RIETI Discussion Paper Series 13-E-009

Endowment Effect and Trade Policy Preferences: Evidence from a survey on individuals

TOMIURA Eiichi
RIETI

ITO Banri
RIETI

MUKUNOKI Hiroshi
Gakushuin University

WAKASUGI Ryuhei
Kyoto University

RIETI
Research Institute of Economy, Trade & Industry, IAA

The Research Institute of Economy, Trade and Industry
http://www.rieti.go.jp/en/

RIETI Discussion Paper Series 13-E-009
February 2013

Endowment Effect and Trade Policy Preferences: Evidence from a survey on individuals

TOMIURA Eiichi*, Yokohama National University and RIETI,
ITO Banri, Senshu University and RIETI,
MUKUNOKI Hiroshi, Gakushuin University,
WAKASUGI Ryuhei, Kyoto University, Yokohama National University and RIETI

Abstract

The endowment effect, established by behavioral economics, is regarded as a cause of inertia. This paper examines its effects on trade policy preferences of 10,000 individuals in Japan. People strongly influenced by the endowment effect are significantly more likely to oppose import liberalization even after controlling for the individual's characteristics including his/her risk aversion. This suggests that income compensation and insurance schemes are insufficient for expanding political support for free trade. We also confirm the significant effects of industry, occupation, income, gender, and education. Retired people tend to support import liberalization, possibly as consumers rather than producers/workers.

Keywords: Policy preference; Trade policy; Endowment effect
JEL Classifications: D03; F13

* Corresponding author, Department of Economics, Yokohama National University, 79-3 Tokiwa-dai, Hodogaya-ku, Yokohama City 240-8501, Japan. E-mail: tomiura@ynu.ac.jp

1. Introduction

Although international economists almost unanimously support free trade, import restrictions prevail in many countries. Protectionism is powerful, backed by scarce factors in import-competing industries. Trade policy preferences of individuals are, however, not sufficiently explained by economic factors, such as industry, occupation, skill, or income, as reported by previous research of individual characteristics from survey data (e.g. Blonigen 2011; Mayda and Rodrik 2005; Scheve and Slaughter 2001). In exploring non-economic factors, anomalies reported by behavioral economics provide us with some insightful clues.[1] Among various behavioral biases, the endowment effect, which is defined by an asymmetry in willingness to pay/buy and willingness to accept/sell, is regarded as a cause of inertia from status quo. This paper empirically examines the endowment effect on trade policy preferences based on a survey on around ten thousand individuals in Japan.

Preferences of individuals on trade policy have been analyzed in previous literature, but the main focus has been the impacts of standard economic variables, especially labor market attributes of individuals. Blonigen (2011) finds that the impacts of these factors on trade policy preferences are not robust and concludes that “our theories for what drives trade policy preferences need to be revisited” (p.129). As the conventional trade theory fails to sufficiently explain observed policy preferences, the investigation of behavioral factors will reveal unexplored insights. This paper is intended to fill this research gap, as none has so far discussed the effect of behavioral biases on trade policy preferences.

Research results from behavioral economics have deep implications for various branches of economics, including behavioral finance and behavioral game theory. The application to international economics, however, has been so far seriously limited, to our best knowledge. As a

[1] See the survey by DellaVigna (2009) for example.

rare example, Tovar (2009) introduces the concept of loss aversion, distinguished from risk aversion, into international trade theory for explaining why political supports for protections are strong in declining industries.[2]

Among many observed behaviors inconsistent with the orthodox optimization model, the endowment effect has been replicated in many experimental and field studies, but has not yet been applied to international trade. In the seminal experiment on exchanges of mugs by Kahneman et al. (1990), the median subject not endowed with a mug is willing to pay only around half the price the median subject endowed with a mug is willing to accept. Such a substantial asymmetry, which can be formalized by reference-dependent utility function, has deep implications for economics such as low volume of trade. If applied to the context of policy preference, people strongly influenced by the endowment effect are likely to resist such policies as those changing the status quo. If this effect is strong, people oppose trade liberalization not because of their fear of income loss or their fear of risky outcome but because of their preference of the current state. This paper is the first application of the endowment effect to trade policy preferences, as far as the authors know.

To preview our principal findings, people significantly influenced by the endowment effect, distinguished from risk aversion, tend to oppose import liberalization even after controlling for various characteristics of individuals. This finding has deep policy implications as income redistribution or insurance scheme is insufficient to expand political supports for free trade.[3] Our research will hopefully contribute to a behavioral approach to trade policy, where a wide gap persists between theoretical predictions from standard models and trade policy preferences of individuals in the real world.

---

2 Freund and Özden (2008) is another example of the application of loss aversion to the analysis of trade protection.

3 In the orthodox optimization framework, Eaton and Grossman (1985) formalize tariff protection as a substitute for incomplete insurance markets.

The rest of this paper is organized as follows. Section 2 describes our survey data. Section 3 reports our regression results. Section 4 adds concluding remarks.

2. Data description

This section describes our survey data.[4] Our sample is composed of 10,816 individuals in Japan, 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).[5] We design the sample as representative of the entire Japan as possible in the composition across genders, ten regions, and twelve age-groups.[6] The survey was conducted in October 2011.[7]

The summary statistics are shown in Table 1. As this survey is designed to represent the current 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*, later used in regressions, is defined by this age threshold.

To investigate the impacts of conventional factors on policy preferences, the survey collects data, such as income, occupation, industry, education, and gender of individuals. 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 the obvious round-number. Slightly more than ten percent are in managerial occupations, while other occupations are also captured in the survey. Merely one percent of the surveyed individuals are working in the agricultural

[4] 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.
[5] Although 28,456 people were covered by Mayda and Rodrik (2005), they are distributed over 23 countries.
[6] The survey covers people between 20 and 79 years old. Although 97% of the responses were via internet, the same questionnaire was printed and sent by postal mail to people aged over sixty to reach old people without internet access.
[7] The survey also asks the damage by Great East Japan Earthquake occurred seven months prior to the survey, but the preference on import liberalization is not correlated with the damage.

sector (including forestry and fisheries).[8] 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. Nearly forty percent of the surveyed individuals finish college, university or graduate school, roughly in line with that reported in education statistics. The dummy *Educated* is for those individuals. Around half are male to reflect the demography.

Our main question is on trade liberalization, by asking whether the individual agrees with or oppose the opinion that import should be further liberalized. We count "strongly agree" or "rather agree" as supporting import liberation, but include not only "strongly oppose", "rather oppose" but also "indifferent or do not know" as opposing liberalization. As robustness checks, we will later report results from alternative definitions: focusing narrowly only on those who "strongly agree" or excluding "indifferent or do not know." In our sample, people supporting and people opposing import liberalization are roughly equal in number.[9] This indicates that the country is evenly divided on trade policy. If a national referendum ballot were held on import liberalization, the decision would be reached with really a narrow margin. Consequently, investigating how people form their policy preferences is critical for policy decisions in the real world.

On the responses to behavioral questions, nearly seventy percent of the individuals buy a lottery with 50% chance to win, but less than forty percent buy a lottery with 1% chance to win even if the expected value and the price of the lottery are the same. The gap between these two lotteries indicates a deviation from risk-neutrality. We will define the risk aversion dummy *RiskAv* for an individual who does not buy a safer lottery sold at two thousand yen with a 50% chance to win twenty thousand yen.

---

[8] This percentage is slightly lower than that reported in the most recent population census (3.7%).
[9] If we exclude "indifferent or do not know", the percentage of people supporting import liberalization rises to 62.0%.

The survey result shows that more than sixty percent of the individuals do not buy a lottery with 1% chance to win one million yen but more than seventy percent do not sell the same lottery at the same price (two thousand yen) if they already possess it.[10] This result confirms that how the endowment effect is prevalent in our society. We will define the dummy *Endow*, which takes the value one when an individual does not buy a lottery with 1% chance to win but does not sell the same lottery at the same price.

Correlation matrix between the variables is summarized in Table 2. Supporting import liberalization is relatively correlated with working in managerial occupation and being male. Endowment effect and risk aversion are somewhat correlated. Educated people are slightly less likely to be influenced by endowment effect, suggesting a role of education in trade policy preference formation. The correlations between variables, however, are low in almost all combinations.

To further explore the relations among variables, Table 3 reports the multiple regression results. The result shown in the first column is from the logit regression of the endowment effect dummy *Endow* as the dependent variable.[11] All 10,816 individuals are covered. The endowment effect is significantly related with the risk aversion at the individual level. People finishing college, university, or graduate schools are significantly less likely to be influenced by the endowment effect. Although we should be cautious in reaching any conclusion on the effect of education on behavioral bias, this finding at least suggests that college education and the influence of endowment effect appears to be negatively correlated. The endowment effect tends to be significantly observed among people older than the retirement age, though it gradually

[10] We first ask whether you buy a lottery. Then, in a separate question, we ask whether you sell the same lottery if you already possess it. The respondents are informed that the receipt of prize is one year later in the second question.

[11] Bertrand and Mullainathan (2001) point out the problem of measurement errors in subjective survey data correlated with individual characteristics. They show that this econometric problem is however not serious when we use behavioral variables on the right-hand side of regressions as we do in the next section.

decreases with the age. Male is significantly less affected by the endowment effect than female. On the other hand, working in agriculture sector, working in managerial occupations, or earning high income tends to be *not* significantly associated with the endowment effect on that individual's decision.

The column (2) of Table 3 reports the logit regression with the education dummy (finishing college or higher) *Educated* as the dependent variables. As a noteworthy point, the education has a significantly negative relation with the endowment effect, but has no significant relation with the risk aversion. While both are deviations from the risk neutrality, the relation with education shows a marked contrast. Educated people are significantly more likely to be male, earn high income, work in managerial occupations, and work in non-agriculture sectors. Reflecting the consistently rising college enrollment in Japan, college education and age are negatively related.

3. Estimation results

3.1. Basic results

This section reports our empirical results from regressions to investigate whether the endowment effect on trade policy preferences is significant at the individual level after controlling for relevant economic variables. The robustness of the results reported in this section will be checked in the next section with alternative definitions/models.

As the main variable in our analysis, *IMP* is the binary dummy variable taking the value one when the individual favors the opinion that import should be further liberalized and zero when she/he opposes it. We include not only "strongly agree" but also "rather agree" into the category of supporting import liberalization as in the previous section, but the next section reports results from alternative definitions to check the robustness of results. To examine the

effect of underlying determinants, we introduce a latent variable as follows; the observed dummy variable *IMP* takes the value of one if *IMP**>0 and zero otherwise. The unobservable latent variables *IMP** is in turn assumed to be determined by

$$IMP_j^* = x_j\beta + u_j . \quad (1)$$

The individual is indexed by *j*. The vector *x* includes individual's economic as well as behavioral variables explained later. We assume that the error term *u* is distributed to logistic, but we confirm that our main results are robust even with normal distribution. Hence, this paper estimates the following logit model:

$$\Pr\{IMP_j = 1 | x_j\} = \exp(x_j\beta)/[1+\exp(x_j\beta)] . \quad (2)$$

As a part of the vector *x* on the right-hand side of the regression, we include the endowment effect dummy along with the risk aversion dummy, defined in the previous section. We also control for various other factors of individuals. As this regression is estimated over data from a one-shot survey, and as we consider no structural decision-making mechanisms, we should not interpret it as an indication of causality.[12] We must also note that we do not mean to reject any other behavioral hypotheses (e.g. envy or altruism) by this regression.[13]

Table 4 reports our logit regression results.[14] In all cases in this table, 10,816 individuals are covered. The first column focuses on the variable of our interest. The second column includes only economic variables. The column (4) adds the risk aversion dummy along with the endowment effect dummy. The marginal effects based on the estimates in column (4) are

[12] As gender and education may affect policy preference indirectly, we assign instrumental variables (IV) to economic variables for a robustness check purpose. We confirm the significance of behavioral variables even with IV, though whether we should treat them as exogenous in economic decisions has not been settled in previous literature.

[13] As another caution, the estimated coefficient on a surveyed-based subjective variable (the endowment effect or risk aversion variable in our case) may include the effects of other variables that influence how respondents self-report their attitudes. See Bertrand and Mullainathan (2001).

[14] 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.

reported in the last column.[15]

The most notable finding from this table is that people seriously influenced by the endowment effect tend to significantly oppose import liberalization. While risk-averse people tend to be protectionists possibly due to the fear of uncertainty associated with adjustment after trade liberalization, the impact of the endowment effect remains statistically significant even after this general attitude toward risk is controlled for at the individual level. Our regressions show that both endowment effect and risk aversion are negatively related with the opinion supporting free trade. As far as the authors know, this is the first report at least for the endowment effect on trade policy preferences.

The last column of Table 4 shows that the probability of supporting import liberalization is lower by five percent if the individual is influenced by the endowment effect. Although it is smaller than that of most of the economic variables displayed in the same column, this magnitude of five percent should not be neglected. Similarly, the probability of import liberalization support is lower by six percent if the individual is extremely risk averse.

We also confirm the existing evidence on the effects of standard non-behavioral variables as follows. People with high income, college education or working in managerial positions tend to be free traders. Other occupation dummies are statistically insignificant and hence omitted. These effects of income, education, and occupation are consistent with established results from previous literature. This finding is in line with the prediction by the orthodox trade theory in that these individuals as suppliers of skilled labor are quite likely to be gainers from trade liberalization at least in the case of Japan: the country with comparative advantage obviously in skilled-labor intensive goods. We must note, however, that reduced-form regressions such as

[15] As the variables on the right-hand side of our logit model are binary dummies, the figures shown as “marginal effects” are the change in the probability of supporting import liberalization due to the discrete change in each dummy from zero to one, keeping other variables at the mean.

this in no way identify structural mechanism of policy preference determination.[16]

On the industry effect, people working in the agriculture sector tend to be overwhelmingly protectionists, as expected for Japan: the country heavily dependent on agriculture imports and the import liberalization of agricultural products is the critical issue in the Japan's trade policy. However, other industry dummies defined at the two-digit level, including non-tradable industries or public sectors, turn out to be statistically insignificant and thus omitted. In this sense, the specific factors model performs poorly in describing cross-industry variations in Japanese non-agriculture sectors.

On the age effect, people older than the retirement age are significantly less likely to be protectionists than working-age population. This result is consistent with the interpretation that retired people form trade policy preferences mainly as consumers than as producers or workers. As the population share of retired people rises in many countries, this finding has a deep implication for trade policy choice in aging society.[17]

As a final note, female are significantly more likely to be protectionists than male. This paper does not further investigate why this gender difference emerges, since it has already been repeatedly confirmed as a stylized fact in previous literature.[18] We must note, however, that our finding of gender gap in trade policy preferences is confirmed after we control for industry, occupation, income and education, in which gender gaps are certainly observed.

3.2. Robustness checks

This section reports results from alternative cases for robustness check purposes. The logit

16 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.
17 Blonigen (2011) reports that education has a significant impact on trade policy preferences of retirees in the U.S. The interaction with behavioral effects will be discussed in Section 3.3.
18 As a recent example, Blonigen (2011) confirms the gender effect on trade policy preferences.

estimation results are shown in Table 5. All the variables on the right-hand side are kept the same as in Table 4 to facilitate comparisons.

In the first column of Table 5, the dummy *IMP* is now defined as taking the value of one only for people who "strongly" support import liberalization and zero for those not only strongly/rather oppose and are "indifferent or do not know," but also adding those who "rather" support import liberalization. In the baseline case reported previously, *IMP* was broadly defined to include those "rather" support free trade, but this case is based on the more strict definition. As a result, the percentage of people supporting import liberalization declines to nine percent.[19] The estimated coefficient on the endowment effect dummy is statistically significantly negative as shown in the first column of this table, even if we strictly define the supporters for import liberalization. All other estimates are also confirmed qualitatively unaffected by this change in the definition.

In the second column, the response of "indifferent or do not know" is excluded.[20] As a result, seventeen percent of the individuals are dropped. All the estimated coefficients reported in column (2) of Table 5, including that on the endowment effect dummy, remain significant with the same sign. Thus, excluding these indifferent or undecided respondents does not affect our finding.

In the last column, we estimate ordered logit model to exploit our detailed five-step ranking: strongly agree, rather agree, indifferent or do not know, rather oppose, and strongly oppose. The estimates in column (3) of Table 5 confirm that all the estimated coefficients remain unaffected even if we disaggregate our previous binary dummy into five-step ordering. Consequently, our principal finding of the significant endowment effect is robust even if we

[19] On the other end of the spectrum, people strongly opposing import liberalization occupy five percent in our sample.
[20] *IMP* is defined in the column (2) as in previous tables to include "rather agree."

consider ordering among the preferences on import liberalization.

3.3 Results from sub-samples

This section reexamines the endowment effect by splitting our sample into two sub-samples to compare the endowment effect among people in different groups. The entire sample is divided based on the following dummy variables used in our regressions: industry (agriculture, and other sectors), income (more than ten million yen, and less), age (older than the retirement age 65, and younger), gender (male and female), education (college or more, and high school or less), occupation (managerial occupations, and other occupations), and risk aversion (not buying a lottery with 50% of winning, and buying it). Table 6 reports the logit coefficient on the endowment effect dummy estimated from each sub-sample. Noteworthy findings are as follows.

First, as shown in the left column of row (1), the endowment effect is *not* observed among people working in the agriculture sector.[21] We confirm, on the other hand, the significant endowment effect among people working in other industries. Trade policy preference of people working in agriculture is not affected by psychological endowment effect, possibly dominated by the strong impact of direct economic determinants such as formalized in specific factors model in the orthodox trade theory.

Second, people strongly affected by endowment effect tend to resist import liberalization as long as they are not extremely rich. Above the ten million yen income threshold, on the other hand, the second row of Table 6 shows that the endowment effect reverses its sign. This contrast is statistically significant, as we confirm it not only by the likelihood ratio test of this sample split but also by checking the significance of the interaction term (*Rich*Endow*) added to the baseline regression. This reversal may be due to the difference in perceived status-quo between

[21] We must note, however, that this difference is not statistically significant possibly due to the limited sample size of agriculture workers.

rich and poor people, though it is practically impossible to directly test this hypothesis within our limited dataset. Rich people may regard successive import liberalization measures necessary for maintaining their already rich status-quo, while poor people tend to view them as threatening to their current state of living.[22]

Third, the endowment effect is *not* significant in the sub-sample composed only of retired people.[23] While Table 3 previously showed that people older than 65 years old are on average significantly affected by the endowment effect compared with younger people, what the left column of row (3) in Table 6 presents is no significant variations among people older than this retirement age.[24] Old people are on average more or less strongly driven by the endowment effect, but people vary significantly in their endowment effect when they are young. As has been reported in some previous studies on behavioral biases in other fields, this might indicate that experience contributes to attenuating the endowment effect on trade policy preferences.[25]

On other sample-splits according to gender, education, occupation or risk aversion, the difference in endowment effect tends to be negligible. We confirm the insignificance of these sample splits by the likelihood ratio test and by adding the interaction term to the baseline regression.

We must note, however, that this table compares the within-group endowment effect between the two sub-samples. For example, Table 6 shows that the estimated coefficient on the endowment effect dummy estimated over the limited sample composed only of educated people is roughly comparable that estimated on the other limited sample composed of people without college education, but this does not imply that college education has no impact on the

22 This interpretation suggests that policy preferences of rich people are in line with the "bicycle theory" introduced by Bhagwati (1988: p.41).
23 The statistical significance of this sample split by age is confirmed by the likelihood ratio test.
24 Though omitted from the table, we also find that the endowment effect is strongest among young people (under 35 years old), followed by middle-aged people (35-64 years old), in turn followed by old people (65 years or older).
25 See DellaVigna (2009) for example on the effect of experiences.

endowment effect. What this table shows that the probability of supporting import liberalization is low among people influenced by the endowment effect compared with those not influenced by the endowment effect within people at similar educational attainments. On the other hand, Table 3 indicated that educated people compared with those without college education are on average less influenced by endowment effect. The same note should apply to the sample splits based on gender, occupation and risk aversion.

4. Concluding remarks

This paper has found that the endowment effect significantly induces individuals to resist import liberalization even after controlling for the individual's risk aversion and other various relevant characteristics of individuals. This paper is intended to be as a first step toward the behavioral analysis of trade policy preferences in the real world. Identification of causality direction will be required in future independent studies with more detailed survey data.

Previous results from experiments and field surveys have established that the endowment effect is especially serious where experience is limited. As most of us experience very limited episodes of drastic trade liberalization during our life span, the endowment effect should be prevalent in trade policy preferences. Economic compensation, income redistribution or insurance schemes do not suffice for expanding political supports for trade liberalization. Free trade might be required as a libertarian paternalism policy, as Thaler and Sunstein (2003) propose in other policy domains. One might find some hopes in our finding that educated people are significantly less influenced by the endowment effect.[26]

Acknowledgement

[26] Baron and Kemp (2004) find that people supporting import restrictions score low on the test of understanding of comparative advantage.

The survey was conducted as a part of our research project at Japan's Research Institute of Economy, Trade and Industry (RIETI). The authors appreciate financial and administrative supports of RIETI. Any opinions expressed in this paper are not those of RIETI. This research is also partly financed by Grant-in-Aid for Scientific Research.

Reference

Bhagwati, J. (1988) *Protectionism*, MIT Press, Cambridge, MA.

Baron, J., and Kemp, S. (2004) "Support for trade restrictions, attitudes, and understanding of comparative advantage," *Journal of Economic Psychology* 25, 565-580.

Bertrand, M., and Mullainathan, S. (2001) "Do people mean what they say? Implications for subjective survey data," *American Economic Review* 91(2), AEA Papers and Proceedings 67-72.

Blonigen, B. (2011) "Revisiting the evidence on trade policy preferences," *Journal of International Economics* 85, 129-135.

DellaVigna, S. (2009) "Psychology and economics: Evidence from the field," *Journal of Economic Literature* 47(2), 315-372.

Eaton, J., and Grossman, G. (1985) "Tariffs as insurance: Optimal commercial policy when domestic markets are incomplete," *Canadian Journal of Economics* 18(2), 258-272.

Freund, C., and Özden, Ç. (2008) "Trade policy and loss aversion," *American Economic Review* 98(4), 1675-1691.

Hainmueller, J., and Hiscox, M. (2006) "Learning to love globalization: Education and individual attitudes toward international trade," *International Organization* 60(2), 469-498.

Kahneman, D., Knetsch, J., and Thaler, R. (1990) "Experimental tests of the endowment effect and the Coase Theorem," *Journal of Political Economy* 98(6), 1325-48.

Mayda, A., and Rodrik, D. (2005) “Why are some people (and countries) more protectionist than others?” *European Economic Review* 49, 1393-1430.

Scheve, K., and Slaughter, M. (2001) “What determines individual trade-policy preferences?” *Journal of International Economics* 54, 267-292.

Thaler, R., and Sunstein, C. (2003) “Libertarian paternalism,” *American Economic Review* 93(2), Papers and Proceedings, 175-179.

Tovar, P. (2009) “The effects of loss aversion on trade policy: Theory and evidence,” *Journal of International Economics* 78, 154-167.

Table 1 Percentages in the survey

Older than retirement age	23.4	Male	49.6
Rich (income ≥ 10 million yen)	2.1	Support import liberalization	51.4
Managerial occupations	12.5	Buy a 50% lottery	68.4
Working in agriculture sector	1.1	Buy a 1% lottery	37.8
Educated (college or more)	39.6	Sell a 1% lottery	28.1

(Notes) See text for definitions.

Table 2 Correlation matrix

	IMP	*Endow*	*RiskAv*	*Manag*	*Rich*	*Retired*	*Agr*	*Educ*	*Male*
IMP	1								
Endow	–0.101	1							
RiskAv	–0.085	0.271	1						
Manag	0.132	–0.077	–0.041	1					
Rich	0.067	–0.044	–0.022	0.172	1				
Retired	0.085	0.026	0.106	0.113	–0.039	1			
Agr	–0.045	–0.017	0.005	–0.020	–0.003	0.020	1		
Educ	0.090	–0.092	–0.071	0.133	0.128	–0.109	–0.031	1	
Male	0.195	–0.209	–0.145	0.249	0.116	–0.031	0.021	0.284	1

(Notes) See text for abbreviations.

Table 3 Endowment effect and individual characteristics

	(1) *Endowment effect*	(2) *Educated*
Endowment effect	----------	–0.152 (0.045)
Risk Aversion	1.128 (0.045)	–0.011 (0.048)
Educated	–0.153 (0.045)	----------
Managerial	–0.108 (0.071)	0.582 (0.068)
Rich	–0.178 (0.155)	1.541 (0.181)
Age	–0.009 (0.002)	–0.024 (0.002)
Retired	0.227 (0.072)	0.105 (0.074)
Agriculture	–0.363 (0.208)	–0.734 (0.239)
Male	–0.703 (0.044)	1.062 (0.044)
Log likelihood	–6710.732	–6583.3925

(Notes) The dependent variable of each logit regression is shown in the top row. Robust standard errors are in parentheses. Constant term is included but omitted.

Table 4 Logit estimation results

	(1)	(2)	(3)	(4)	(5) Marginal Effects
Endowment effect	–0.415	-----	–0.267	–0.210	–0.052
	(0.039)		(0.041)	(0.042)	(0.011)
Risk aversion	-----	-----	-----	–0.247	–0.062
				(0.045)	(0.011)
Managerial occupation	-----	0.480	0.470	0.467	0.115
		(0.068)	(0.068)	(0.068)	(0.016)
Rich	-----	0.561	0.550	0.556	0.134
		(0.154)	(0.155)	(0.156)	(0.036)
Retired	-----	0.445	0.453	0.481	0.118
		(0.047)	(0.047)	(0.048)	(0.011)
Agriculture	-----	–1.039	–1.062	–1.054	–0.246
		(0.214)	(0.216)	(0.216)	(0.043)
Educated	-----	0.160	0.152	0.150	0.037
		(0.043)	(0.043)	(0.043)	(0.011)
Male	-----	0.685	0.638	0.620	0.154
		(0.042)	(0.043)	(0.043)	(0.010)
Log likelihood	–7436.866	–7176.156	–7155.09	–7139.864	-----

(Notes) The dependent variable is the indicator for whether an individual supports import liberalization. Robust standard errors are in parentheses. The column (5) reports the marginal effects based on the estimates in the column (4). Constant term is included but omitted.

Table 5 Robustness checks

	(1) *IMP*=1 only for "strongly agree"	(2) Excluding "indifferent or do not know"	(3) Ordered logit
Endowment effect	–0.343	–0.113	–0.136
	(0.080)	(0.048)	(0.038)
Risk aversion	0.014	–0.228	–0.159
	(0.081)	(0.050)	(0.040)
Managerial occupation	0.236	0.466	0.409
	(0.095)	(0.077)	(0.061)
Rich	0.724	0.463	0.627
	(0.167)	(0.171)	(0.149)
Retired	0.256	0.421	0.352
	(0.080)	(0.053)	(0.042)
Agriculture	–0.828	–1.130	–0.979
	(0.468)	(0.228)	(0.193)
Educated	0.188	0.091	0.104
	(0.073)	(0.048)	(0.039)
Male	0.860	0.527	0.517
	(0.082)	(0.048)	(0.040)
Log likelihood	–3113.1171	–5750.2279	–14592.068
Number of individuals	10,816	8,970	10,816

(Notes) Shown are logit estimates with robust standard errors in parentheses. Constant term is included but omitted.

Table 6 Within-group estimation of endowment effect

(1) Industry	*Agriculture* : 0.210 (0.504)	*Other industries* : –0.213 (0.043)
(2) Income	*More than 10million* : 0.985 (0.446)	*Less* : –0.223 (0.043)
(3) Age	*Older than 65* : –0.166 (0.090)	*Younger* : –0.224 (0.048)
(4) Gender	*Male* : –0.217 (0.064)	*Female* : –0.205 (0.057)
(5) Education	*College or more* : –0.213 (0.070)	*High school or less* : –0.204 (0.054)
(6) Occupation	*Management* : –0.221 (0.144)	*Other occupations* : –0.212 (0.045)
(7) Risk aversion	*Extremely averting* : –0.218 (0.073)	*Others* : –0.209 (0.052)

(Notes) Shown is the coefficient on the endowment effect dummy estimated from each group. Robust standard errors are in the parentheses. Other variables listed in column (4) of Table 4 are included in the logit estimations but omitted from this table.