional variables repeatedly examined in previous literature on trade policy preferences, nearly forty percent of the surveyed individuals in our sample complete college, university or graduate school, roughly in line with that reported in education statistics.<sup>16</sup> The binary dummy *College educated* is for those individuals. Slightly more than ten percent are in managerial occupations, which are supposed to correspond to skilled labor in the factor proportions trade model.<sup>17</sup> Based on the data on annual income, this paper separates people earning ten million yen or more as *Rich* (two percent in our sample) by setting the threshold at

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<sup>12</sup> The survey sets the proportions of ten regions and twelve age-groups as approximate as those in the entire Japan reflected in the most recent population census. The survey covers people between 20 and 79 years old. Although 97% of the responses were via internet, the same questionnaire was printed on paper and sent by postal mail to people aged over sixty to reach old people without internet access.

<sup>13</sup> Although 28,456 people were covered by Mayda and Rodrik (2005), they are distributed over 23 countries.

<sup>14</sup> The survey also asks the damage by Great East Japan Earthquake occurred seven months prior to the survey, but trade policy preferences are not correlated with the damage.

<sup>15</sup> Original texts used as survey questions and response distributions are shown in Appendix.

<sup>16</sup> People currently enrolled in these higher-education institutions are included into this category. Although our survey collects more detailed data on educational attainments, no other groups are significantly different in their trade policy preferences and hence be omitted from our regressions.

<sup>17</sup> Although more detailed data on occupations are available in our survey, other occupational categories turn out to be insignificant in our regressions and thus be omitted from our analyses.

the obvious round-number.<sup>18</sup>

Merely one percent of the surveyed individuals are working in the agricultural sector (including forestry and fisheries).<sup>19</sup> In spite of this extremely limited share in population, the import liberalization of agricultural products is one of the most hotly debated issues in Japan's trade policy. Heavy protection of agriculture amid declining share of workers in that sector is often observed in many industrialized countries, and is consistent with various collective action models, such as Grossman and Helpman (1994).

We must note the peculiar importance of agriculture in Japan's trade policy and for global trade. Japan has been heavily protecting its agriculture sector (Japan's average tariff rate on agricultural products 16.6% substantially higher than that of European Union (13.2%) or United States (4.7%)). Japan's average tariff rate on non-agricultural products (2.6%) is lower than that of U.S. (3.2%) or E.U. (4.2%).<sup>20</sup> Japan's agriculture policy also has a non-negligible impact on global trade liberalization talks, as Japan is the major importer country. Consequently, import liberalization of agriculture products, not of manufactured products, is the pivotal issue in Japan's trade policy.

The survey also collects information on non-economic variables. The average age of surveyed individuals is fifty years old. As this survey is designed to represent the current ageing Japan, people older than 65 years old occupy nearly quarter of the sample. In Japan, many companies set the prefixed retirement age at 65 and the public pension payment begins at 65 in most cases. The dummy *Retired* is defined by this age threshold. Around half are female to

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<sup>18</sup> This survey chooses to ask income, as the question on total wealth or assets should result in many declines to answer.

<sup>19</sup> This percentage is slightly lower than that reported in the most recent population census (3.7%). Although more detailed industrial classifications are available in our survey, no other significant industrial differences are detected in our regressions.

<sup>20</sup> These are MFN applied rates in *World Tariff Profiles 2013* compiled by World Trade Organization.

reflect the demography.

To complement information from these basic variables, we add questions on individual's sentiment or belief related with policy preferences.<sup>21</sup> Exact texts used as the survey questions are shown in Appendix. The dummy *Risk averse* is defined to take the value one if people do not buy a lottery even with high probability (half) of winning.<sup>22</sup> Risk-averse people are likely to oppose trade liberalization due to high uncertainty associated with adjustment process after liberalization. In our sample, nearly one-third of respondents are classified as risk-aversers.

The next three binary dummy variables *Optimistic*, *Patriotic*, and *Self-sufficiency* are defined based on the surveyed individual's view on the following issues; how optimistic about future prospect of the Japanese economy, how proud of one's own country and hometown, and whether to limit imports of goods that can be supplied in the home country. As in the trade policy question, we define *Optimistic* and *Self-sufficiency* to take the value unity for those strongly or rather optimistic about future prospect of Japanese economy and strongly or rather agreeing with the opinion that we should not import goods that can be supplied from domestic sources. Nearly half of the surveyed individuals value self-sufficiency, while merely thirteen percent are optimistic. As around ninety percent of people are at least rather proud, we strictly define *Patriotic* only for those strongly proud of one's own country and hometown. As a result, slightly more than one-third of individuals are categorized as patriots in our sample. These three variables are supposed to be related with protectionist sentiments, as patriots, people sticking to self-sufficiency or people pessimistic about their own economy are likely to support protection

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<sup>21</sup> Bertrand and Mullainathan (2001) point out the problem of measurement errors in subjective survey data correlated with individual characteristics but show that this econometric problem is not serious when behavioral variables are used on the right-hand side of regressions as we do.

<sup>22</sup> In the same survey, we also ask whether she/he purchases a lottery with 1% to win with the price of the lottery and expected value of the prize kept the same. Among the surveyed people, 62% do not like to purchase this risky lottery. Based on the same survey data, Tomiura, Ito, Mukunoki, and Wakasugi (2013) examine how risk aversion and other behavioral biases are related with her/his support for import liberalization.

from imports.

Finally, the last three dummy variables in Table 2 capture other aspects of life associated with trade policy preferences of individuals. The first two of these three are based on the individual's willingness or acceptance of mobility (changing one's job or moving one's residence). These variables are introduced since people are likely to change jobs and/or places of living during process of adjustment after trade liberalization. Mobile people are supposed to relatively easily adapt to changes. In our sample, more than sixty percent of people are unwilling to change jobs or to move their residential locations. The last dummy *No Children* is for people without children. The motivation for defining this variable is that people with children tend to care about future wellbeing of their kids and thus have longer time horizon in their policy preferences compared with people without children, as formalized in dynasty model. Slightly more than one-third of surveyed individuals in our sample have no children.

### 3. Estimation results

This section reports estimation results from binary or multinomial logit models for different trade policy preferences. The estimation results will reveal how characteristics of individuals (e.g. education, occupation, industry, gender, and age) differ across groups.

#### 3.1. Binary estimation results

This sub-section reports estimation results from the logit model with *IMP* or *REC* as the dependent variable. The binary indicator  $y$  (*IMP* or *REC* in our case) equals zero if the underlying latent variable  $y^*$  in (5) is negative and unity otherwise.

$$y_j^* = x_j \beta + \varepsilon_j \quad (5)$$

The individual is indexed by  $j$ . The error term  $\varepsilon$  is distributed standard logistic, though our

principal results are qualitatively unaffected even with normal distribution. As  $x$  on the right-hand side, we include individual's characteristics, of which the summary statistics are shown in Table 2.<sup>23</sup> As we impose no structures on the individual's policy choice, the equation (5) should not be regarded as an indication of causality. We estimate the vector of parameters  $\beta$  for summarizing and comparing the characteristics of individuals in different policy preferences. The estimation results are displayed in Table 3. The first three columns show the results for free traders compared with protectionists, while the last three columns correspond to reciprocitarians compared with non-reciprocitarians. The columns (1) and (4) concentrate on orthodox variables repeatedly used in previous studies. The columns (2) and (5) add variables related with individual's sentiments or beliefs, while the variables statistically insignificant at 5% are dropped from the columns (3) and (6). Marginal effects, not coefficient estimates, are reported in the table.<sup>24</sup> The noteworthy findings are as follows.

First, our estimation results shown in the first three columns are in line with established results from previous literature on protectionists, such as Blonigen (2011), Mayda and Rodrik (2005), and Scheve and Slaughter (2001). Educated people, male, or people working in managerial occupations are free traders.<sup>25</sup> We also confirm that workers in import-competing protected sector, agriculture in the Japanese case, are protectionists. These observations are consistent with predictions from standard trade theory. Besides, in our sample, older people, especially after retirement, tend to support import liberalization.

Second, from the columns (2) and (3) of Table 3, we detect impacts of individual's sentiment or belief on her/his support for import liberalization. People believing the necessity of

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<sup>23</sup> If we include additional RHS variables, the overall fit improves but the interpretation of results becomes inevitably ad-hoc. We instead focus on the estimated coefficient on each RHS variable.

<sup>24</sup> For binary dummies on the right-hand side of logit regressions, the figures shown as "marginal effects" are the change in the probability due to the discrete change in each dummy from zero to one, keeping other variables at the mean.

<sup>25</sup> For gender differences in preferences, see Croson and Gneezy (2009) for example.

self-sufficiency or risk-aversers are protectionists, as expected. People optimistic about future prospect of the home economy tend to support free trade, possibly because they are confident in the strength of domestic industries. The impact of patriotism on protectionism turns out to be statistically insignificant in our sample. We also find that individuals reluctant to change their residential locations, and people having no children are more likely to be protectionists. These are statistically significant even after controlling for individual's education, income, and occupation.

For *REC* in the last three columns, agriculture workers are significantly likely to be reciprocitarians. Educated people, patriots, male, or people influenced by the self-sufficiency belief also tend to require trade negotiations to be reciprocal. On the other hand, risk-aversers or people reluctant to change their jobs appear not to demand reciprocity.

### 3.2. Multinomial results

While the individual characteristics respectively found from two separate binary logit models in the previous sub-section are informative, this sub-section reports estimation results from multinomial logit model to discuss comparisons across four different types of trade policy preferences: Unilateral Free Traders, Reciprocal Free Traders, Reciprocal Protectionists, and Absolute Protectionists.<sup>26</sup> The response probability  $Pr$  of the individual  $j$  for the outcome  $i$  is expressed by

$$\Pr\{z_j = i | x\} = \exp(x_j \gamma_i) / \left[ 1 + \sum_{h=1}^3 \exp(x_j \gamma_h) \right]. \quad (6)$$

Let  $z$  be a random variable taking on the values 0, 1, 2, or 3, each of which corresponds to the four trade policy preference patterns. A set of conditioning variables, denoted by a vector  $x$ , are

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<sup>26</sup> We have confirmed that our main results are largely unchanged even when we estimate four binary logit models separately.

kept the same as in (5) to facilitate comparisons. Since the probabilities must sum to unity, the numerator on the right-hand side of (6) is equal to the value one for  $\Pr\{z=0|x\}$ .

We estimate the parameter  $\gamma$  from the multinomial logit model as specified above.<sup>27</sup>

Although we also estimate the bivariate probit model with *IMP* and *REC*, our principal findings are qualitatively unaffected.<sup>28</sup> Marginal effects estimated from the multinomial logit are shown in Table 4 and Table 5. Undecided or indifferent individuals are included as a part of protectionists or non-reciprocitarians in Table 4, but are excluded from our estimation in Table 5. The main findings from the two tables are as follows.

As the most notable point in the tables, workers in import-competing protected industry (agriculture in the Japanese case) are concentrated in Reciprocal Protectionists, not evenly distributed across protectionists including Absolute Protectionists. Our estimation result also shows that working in non-agriculture sectors is significantly related with Unilateral Free Traders, rather than free traders in general including reciprocal free traders. This finding is robust at any conventional significance level irrespective of the definition.

Working in agriculture sector is significantly related with protectionism but at the same time with the demand for reciprocity. This suggests the possibility that they might relax their opposition to import liberalization if they believe that reciprocal concessions are given from trading partners. In other words, they strongly oppose liberalization at least partly because they fear that import liberalization will result in being unilateral without reciprocal concessions from other countries. The specific reasons why they predict that Japan will fail to get concessions from other countries are unclear from our limited survey data, but heavy export subsidies by large exporter countries, limited exports of Japanese agriculture products or their lack of

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<sup>27</sup> Maximum-likelihood estimation of multinomial probit model did not converge with reasonable rounds of iterations.

<sup>28</sup> The estimation results from bivariate probit are available upon request.

confidence in Japan's diplomacy should be among their concerns behind the reciprocity. We must also note, however, that the reciprocal concessions demanded by agriculture workers may be narrowly limited to increased exports of Japanese agriculture products, not Japanese exports in general, though our survey question on reciprocity cannot distinguish these two categories of exports. If this is the case, our finding that agriculture workers are Reciprocal Protectionists does not imply that we can easily expand public supports for free trade because balanced concessions within the single sector are hardly met in global trading system.

We also find that Absolute Protectionists are not necessarily working in agriculture sector. This observation can be interpreted as suggesting that people working in agriculture sector do not resist import liberalization if trading partners give sufficient concessions. This same finding also indicates, however, that Absolute Protectionists are widespread across sectors irrespective of the industry each individual are associated with. Strong support for import restriction in spite of limited share of agriculture in population often observed in many industrialized countries is consistent with this result. These findings on the relationship with agriculture sector are immensely informative for policy debates, as import liberalization of agriculture products has been and remains to be the pivotal issue in Japan's trade policy decision and one of the most persistent and influential issues for many trading partners in actual trade negotiations.

Second, patriotism is significantly related with demand for reciprocity among protectionists. People strongly proud of their homeland are significantly more likely to be Reciprocal Protectionists. As patriots often ignite public debates by nationalistic campaigns, trade liberalization agreements will face intense criticisms from protectionists especially when the government fails to obtain balanced concessions from trading partners. Reciprocal trade liberalization is thus critical in gaining supports from patriots. In other words, we can expand supports for trade liberalization by focusing on Reciprocal Protectionists, who are found



significantly more likely to be agriculture workers and/or patriots.

Third, educated people tend to be Unilateral Free Traders. While they tend to support free trade, individuals with college education are significantly more likely to be Unilateral Free Traders, not Reciprocal Free Traders, when we exclude indifferent or undecided people. They support import liberalization not because of their expectations of comparably expanding export opportunities into foreign markets, but possibly because of their belief in gains from trade as explained in economics textbooks. As an alternative possible interpretation, these individuals might expect that Japan's unilateral action will trigger liberalization by trading partners in the long run, as predicted by Krishna and Mitra (2005). Their supports for liberalization remain stable even if agreements are finalized without reciprocity. On the other hand, we also find that people without college education tend to be found among Absolute Protectionists, not Reciprocal Protectionists, especially when indifferent or undecided people are included in Table 4. Their opposition against import liberalization will remain even if comparable concessions from trading partners are assured.

This finding of significant relation with college education is consistent with previous studies of protectionists. For example, Baron and Kemp (2004) find that people supporting import restrictions score low in the test of comparative advantage concept. Blonigen (2011) also reports the importance of education in trade policy preferences even among retirees.<sup>29</sup> Our results additionally reveal that college education is not strongly related with the demand for reciprocity.

Among other variables, whether people like to change residential locations are significantly related with the contrast between Reciprocal Protectionists versus Unilateral Free Traders. The residential mobility hence appears to be associated with one's trade policy

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<sup>29</sup> Hainmueller and Hiscox (2006) find that the effects of education on individual policy preferences are not mainly through direct skill-based distributional concerns but through exposures to ideas.

preference as expected, though similar impact is mostly statistically insignificant for job mobility.

Fourth, retired people are significantly more likely to favor unilateral trade liberalization. People before the retirement age tend to be found in the other three groups, but the relation with Reciprocal Protectionists is particularly weak. This finding of significantly positive impact of retirement on the support for unilateral import liberalization is consistent with the interpretation that retired people no longer form their trade policy preferences as producers/workers but more as consumers. We must note that this age effect is detected even after controlling for the individual's income, education or occupation, though our survey collects no direct data on retirement. As the share of aged people is increasing not only in matured advanced economies but also in some developing economies as well around the globe, whether the ageing of population actually results in rising supports for import liberalization and saturated call for reciprocity remains to be seen with attentions. As a related finding, we also find the direct age effect; younger people tend to support protectionism, while older people tend to support import liberalization. No direct age effect is found in the reciprocity dimension.<sup>30</sup>

Finally, some variables are significantly related with division between free traders versus protectionists, but not with that between reciprocitarians versus non-reciprocitarians. For example, female are protectionists, but the gender appears not to be strongly related with the reciprocity dimension.<sup>31</sup> The self-sufficiency belief is strongly related with protectionists, not with reciprocitarians, since the individual's conviction that we should depend on domestic supplies is naturally associated with her/his support for import restriction rather than for

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<sup>30</sup> The significantly negative coefficient on the interactive term (*Age\*Retired*) indicates that the age effect on the support for unilateral trade liberalization dilutes after the retirement age.

<sup>31</sup> Female are significantly less likely to be Reciprocal Protectionists, however, if we narrowly define them by limiting to people "strongly" favoring reciprocity and not strongly supporting import liberalization.

expansions of export opportunities. Similarly, risk-averse people tend to be protectionists, not noticeably related with their demand for reciprocity.

#### **4. Concluding remarks**

This paper has disaggregated people into four groups based on the individual's opinion on import liberalization and reciprocity, and compared individual characteristics based on a survey on 10,816 individuals in Japan. Workers in import-competing protected sector (agriculture in the Japanese case) tend to be protectionists, as in line with established results from previous literature, but, as our new finding, protectionists demanding reciprocity in import liberalization. This finding suggests that opposition against import liberalization might be somewhat relaxed if reciprocity is visibly attained in future trade agreements. In other words, reciprocity is thus critical in expanding public supports for free trade, as agriculture workers are the most active opponents against import liberalization. On the other hand, Absolute Protectionists, who remain to favor protection even after reciprocal concessions from trading partners, tend to be less educated, young, female or risk-averse, not necessarily working in agriculture sector. People in managerial occupations or retired old people tend to support trade liberalization even if initiated unilaterally.

While the characterization of reciprocitarians distinguished from protectionists based on individual survey data is new as far as we know, several extensions will enrich investigations of this issue. Among them, whether reciprocitarians support regulations on immigration or multinational corporations, for example, will be particularly informative for public policy debates. Comparisons with other policy options will be useful as well.

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Table 1 Distribution of trade policy preferences in Japan

(A) Baseline classification

Import liberalization Reciprocity	Agree (Free Traders)	Disagree (Protectionists)	Total
Agree (Reciprocal)	20.63	25.37	46.00
Disagree(Unilateral)	30.82	23.18	54.00
Total	51.45	48.55	100

(Notes) Shown are percentages in surveyed all individuals (10,816 people).

(B) Excluding “cannot choose or do not know”

Import liberalization Reciprocity	Agree (Free Traders)	Disagree (Protectionists)	Total
Agree (Reciprocal)	30.68	29.03	59.72
Disagree(Unilateral)	31.38	8.90	40.28
Total	62.07	37.93	100

(Notes) Percentages are among 7,272 individuals.

Table 2 Summary statistics

Variable	Average	Standard deviation
<i>Import liberalization</i>	0.5144	0.4998
<i>Reciprocity</i>	0.4599	0.4984
<i>College educated</i>	0.3958	0.4890
<i>Managerial occupation</i>	0.1163	0.3206
<i>Agriculture sector</i>	0.0104	0.1012
<i>Rich</i>	0.0214	0.1446
<i>Age</i>	50.0118	16.5976
<i>Retired</i>	0.2374	0.4255
<i>Female</i>	0.5037	0.5000
<i>Risk averse</i>	0.3159	0.4649
<i>Optimistic</i>	0.1316	0.3380
<i>Patriotic</i>	0.3571	0.4792
<i>Self sufficiency belief</i>	0.4629	0.4986
<i>No job mobility</i>	0.6931	0.4612
<i>No residential mobility</i>	0.6454	0.4784
<i>No children</i>	0.3556	0.4787

(Notes) All variables except *Age* are binary dummies.

Table 3 Marginal effects on support for import liberalization or for reciprocity

	(1) <i>IMP</i>	(2) <i>IMP</i>	(3) <i>IMP</i>	(4) <i>REC</i>	(5) <i>REC</i>	(6) <i>REC</i>
<i>College educated</i>	0.0589*** (0.0108)	0.0662*** (0.0116)	0.0672*** (0.0115)	0.0306*** (0.0105)	0.0291*** (0.0108)	0.0274*** (0.0106)
<i>Managerial occupation</i>	0.0871*** (0.0167)	0.0742*** (0.0177)	0.0771*** (0.0175)	-0.0194 (0.0160)	-0.0136 (0.0164)	-----
<i>Agriculture sector</i>	-0.2547*** (0.0416)	-0.2129*** (0.0462)	-0.2129*** (0.0462)	0.1745*** (0.0459)	0.1352*** (0.0482)	0.1374*** (0.0480)
<i>Rich</i>	0.0981** (0.0371)	0.0722* (0.0377)	-----	-0.0279 (0.0340)	-0.0098 (0.0341)	-----
<i>Age</i>	0.0060*** (0.0005)	0.0070*** (0.0006)	0.0069*** (0.0006)	-0.0011** (0.0004)	-0.0010* (0.0005)	-----
<i>Retired</i>	0.2907* (0.1481)	0.3265** (0.1495)	0.3285** (0.1490)	-0.2612* (0.1435)	-0.2871* (0.1441)	-----
<i>Age* Retired</i>	-0.0051** (0.0025)	-0.0055** (0.0027)	-0.0056** (0.0027)	0.0044* (0.0024)	0.0049* (0.0025)	-----
<i>Female</i>	-0.1746*** (0.0103)	-0.1600*** (0.0112)	-0.1613*** (0.0111)	-0.0661*** (0.0103)	-0.0837*** (0.0108)	-0.0811*** (0.0104)
<i>Risk averse</i>	-----	-0.1050*** (0.0116)	-0.1049*** (0.0116)	-----	-0.0220** (0.0109)	-0.0215** (0.0108)
<i>Optimistic</i>	-----	0.0868*** (0.0156)	0.0853*** (0.0156)	-----	-0.0066 (0.0149)	-----
<i>Patriotic</i>	-----	-0.0158 (0.0112)	-----	-----	0.0448*** (0.0105)	0.0458*** (0.0104)
<i>Self sufficiency</i>	-----	-0.3281*** (0.0097)	-0.3300*** (0.0096)	-----	0.2301*** (0.0096)	0.2299*** (0.0096)
<i>No mobility (jobs)</i>	-----	-0.0198 (0.0130)	-----	-----	-0.0364*** (0.0122)	-0.0334*** (0.0109)
<i>No mobility (residential)</i>	-----	-0.0372*** (0.0124)	-0.0423*** (0.0119)	-----	0.0143 (0.0116)	-----
<i>No children</i>	-----	-0.0327** (0.0132)	-0.0327** (0.0132)	-----	-0.0068 (0.0123)	-----
Log likelihood	-7089.51	-6495.63	-6499.32	-7417.67	-7108.06	-7113.07

(Notes) The dependent variable in the binary logit model for each column is shown in the top row. Robust standard errors are in parentheses. Constant term is included but omitted. Statistical significance is expressed by asterisks: \*\*\* 1%, \*\* 5%, and \* 10%. 10,816 individuals are included in all cases.



Table 4 Marginal effects on trade policy preferences

	Reciprocal Free Traders	Unilateral Free Traders	Reciprocal Protectionists	Absolute Protectionists
<i>College educated</i>	0.0314*** (0.0091)	0.0345*** (0.0105)	-0.0026 (0.0093)	-0.0633*** (0.0091)
<i>Managerial occupation</i>	0.0205 (0.0134)	0.0563*** (0.0158)	-0.0268* (0.0145)	-0.0500*** (0.0153)
<i>Agriculture sector</i>	-0.0360 (0.0378)	-0.1803*** (0.0345)	0.1742*** (0.0460)	0.0421 (0.0440)
<i>Rich</i>	0.0085 (0.0278)	0.0732** (0.0332)	0.0151 (0.0345)	-0.0969*** (0.0319)
<i>Age</i>	0.0021*** (0.0005)	0.0048*** (0.0005)	-0.0033*** (0.0005)	-0.0037*** (0.0005)
<i>Retired</i>	-0.1974*** (0.0748)	0.5723*** (0.1384)	-0.1168 (0.1153)	-0.2581*** (0.0804)
<i>Age * Retired</i>	0.0031 (0.0020)	-0.0087*** (0.0023)	0.0010 (0.0023)	0.0046** (0.0023)
<i>Female</i>	-0.1160*** (0.0091)	-0.0430*** (0.0101)	0.0349*** (0.0092)	0.1242*** (0.0091)
<i>Risk averse</i>	-0.0487*** (0.0089)	-0.0552*** (0.0100)	0.0287*** (0.0096)	0.0753*** (0.0097)
<i>Optimistic</i>	0.0456*** (0.0130)	0.0401*** (0.0141)	-0.0523*** (0.0119)	-0.0334*** (0.0126)
<i>Patriotic</i>	-0.0064 (0.0088)	-0.0088 (0.0100)	0.0505*** (0.0092)	-0.0353*** (0.0089)
<i>Self sufficiency</i>	-0.0496*** (0.0080)	-0.2792*** (0.0086)	0.2817*** (0.0086)	0.0471*** (0.0082)
<i>No mobility (jobs)</i>	-0.0235** (0.0106)	0.0040 (0.0117)	-0.0122 (0.0106)	0.0318*** (0.0100)
<i>No mobility (residential)</i>	-0.0109 (0.0099)	-0.0261** (0.0113)	0.0250** (0.0098)	0.0120 (0.0098)
<i>No children</i>	-0.0177* (0.0104)	-0.0153 (0.0118)	0.0111 (0.0106)	0.0220** (0.0108)
Log likelihood	-13543.465			

(Notes) The four options in the multinomial logit model are shown in the top row. See notes to Table 3. 10,816 individuals are covered.

Table 5 Alternative definition (excluding “cannot choose or do not know”)

	Reciprocal Free Traders	Unilateral Free Traders	Reciprocal Protectionists	Absolute Protectionists
<i>College educated</i>	0.0108 (0.0127)	0.0392*** (0.0127)	-0.0350*** (0.0117)	-0.0150** (0.0074)
<i>Managerial occupation</i>	0.0017 (0.0175)	0.0626*** (0.0178)	-0.0536*** (0.0163)	-0.0107 (0.0119)
<i>Agriculture sector</i>	-0.0284 (0.0573)	-0.1848*** (0.0446)	0.2277*** (0.0622)	-0.0145 (0.0341)
<i>Rich</i>	-0.0266 (0.0359)	0.0390 (0.0349)	0.0064 (0.0399)	-0.0188 (0.0236)
<i>Age</i>	0.0015** (0.0007)	0.0048*** (0.0006)	-0.0050*** (0.0006)	-0.0014*** (0.0004)
<i>Retired</i>	-0.3574*** (0.0954)	0.7063*** (0.1166)	-0.1927* (0.1087)	-0.1563** (0.0675)
<i>Age*</i> <i>Retired</i>	0.0015** (0.0007)	-0.0115*** (0.0028)	0.0025 (0.0029)	0.0032 (0.0021)
<i>Female</i>	-0.0811*** (0.0127)	-0.0365*** (0.0127)	0.0926*** (0.0121)	0.0250*** (0.0079)
<i>Risk averse</i>	-0.0519*** (0.0131)	-0.0337*** (0.0128)	0.0533*** (0.0128)	0.0323*** (0.0086)
<i>Optimistic</i>	0.0216 (0.0165)	0.0377** (0.0162)	-0.0672*** (0.0141)	0.0078 (0.0102)
<i>Patriotic</i>	-0.0386*** (0.0122)	0.0010 (0.0122)	0.0472*** (0.0115)	-0.0096 (0.0073)
<i>Self sufficiency</i>	-0.0928*** (0.0112)	-0.3142*** (0.0104)	0.3540*** (0.0102)	0.0531*** (0.0067)
<i>No mobility</i> <i>(jobs)</i>	-0.0160 (0.0147)	0.0185 (0.0143)	-0.0149 (0.0136)	0.0124 (0.0082)
<i>No mobility</i> <i>(residential)</i>	-0.0070 (0.0140)	-0.0361** (0.0139)	0.0425*** (0.0124)	0.0006 (0.0080)
<i>No children</i>	-0.0126 (0.0151)	-0.0123 (0.0148)	0.0097 (0.0138)	0.0151 (0.0094)
Log likelihood	-8399.7451			

(Notes) 7,272 individuals are covered. See notes to Table 3.

## **Appendix** Survey questions and basic statistics

The exact texts used for the survey questions are reproduced in italics letters as follows. The response distributions in percentages are shown in parentheses.

*Answer your educational attainment.*<sup>32</sup> *Choose one from the following.*

*Junior high school (finished) [2.8%], Senior high school (dropped) [1.2%],  
Senior high school or professional school (finished) [39.6%], Junior college  
(dropped) [1.6%], Junior college (currently enrolled) [0.5%], Professional  
school (currently enrolled) [0.6%], Junior college (finished) [11.6%], University  
(undergraduate) (dropped) [2.0%], University (undergraduate or graduate)  
(currently enrolled) [5.4%], University (undergraduate or graduate) (finished)  
[34.2%], Other school [0.6%]*

*Answer your occupation. (If you are retired or unemployed, please answer the occupation which  
you have experienced for the longest period in your carrier.) Choose one from the  
following.*

*Production and other operations [6.6%], Sales, clerical, or services [35.9%],  
Managerial occupation [12.5%], Professional or technical occupation [28.4%],  
Never worked or at school [2.8%]*

*Answer the industry in which you working. (If you are retired or unemployed, please answer the  
industry in which you have worked for the longest period in your carrier.) Choose one  
from the following.*

*Food, beverage, and tobacco manufacturing [2.4%], Textile and apparel [1.5%],  
Paper, pulp, lumber products, and printing [0.7%], Chemical products [1.5%],*

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<sup>32</sup> In Japan, six years in elementary school and three years in junior high school are legally compulsory. After three years in senior high school, one choose higher education in university (four years in undergraduate followed by graduate education), two- or three-year junior college, or various types of professional schools. This explanation is for this paper, not presented in the survey question.

*Metals and steel* [1.3%], *Machine* [2.5%], *Miscellaneous manufacturing* [9.2%],  
*Mining* [0.1%], *Agriculture, fishery, and forestry* [1.1%], *Construction* [5.5%],  
*Electricity, gas, and water supply* [1.2%], *Transportation and distribution* [4.1%],  
*Telecommunication* [5.3%], *Medical, welfare, and health care* [7.5%], *Education*  
[7.1%], *Wholesale and retail trade* [10.7%], *Catering, restaurants and lodging*  
[4.3%], *Finance, insurance, and real estate* [6.6%], *Miscellaneous services* [18.9%],  
*Government services* [5.8%], *Never worked or at school* [2.7%]

Answer your personal annual income (before tax). Choose one from the following.

*0 yen* [10.0%], *1 to less than 100 (ten thousand yen)* [17.5%], *100 to less than 200* [12.7%], *200 to less than 300* [14.1%], *300 to less than 400* [11.8%], *400 to less than 500* [8.4%], *500 to less than 600* [5.0%], *600 to less than 700* [3.2%],  
*700 to less than 800* [2.4%], *800 to less than 900* [1.4%], *900 to less than 1000*  
[1.1%], *1000 to less than 1200* [1.1%], *1200 to less than 1500* [0.6%], *1500 to less than 1800* [0.1%], *1800 to less than 2000* [0.1%], *Not less than 2,000 (ten thousand yen)* [0.2%], *Decline to answer.* [10.1%]

Do you have a child?      Yes [64.4%], No [35.6%]

Answer what you think about the following opinion; “We should try not to import goods that can be supplied in the home country even if we pay higher prices or heavier tax.” Choose one from the below.

*Strongly agree.* [7.3 %], *Rather agree.* [39.0 %], *Rather disagree.* [30.7 %],  
*Strongly disagree.* [7.3 %], *Cannot choose or Do not know.* [15.7 %]

Would you buy a lottery with 1/2 chance to win 20,000 yen and 1/2 chance to get nothing (sold at 2,000 yen)?      Yes. [68.4 %], No. [31.6 %]

*How do you view the future prospect of the Japanese economy? Choose one from the following.*

*Very optimistic [0.6 %], Rather optimistic [12.5 %], Rather pessimistic [52.4 %],*

*Very pessimistic [22.1 %], Cannot choose or Do not know [12.3 %]*

*How do you feel about culture, society and tradition of your country and hometown? Choose one from the below.*

*Very proud [35.7 %], Rather proud [55.2 %], Rather not proud [2.8 %], Not*

*proud at all [0.7 %], Cannot choose or Do not know [5.6 %]*

*Do you like to change residence/jobs? Choose one from the below.*

*1. I do (I have a plan.) [Job 11.3 %, Residence 8.9 %]*

*2. I do if I have an opportunity. [Job 24.2 %, Residence 21.8 %]*

*3. I do not if possible. [Job 18.8 %, Residence 16.9 %]*

*4. I do not. [Job 45.8 %, Residence 52.4 %]*

Appendix Table A1 Percentage distributions of responses to import liberalization and reciprocity

Import Liberalization Reciprocity	Strongly Agree	Rather Agree	Rather Disagree	Strongly Disagree	Cannot Choose or Do Not Know	Total
Strongly Agree	0.91	1.96	2.68	1.71	0.70	7.96
Rather Agree	2.03	15.73	13.66	1.47	5.14	38.03
Rather Disagree	2.95	14.53	4.89	0.43	1.97	24.76
Strongly Disagree	2.15	1.48	0.38	0.29	0.16	4.45
Cannot choose or Do Not Know	0.92	8.80	5.31	0.67	9.10	24.79
Total	8.95	42.50	26.92	4.56	17.07	100

(Notes) Percentages are among surveyed 10,816 individuals.