Effect of consuming imported cultural goods on trading partners' tolerance toward immigrants: The case of Japanese anime in Korea

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Effect of consuming imported cultural goods on trading partners' tolerance toward immigrants: The case of Japanese anime in Korea

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Abstract

The consumption of imported goods is thought to influence consumers' views and attitudes toward export countries. It is important to consider this issue especially when there is political tension and conflict between countries. Because of this historical background, political conflict exists between Korea and Japan. This paper examines the effect of viewing Japanese anime (animation) on the attitudes of Koreans toward Japanese living in Korea. The major findings of the study show that the more frequently adult Koreans view Japanese anime, the more likely they are to accept Japanese as workplace colleagues and neighbors after controlling for endogeneity bias using instrumental variables. The findings of this paper imply that via the consumption of imported cultural goods, people are exposed to positive traits of the trading partner, and thus consumers have a stronger affinity with the export country. From this, we derive the policy implication that promoting trade of modern cultural goods is effective to increase mutual understanding between trade partners, reducing political tension between them.

JEL classification: D12, D74, F16, Z11, Z18

Keywords: Anime; Immigrants; Workplace; Neighbor; Trade; Externality; Cool Japan.

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1. Introduction

Globalization through international trade, migration, and internet communication has drastically changed modern society. The principle of traditional economics tells us that international trade leads to an increase in mutual benefits between trade partners. However, we observe a lot of conflicts between people with different values and different historical and cultural backgrounds. As a consequence of globalization, frictions and tensions between people can increase, which then acts to reduce any trade benefits. Therefore, an increasing number of studies have investigated international trade by incorporating cultural factors (e.g., Francois and van Ypersele, 2002; Bala and van Long, 2005; Janeba, 2007; Olivier et al., 2008). According to Rauch and Trinidad (2009), people enjoy an intrinsic consumption value of imported cultural goods, which leads to an increase in welfare in the short run. However, the importation of cultural goods leads to cultural stagnation, which results in a decrease in welfare in the long run. Further, globalization increases the anti-foreigner sentiment held by people who compete with immigrants in the labor market (Gang et al., 2013)[1]. That is, globalization seems to cause a negative externality. However, it is not only an increase in competition that affects people's perceptions toward immigrants; other factors such as social background and identity also play a role in immigration-related issues (Epstein and Gang, 2010; Abdulloev et al., 2014). One way to decrease conflict and tension is to reduce the level of information asymmetry among people, as they can be misled by preconceived notions about others, which leads to intolerance. Mutual understanding is important to reduce

[1] Natives consider immigrant neighbors relatively less attractive, and immigrant settlement influences housing prices (Saiz and Wachter, 2011).

information asymmetry. According to the contact hypothesis, frequency of contact with a minority is thought to alleviate tension between the minority and majority (Rothbart and John, 1993)[2].

Even in the age of globalization, to gain the mutual benefit of international labor mobility it is important to consider not only the economic condition but also the social and historical backgrounds between countries. People's attitudes toward immigrants, to a certain extent, depend on the political relationship between countries. In the workplace, whether a migrant's contribution is equivalent to the level expected of them depends on the relationships and attitudes in the workplace. Even if migrants are sufficiently able and diligent, their contribution is considered below the level expected of them when native co-workers do not cooperate with them. Furthermore, people's attitudes toward immigrants are reflected in immigration policy and then in the openness of the labor market. Regarding economic factors, education level is considered a critical determinant of people's attitudes (Sheve and Slaughter, 2001; Mayda, 2006). As for non-economic factors, social and cultural prejudices are considered factors that determine the attitude toward immigrants (Dustmann and Preston, 2007).

Koreans may have anti-Japanese sentiments partly because Korea was annexed to Japan between 1910 and 1945 and endured severe hardship[3]. Because of this historical background, political conflict exists between Korea and Japan. For instance, there is a territorial dispute over the island of Tokdo (Takeshima). However, the Korean (Japanese) negative attitude toward Japan (Korea) possibly leads to fewer economic benefits. The

[2] A higher concentration of individuals of an ethnic minority results in the majority population having a hostile attitude towards them (e.g., Dustmann and Preston, 2001; Gang et al., 2013). On the other hand, the probability of being racially harassed is found to be lower in areas with larger minority populations (Dustmann and Preston, 2011).
[3] During the war, a number of Koreans were forced to come and work in Japan; they were forced to change their names to Japanese ones.

Japanese (Korean) popular culture industry is commonly called “Cool Japan (Korea)” and has received increasing attention in economic policy. The consumption of cultural goods can influence society’s attitude (Cheng, 2006). For example, a Chinese man uses “Cool Japan” to promote friendship between Japan and China. He feels an affinity with Japan through his viewing of Japanese anime although he does not live in Japan. Furthermore, via his business he is connected to Japanese partners (Nihon Keizai Newspaper, 2013). Thus, the role of policy regarding “Cool Japan” should be considered from a long-term perspective. First, it is plausible that watching anime teaches foreigners about Japanese society and therefore allows them to understand Japanese people better. That is, the international trade of cultural goods is expected to create a ripple effect between trading partners by enhancing mutual understanding. Fans of Japanese anime feel goodwill toward Japanese people because of the positive association with a product they enjoy. Therefore, a policy of promoting “Cool Japan” encourages foreigners to access entertainment from Japan (e.g., manga and anime), which improves their impression of Japanese people.

There are a number of economic studies dealing with modern cultural goods (e.g., Belk, 1987; Dewally and Ederington, 2006; Wyburn and Roach, 2012). From an international economic viewpoint, Disdier, Tai et al. (2010) investigated the international trade of cultural goods. Disdier, Head et al. (2010) provided empirical evidence that exposure to foreign names through imported cultural goods such as movies, television, and music influences the choice of their baby’s name by parents in France. Maystre et al. (2014) empirically examined how international trade changed subjective values in import and export countries. Based on data on the openness of bilateral trade (Disdier, Tai et al., 2010) and World Value Surveys, Maystre et al. (2014) found that openness of bilateral

trade is positively associated with cultural distance between the countries, implying that international trade causes subjective values to become more similar between countries. With respect to international labor mobility, the attitude toward immigrants or foreigners has been increasingly analyzed from an economic viewpoint (e.g., Mayda, 2006, Dustmann and Preston, 2007, Constant et al., 2009, Faccini and Mayda, 2009, Fertig and Schmidt, 2011, Akai et al., 2014, Faccini and Mayda, 2012, Faccini et al., 2013). However, no studies have examined how international trade in cultural goods influences people's attitude toward their trade partners. The value of this paper is that it is the first to investigate how and the extent to which the international trade of modern cultural goods influences people's perceptions. To this end, we explore the effect of Koreans' consumption of Japanese anime on their attitude toward Japanese people. The key findings are as follows: Koreans who frequently view Japanese anime are more likely to accept Japanese people as workplace colleagues and neighbors.

The remainder of this paper is organized as follows. Section 2 provides an explanation regarding data and the empirical method used. Section 3 presents the estimation results and their interpretation. The final section offers some conclusions.

2. Data and Methods

2.1. Data

This paper used individual-level data from the 2008 Korea General Social Survey (KPSS) conducted by the Survey Research Center of Sungkyunkwan University. The KPSS used a two-stage stratified sampling method and was conducted throughout Korea in 2008. The 2008 KPSS questionnaire included a question on the consumption of cultural goods such as viewing Japanese anime. The survey also asked standard questions

concerning individuals' characteristics via face-to-face interviews. In the sample used for the estimation, respondents' ages ranged between 18 and 91 years. The data cover information related to marital and demographic (age and gender) status, annual household income, and years of schooling. Additionally, respondents were asked how many children they had and their ages.

Concerning the key variable, the survey question asked, "How often do you watch Japanese anime?" Respondents could choose one of four responses: "1 (Not at all)," "2 (Seldom)," "3 (Sometimes)," and "4 (Often)". The frequency distribution of watching anime is illustrated in Figure 1, showing that almost half of the respondents watch no Japanese anime at all. There is wide variation in the viewing of Japanese anime.

2.2. Preliminary observations

Table 1 exhibits the definitions and basic statistics of the variables used in this paper. Koreans' perceptions toward Japanese people are captured by three different dummy variables: *JP_workplace* (*JP_neighbor* or *JP_family*). Perceptions toward Japanese as workplace colleagues is *JP_workplace*; perceptions toward Japanese as neighbors is *JP_neighbor*; and perceptions toward Japanese as relatives is *JP_family*. Table 1 shows that nearly 80% of Koreans accept Japanese as workplace colleagues and neighbors. Even though the mean value of *JP_family* is smaller than *JP_workplace* and *JP_neighbor*, 65% of Koreans accept Japanese as relatives. The consumption level of imported cultural goods is captured by *Frequency of anime view*, which ranges from 0 to 4. The mean frequency of watching Japanese anime is 1.82. An alternative variable, *Dummy Anime*, is 0.49, suggesting that almost half of the respondents have watched Japanese anime. As explained later, various instrumental variables are used to control for endogenous bias in

Frequency of anime view (*Dummy Anime*). These instrumental variables are measures of children. For instance, number of children aged below 12 years (*Child_12*) and number of children aged below 18 years (*Child_18*) are used as instrumental variables. As can be seen in Table 1, the mean values of *Child_12* and *Child_18* are 0.49 and 0.80, respectively. Their maximum and minimum values are 4 and 0, respectively. Figures 2 (a) and (b) demonstrate that the distribution of those who have young children is skewed toward 0.

Table 2 shows the correlation matrix of the key variables. Significant positive correlations are observed among *JP_workplace*, *JP_neighbor*, and *JP_family*, which is convincing. *Anime view* is positively correlated with *JP_workplace* (*JP_neighbor* and *JP_family*), and is statistically significant. Therefore, those who view Japanese anime more frequently tend to be more tolerant toward Japanese people in various situations. However, the causality between *Anime view* and perceptions toward Japanese people is unknown. The causality is scrutinized in the regression estimation reported in the subsequent section. The correlation between perceptions toward Japanese people and anime viewing is discussed in the following subsection. Interestingly, *Internet* is positively correlated with *JP_workplace*, *JP_neighbor*, and *JP_family*. Our interpretation is as follows: via the internet, information can be obtained from both domestic sources and from other countries. Therefore, people's views regarding Japan are based on various forms of information about Japan, even if domestic information tends to be negative. Hence, people who obtain information from the internet are more likely to accept Japanese people.

2.3. Econometric framework and estimation strategy

The estimated function of the baseline model takes the following form:

$$JP\_workplace_i \ (JP\_neighbor \text{ or } JP\_family) = \alpha_1 \ Frequency\ of\ anime\ view\ (or\ Dummy\ Anime)_i + \alpha_2 Family\ member_i + \alpha_3 \ TV_i + \alpha_4 \ Internet_i + \alpha_5 School_i + \alpha_6 Income_i + \alpha_7 Employ_i + \alpha_8 Age_i + \alpha_9 Marry_i + \alpha_{10} Male_i + X_i + u_i,$$

where $JP\_workplace_i$ ($JP\_neighbor$ or JP_family)$_i$ represents the dependent variable for individual *i.* As is exhibited in definition of Table 1, the dependent variable is a dummy, which takes the value of 1, otherwise 0. Hence, a probit model is used for the estimation. Regression parameters are represented by α. The error term is represented by u_i. There are political issues between Korea and Japan that influence whether Koreans accept Japanese people in Korean society. X represents vectors of variables to capture an individual's political orientation[4]. Furthermore, there could be historical reasons why various regions are affected in different ways by the former Japanese occupation. It seems plausible that rural residents have both less exposure to anime and more hostility toward Japan. In this case, observations can be grouped into clusters of geographical regions, with model errors uncorrelated across clusters but correlated within clusters. Then, model errors for individuals in the same region may be correlated, while model errors for individuals in different regions are assumed to be uncorrelated. Failure to control for within-cluster error correlation can lead to small standard errors, which lead to large z-values. In the dataset, there is information about respondents' residential areas. Therefore,

[4] A set of dummy variables is included to control for respondents' political orientations. Three sets of variables are used: (1) dummy of political ideology, ranging between 1 (very liberal) and 5 (very conservative), (2) dummy of party support, where there are nine choices (Liberty Forward Party, Grand National Party, Pro-Park Geun-hye Coalition, Democratic Party, Renewal of Korea Party, Democratic Labor Party, New Progressive Party, Other parties, or none of these), and (3) dummy of respondent's voting behavior in the presidential election held in 2007, which has a value of either 1 (voted) or 0 (did not vote).

for the purpose of estimations, standard errors clustered by residential area are used for the calculation of z-values[5]. *Frequency of anime view* (or *Dummy Anime*) is the key variable for examining the effect of viewing Japanese anime on perceptions toward Japanese people in various situations.

TV and *Internet* capture the effect of media providing information about international issues and therefore Japan. If media information increases (decreases) the anti-Japanese sentiment, people's perceptions toward Japanese are more intolerant (tolerant). Korean people can obtain information with various viewpoints about Japanese via the internet because information is posted not only from Korea but also from the rest of the world. Additionally, household income, schooling years, job status, age, marital status, and gender differences are used to capture individual-level economic and social conditions. The age effect is thought to be non-linear. Therefore, dummy variables such as *Age_20* and *Age30_39* are used to capture the effect of age[6].

2.4. Instrumental variables

It seems that Koreans who feel comfortable with Japanese people are more likely to prefer Japanese culture and therefore view Japanese anime. Even if various control variables are incorporated, unobservable individual characteristics that influence feelings toward Japanese people cannot be controlled for. That is, feelings are considered to be included in the error term, which is correlated with *Frequency of anime view* (key independent variable). Hence, endogenous bias naturally arises. To control for such bias,

[5] In the dataset, residential areas can be divided into 200 blocks. In the case that dummies to capture residential area are included, the maximum likelihood calculation used for the probit and IV probit models fails to converge, and so estimation results cannot be obtained.
[6] We attempted to incorporate additional dummies capturing those aged in their 40s, 50s, and 60s. However, convergence cannot be achieved in the maximum likelihood optimization for the IV probit model if additional dummies for capturing generations are used.

this paper used an instrumental variables (IV) probit model. Yamamura (2014) used Japanese data to show that people are more likely to watch anime when they have children aged younger than 12 years who have not yet entered junior high school. Young children are more likely to interact with their parents. For instance, children cannot go to the movie theater to see anime by themselves, so they ask their parents to go with them to the theater. As a consequence, their parents watch anime films even if they are not interested in that genre. After controlling for age of respondents, perceptions about Japanese people are unlikely to be related to whether respondents have young children[7, 8]. Hence, family structure is appropriate as an instrumental variable for frequency of viewing Japanese anime. Table 2 shows the significant positive correlation between *Child_12 (Child_18)* and *Frequency of anime view*, which is consistent with Yamamura (2014). In contrast, there is no significant correlation between *Child_12* and *JP_workplace* (*JP_neighbor* and *JP_family*). *Child_18* is not significantly correlated with *JP_workplace* (*JP_family*) although *Child_18* and *JP_neighbor* are positively and significantly correlated. In this paper, various sets of instrumental variables are used to check the appropriateness of the approach and the robustness of the results. In the first specification, the number of respondents' children younger than 12 years of age and its square are used as instrumental variables because the effect of the number of young children is not thought to be linear. However, Child_12 excludes children in their early teens, who might have been watching

[7] People from lower socioeconomic levels of society tend to have more children and also tend to have a less international outlook. For instance, social conservatives might also tend towards having more children and a more nationalist outlook. These characteristics are mostly controlled for by education, income, and a set of political variables.

[8] The respondents' ages are thought to be negatively related with the number of young children. In contrast, Koreans' perceptions about Japanese people depend on their experience regarding historical events. Therefore, age is related to perceptions about Japanese people. It is then necessary to control for age to consider the relation between perceptions about Japanese people and the number of young children.

with their parents for the past five years. It is necessary to examine how the results of the first specification hold up if the cutoff age for children is raised. In the second specification, the number of respondents' children younger than 18 years of age and its square are used as instrumental variables. Furthermore, given the distribution of the number of children and the propensity to watch anime variables, collapsing these variables to dummies of 0 or 1 is valuable for conducting estimations. Therefore, in the third specification, the key independent variable is *Dummy Anime* and its instrumental variables are *Dummy Child_12* and *Dummy Child_13_18* (see Table 1 for definitions).

3. Estimation Results and Discussion

3.1. Estimation results

The estimation results of the probit model are presented in Tables 3 and 4. The results of the IV probit model are shown in Tables 5(a), 5(b), and 6. The results for the control variables are shown in Table 3 but are not shown in the other tables to maintain focus on the results of the key variables. The set of independent variables and the number of observations are the same as those in the corresponding columns of Table 3. The values without parentheses show the marginal effects. Results for *JP_Workplace*, *JP_neighbor*, and *JP_family* are shown in columns (1)–(3), (4)–(6), and (7)–(9), respectively. In columns (1), (4), and (7), the full sample is used for estimations. Concerning *JP_Workplace*, unemployed people are less likely to be able to imagine the workplace situation, hence the sample should be limited to employed workers. For consistency, estimations for *JP_neighbor* and *JP_family* have been arrived at based on the subsample of employed workers. Results for the subsample of employed workers are shown in

columns (2), (5), and (8). Instrumental variables are not useful for unmarried people, who are unlikely to have a child. However, unmarried people who watch anime might be more inclined to be accepting of a Japanese relative, although this will not be picked up under the current specification. Hence, unmarried people should not be included in the sample. Accordingly, a subsample of employed workers who are married is used for estimations, and the results are presented in columns (3), (6), and (9).

It can be seen from Table 3 that the coefficient of *Frequency of anime view* is positive and statistically significant at the 1% level in all columns. That is, those who frequently view Japanese anime are more likely to accept Japanese people in various situations in Korean society. Furthermore, the marginal effects of *Anime view* range from 0.04 to 0.07, suggesting that a one-point increase on the four-point scale increases the probability that Koreans will accept Japanese people in daily life by 4–7%. Concerning *Internet*, the coefficient is positive and statistically significant when the dependent variable is *JP_workplace* or *JP_neighbor.* Hence, those who use the internet as their main source of international news tend to accept Japanese people as colleagues at work or as neighbors. Information from beyond domestic media sources is thought to provide more positive information about Japan than domestic media, and plays a role in Koreans accepting Japanese people. The coefficient of *School* is positive and statistically significant with the exception of column (3). Hence, those with a higher level of education tend to accept Japanese people in various situations. Education is considered to remove any negative bias toward Japanese people. The coefficient of *Employ* is statistically significant and negative in columns (1), (4), and (7); this suggests that Japanese people are considered to be competitors by Korean employees in the labor market. Inevitably, Korean workers are less likely to accept Japanese people in daily life. The coefficient of *Male* changes

according to the dependent variables and is not statistically significant, with the exception of columns (5) and (6).

In Table 4, *Dummy Anime* is positive and statistically significant in all columns. Furthermore, its marginal effect ranges from 0.09 to 0.16. This can be interpreted as implying that Koreans who have watched Japanese anime are 9–16% more likely to accept Japanese people in daily life than those who have never watched it.

Tables 5(a) and 5(b) show the effect of *Frequency of anime view* after controlling for endogenous bias. Instrumental variables are *Child_12* and its square in Table 5(a) and *Child_18* and its square in Table 5(b). We begin by looking at the results of Table 5(a). The first-stage estimation, the coefficient of *Child_12*, is positive and that for $Child^2$ is negative; both are statistically significant at the 1% level in all columns. This implies that the presence of children encourages parents to view Japanese anime. However, this effect decreases as the number of children increases. This is consistent with the finding of Yamamura (2014). An overidentification test provides a method to test for exogeneity in instrumental variables. Test statistics are not significant in any columns in Table 5(a), and thus do not reject the null hypothesis that the instrumental variables are uncorrelated with the error term. This suggests that the instrumental variables are valid. Concerning the results of the second stage, *Frequency of anime view* shows a positive sign in all columns in Table 5(a). Further, *Frequency of anime view* is statistically significant with the exception of column (4) of Table 5(a) when *JP_workplace* and *JP_neighbor* are the dependent variables. Conversely, *Frequency of anime view* is not significant in any columns when *JP_family* is the dependent variable. In other words, frequent viewing of Japanese anime leads Korean people to accept Japanese people as workplace colleagues and neighbors, but not as relatives. The marginal effect of *Frequency of anime view* on

JP_workplace is between 0.19 and 0.23, which means that a one-point increase in viewing Japanese anime on the four-point scale leads to a 19–24% increase in the probability that Koreans will accept Japanese people as workplace colleagues. The marginal effect of *Frequency of anime view* on *JP_ neighbor* is 0.20, which suggests that a one-point increase in viewing Japanese anime increases the probability that Korean people will accept Japanese people as neighbors by 20%. The effects of *Frequency of anime view* are approximately four to five times larger than those estimated by the probit model presented in Table 3. There are some respondents who are comfortable with Japanese people, even though such feelings cannot be observed. Inevitably, this positive feeling is included in the error term, even though various control variables are incorporated. Koreans' positive feelings toward Japanese people are thought to be related to watching Japanese anime. There is a positive correlation between *Frequency of anime view* and the error term. Based on this assumption, the marginal effect of *Frequency of anime view* obtained from the probit model is smaller than that obtained from the IV probit model. The results shown in Table 5(b) are similar to those shown in Table 5(a), indicating that the results shown in Table 5(a) are robust when different instrumental variables are used.

Turning to the results shown in Table 6, *Dummy Anime* is positive and statistically significant with the exception of column (1) when *JP_workplace* and *JP_neighbor* are the dependent variables. Conversely, it is not significant when *JP_family* is the dependent variable. Furthermore, its marginal effect is around 0.35 in columns (1)–(6). This can be interpreted as implying that Koreans who have watched Japanese anime are approximately 35% more likely to accept Japanese people as workplace colleagues or neighbors than those who have never watched it. The marginal effect of *Dummy Anime* based on the IV probit model is about four times larger than that reported in Table 4

(probit model). The results shown in Tables 4 and 6 are similar to those shown in Tables 3, 5(a), and 5(b). In addition, Tables A1(a)–A2 in the Appendix show results using the linear 2SLS model, and they are consistent with those presented in Tables 3–6. All in all, the results shown in the tables suggest that the estimation effect of watching anime on the degree to which Koreans accept Japanese people is robust.

From the findings suggested thus far, we derive the following argument: As a whole, the consumption of imported cultural goods improves the views held by consumers, as trading partners, toward immigrants. Therefore, promoting the trade of cultural goods is an effective method to accelerate efficient labor mobility between countries by improving perceptions and views regarding trading partners.

4. Conclusions

Attitudes toward immigrants appear to be influenced not only by economic factors but also by historical and cultural backgrounds. Does the consumption of imported cultural goods work to change perceptions and attitudes of a trading partner toward immigrants? Does interaction via the trade of cultural goods reduce international friction and in turn open the labor market? In other words, does the trade of cultural goods produce an externality to enhance international labor mobility? This point has not been sufficiently explored thus far, although a number of studies have investigated how international trade changes people's subjective values and preferences (e.g., Olivier et al., 2008; Disdier, Head et al. 2010; Maystre et al. 2014). This paper attempts to empirically deal with this issue by examining the effect of Koreans' viewing Japanese anime on their attitudes toward Japanese living Korea.

The key findings of this study are as follows: the more frequently adult Koreans view

Japanese anime, the more likely they are to accept Japanese as colleagues at work, as neighbors, and as close relatives (by marriage). However, after controlling for endogeneity bias using instrumental variables, the effect disappears for the acceptance of Japanese as close relatives. In contrast, the effect of viewing anime continues to encourage Koreans to be more tolerant toward Japanese as workplace colleagues and neighbors.

Thus, via the consumption of imported cultural goods, Koreans feel more familiar with Japanese and the barrier toward Japanese is lowered. However, relationships within workplaces and/or among neighbors are weaker than those among relatives. Therefore, the externality of cultural goods is restricted to the workplace and community. Even so, modern cultural goods such as Japanese anime representing "Cool Japan" play a role in strengthening ties between Korea and Japan to create an open labor market. Consequently, the key policy implication from this paper is the importance of promoting the international trade of modern cultural goods to reduce psychological barriers toward immigrants held by trading partners. In doing so, the benefit of international trade will increase. What has been thus far observed and argued suggests promising policy implications from promoting the export of cultural goods.

However, it is worth conducting further robustness checks of the results in this paper. For instance, if there is information about viewing American drama series, researchers can regress the attitude variables toward Japanese people in Korea on viewing American drama series with or without Japanese anime in the right-hand side. Further surveys should be conducted to collect such information. Both Korea and Japan are East Asian countries, and their people share many similarities in terms of their social and cultural backgrounds. It is unclear whether the argument presented in this paper holds for

countries with different social and cultural backgrounds. It is thus worthwhile investigating how international trade between Eastern and Western countries influences people's views about immigrants from their country's trade partners by using cross-country data. Further, this paper does not suggest a theoretical framework to support the hypothesis. Therefore, to understand the mechanism behind this paper's finding, a theoretical model should be built. These issues will be addressed in future work.

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Table 1. Definition of variables and descriptive statistics.

	Definition	Mean	Mini	Max
JP_workplace	Takes 1 if respondent accepts Japanese as colleagues at work, otherwise 0	0.80	0	1
JP_neighbor	Takes 1 if respondent accepts Japanese as neighbors, otherwise 0	0.84	0	1
JP_family	Takes 1 if respondent accepts Japanese as close relatives by marriage, otherwise 0	0.65	0	1
Frequency of anime view	Frequency of watching Japanese anime: Respondents were given four response options: "1 (Not at all)," "2 (Seldom)," "3 (Sometimes)," and "4 (Often)"	1.82	1	4
Dummy Anime	Takes 1 if respondent has watched Japanese anime, otherwise 0	0.49	0	1
Child_12	Number of children aged less than 12 years	0.49	0	4
Child_18	Number of children aged less than 18 years	0.80	0	4
Dummy Child_12	Takes 1 if respondent has child below 12 years old, otherwise 0	0.31	0	1
Dummy Child_13_18	Takes 1 if respondent has child between 13 and 18 years old, otherwise 0	0.23	0	1
Family member	Number of family members	3.00	1	9
TV	Takes 1 if source of international news is TV, otherwise 0	0.79	0	1
Internet	Takes 1 if source of international news is internet, otherwise 0	0.46	0	1
School	Years of schooling	12.4	0	21
Income	Total monthly household income (1,000,000 Won)	3.69	0	73
Employ	Takes 1 if respondent is currently employed, otherwise 0	0.56	0	1
Age_29	Takes 1 if respondent is aged below 29, otherwise 0	0.19	0	1
Age30-39	Takes 1 if respondent is aged between 30 and 39, otherwise 0.	0.24	0	1
Marry	Takes 1 if respondent is currently married, otherwise 0	0.45	0	1
Male	Takes 1 if respondent is male, otherwise 0	0.65	0	1
Ideology_2	Political ideology ranges between 1(very liberal) and 5(very conservative) Takes 1 if respondent's political ideology is 2,	0.23	0	1

	otherwise 0			
Ideology_3	Takes 1 if respondent's political ideology is 3, otherwise 0	0.34	0	1
Ideology_4	Takes 1 if respondent's political ideology is 4, otherwise 0	0.30	0	1
Ideology_5	Takes 1 if respondent's political ideology is 5, otherwise 0	0.05	0	1
Vote	Takes 1 if respondent voted in presidential election in 2007, otherwise 0	0.77	0	1

Note: Dummy variable takes 1 or 0; therefore its mean value can be interpreted as suggesting the proportion of those who chose 1.

Table 2. Correlation matrix of key variables.

	JP_workplace	*JP_neighbor*	*JP_family*	*Frequency of anime view*	*Child12*	*Child18*	*TV*	*Internet*
JP_workplace	1.00							
JP_neighbor	0.64***	1.00						
	(0.00)							
JP_family	0.44***	0.47***	1.00					
	(0.00)	(0.00)						
Frequency of anime view	0.18***	0.17***	0.15***	1.00				
	(0.00)	(0.00)	(0.00)					
Child_12	0.01	0.01	-0.01	0.13***	1.00			
	(0.69)	(0.69)	(0.69)	(0.00)				
Child_18	0.04	0.06**	-0.0001	0.12***	0.77***	1.00		
	(0.11)	(0.02)	(0.98)	(0.00)	(0.00)			
TV	−0.01	−0.02	−0.03	−0.10***	0.001	0.02	1.00	
	(0.61)	(0.30)	(0.19)	(0.00)	(0.94)	(0.50)		
Internet	0.20***	0.19***	0.15***	0.35***	0.11***	0.11***	-0.19***	1.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	

Notes: Values in parentheses are p values. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 3. Estimation results of probit model.

	JP_workplace			*JP_neighbor*			*JP_family*		
	(1) *Full sample*	(2) *Subsample of employees*	(3) *Subsample of married employees*	(4) *Full sample*	(5) *Subsample of employees*	(6) *Subsample of married employees*	(7) *Full sample*	(8) *Subsample of employees*	(9) *Subsample of married employees*
Frequency of anime view	0.05*** (3.48)	0.07*** (4.03)	0.07*** (3.17)	0.04*** (3.72)	0.05*** (3.69)	0.05*** (3.02)	0.05*** (3.32)	0.07*** (3.67)	0.05** (2.37)
Family member	−0.01 (−1.45)	−0.01 (−0.87)	−0.01 (−0.35)	−0.01 (−1.10)	−0.01 (−0.52)	0.002 (0.17)	−0.03*** (−2.92)	−0.03** (−2.28)	−0.02 (−1.53)
TV	0.04 (1.55)	0.03 (1.15)	0.01 (0.24)	0.02 (0.89)	0.02 (0.67)	−0.01 (−0.43)	0.01 (0.26)	0.02 (0.68)	−0.004 (−0.09)
Internet	0.09*** (3.52)	0.08*** (2.73)	0.08** (2.51)	0.07*** (3.56)	0.08*** (3.10)	0.08*** (2.89)	0.06** (2.10)	0.05 (1.41)	0.05 (1.17)
School	0.01*** (4.08)	0.01** (1.99)	0.01 (1.45)	0.01*** (3.74)	0.01** (2.07)	0.01* (1.72)	0.01*** (3.77)	0.01*** (2.79)	0.01** (2.00)
Income	0.03 (1.01)	0.01 (0.44)	0.03 (0.70)	0.04 (1.28)	0.03 (0.86)	0.04 (0.97)	0.05 (1.15)	0.13* (1.93)	0.15* (2.09)
Employ	−0.05** (−2.31)			−0.05*** (−2.79)			−0.05* (−1.92)		
Single	0.01 (0.37)	−0.01 (−0.24)		−0.01 (−0.32)	−0.10 (−1.53)		0.03 (0.54)	0.01 (0.13)	
Age_29	−0.06 (−1.55)	−0.12** (−2.16)	−0.06 (−0.67)	−0.04 (−0.95)	−0.04 (−0.78)	0.02 (0.33)	−0.09 (−1.60)	−0.09 (−1.38)	−0.14 (−1.25)
Age30-39	−0.03 (−1.31)	−0.04 (−1.26)	−0.04 (−1.13)	−0.05** (−2.07)	−0.04 (−1.40)	−0.04 (−1.31)	−0.04 (−1.20)	−0.05 (−1.18)	−0.02 (−0.53)
Marry	−0.001 (−0.03)	−0.06 (−1.49)	−0.06 (−1.53)	−0.01 (−0.38)	−0.07* (−1.82)	−0.07** (−1.96)	0.01 (0.31)	−0.01 (−0.20)	−0.001 (−0.02)
Male	−0.01 (−0.76)	−0.01 (−0.64)	−0.01 (−0.38)	−0.01 (−1.17)	−0.03* (−1.88)	−0.05** (−2.39)	0.02 (1.00)	0.02 (0.87)	0.01 (0.37)

Ideology_2	0.03	0.08	0.10	0.01	−0.03	−0.01	0.05	−0.05	−0.02
	(0.67)	(1.20)	(1.17)	(0.33)	(−0.43)	(−0.13)	(0.76)	(−0.51)	(−0.22)
Ideology_3	0.04	0.07	0.09	−0.04	−0.08	−0.05	0.01	−0.06	−0.02
	(0.78)	(1.10)	(1.05)	(−0.90)	(−0.95)	(−0.53)	(0.13)	(−0.63)	(−0.23)
Ideology_4	−0.02	0.01	0.01	−0.09*	−0.12	−0.09	−0.06	−0.16*	−0.12
	(−0.48)	(0.21)	(0.16)	(−1.83)	(−1.33)	(−0.88)	(−1.04)	(−1.65)	(−1.07)
Ideology_5	−0.02	−0.01	0.01	−0.05	−0.09	−0.04	−0.16*	−0.26*	−0.20
	(−0.43)	(−0.17)	(0.08)	(−0.83)	(−0.89)	(−0.45)	(−1.80)	(−1.90)	(−1.32)
Vote	0.03	0.003	−0.02	0.01	0.01	0.001	0.07**	0.07*	−0.004
	(1.11)	(0.11)	(−0.69)	(0.67)	(0.39)	(0.04)	(2.26)	(1.71)	(−0.04)
Wald statistics	160.0	95.7	81.6	166.4	109.4	87.6	147.0	101.1	60.7
Observations	1461	859	690	1461	859	690	1461	866	690

Note: Values without parentheses are marginal effects. Values in parentheses are z-values calculated using robust standard errors clustered by residential area. A constant and dummies for political party support are included but the result is not reported. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 4. Estimation results of probit model (alternative specification where dummy for viewing anime is used as a key variable).

	JP_workplace			*JP_neighbor*			*JP_family*		
	(1) *Full sample*	(2) *Subsample of employees*	(3) *Subsample of married employees*	(4) *Full sample*	(5) *Subsample of employees*	(6) *Subsample of married employees*	(7) *Full sample*	(8) *Subsample of employees*	(9) *Subsample of married employees*
Dummy Anime	0.11***	0.16***	0.15***	0.09***	0.13***	0.10***	0.12***	0.12***	0.11***
	(4.92)	(5.09)	(4.19)	(4.27)	(4.55)	(3.61)	(4.13)	(3.32)	(2.75)
Wald statistics	170.7	108.5	89.3	175.4	125.4	94.8	152.7	101.0	66.3
Observations	1461	859	690	1461	859	690	1461	866	690

Note: Values without parentheses are marginal effects. Values in parentheses are z-values calculated using robust standard errors clustered by residential area. All control variables used in the estimations in Table 3 are also incorporated as independent variables, although the results are not reported. *** indicate significance at the 1% level.

Table 5(a). Estimation results of IV probit model based on subsample of unmarried people (number of children under 12 and its square are used as instrumental variables).

	JP_workplace			*JP_neighbor*			*JP_family*		
	(1) *Full sample*	(2) *Subsample of employees*	(3) *Subsample of married employees*	(4) *Full sample*	(5) *Subsample of employees*	(6) *Subsample of married employees*	(7) *Full sample*	(8) *Subsample of employees*	(9) *Subsample of married employees*
Frequency of anime view	0.23***	0.19**	0.19**	0.15	0.20**	0.20**	0.10	0.11	0.11
	(3.20)	(2.18)	(2.05)	(1.56)	(2.51)	(2.32)	(0.84)	(0.81)	(0.84)
First-stage estimation									
Child_12	0.38***	0.37***	0.43***	0.39***	0.35***	0.41***	0.40***	0.36***	0.42***
	(3.58)	(3.29)	(3.61)	(3.79)	(2.72)	(3.06)	(4.11)	(3.10)	(3.46)
$Child\_12^2$	−0.14***	−0.15***	−0.17***	−0.14***	−0.15***	−0.17***	−0.14***	−0.15***	−0.17***
	(−4.17)	(−3.62)	(−3.89)	(−4.17)	(−3.46)	(−3.82)	(−3.92)	(−3.64)	(−3.93)
Overidentification test	p-value =0.08	p-value =0.69	p-value =0.62	p-value =0.06	p-value =0.30	p-value =0.25	p-value =0.21	p-value =0.69	p-value =0.78
Wald statistics	286.9	131.4	103.9	212.8	164.5	117.2	144.1	95.0	56.8
Observations	1461	859	690	1461	859	690	1461	866	690

Note: Values without parentheses are marginal effects. Values in parentheses are z-values calculated using robust standard errors clustered by residential area. All control variables used in the estimations in Table 3 are also incorporated as independent variables, although the results are not reported. ** and *** indicate significance at the 5% and 1% levels, respectively. The Amemiya–Lee–Newey minimum chi-square statistic is used for the overidentification test.

Table 5(b). Estimation results of IV probit model based on subsample of unmarried people (number of children under 18 and its square are used as instrumental variables).

	JP_workplace			*JP_neighbor*			*JP_family*		
	(1) *Full sample*	(2) *Subsample of employees*	(3) *Subsample of married employees*	(4) *Full sample*	(5) *Subsample of employees*	(6) *Subsample of married employees*	(7) *Full sample*	(8) *Subsample of employees*	(9) *Subsample of married employees*
Frequency of anime view	0.16**	0.15	0.18*	0.19***	0.21***	0.19**	0.28	0.12	0.12
	(2.14)	(0.93)	(1.77)	(3.09)	(2.67)	(2.55)	(0.77)	(0.94)	(1.05)
First-stage estimation									
Child_18	0.35***	0.33**	0.43***	0.35***	0.33***	0.35***	0.35***	0.34***	0.44***
	(3.91)	(2.53)	(3.10)	(3.90)	(2.74)	(3.06)	(3.88)	(2.82)	(3.47)
$Child\_18^2$	−0.09***	−0.09*	−0.11**	−0.09***	−0.10**	−0.09***	−0.09***	−0.10**	−0.12***
	(−2.82)	(−1.73)	(−2.03)	(−2.80)	(−2.14)	(−2.71)	(−2.71)	(−2.31)	(−2.61)
Overidentificatio n test	p-value =0.63	p-value =0.12	p-value =0.13	p-value =0.81	p-value =0.87	p-value =0.85	p-value =0.24	p-value =0.75	p-value =0.62
Wald statistics	200.0	103.8	97.1	267.6	182.0	121.5	141.6	98.0	56.8
Observations	1461	859	690	1461	859	690	1461	866	690

Note: Values without parentheses are marginal effects. Values in parentheses are z-values calculated using robust standard errors clustered by residential area. All control variables used in the estimations in Table 3 are also incorporated as independent variables, although the results are not reported. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. The Amemiya–Lee–Newey minimum chi-square statistic is used for the overidentification test.

Table 6. Estimation results of IV probit model based on subsample of unmarried people (alternative specification where dummy for viewing anime is used as a key variable: dummy for children under 12 and dummy for children between 13 and 18 are instrumental variables).

	JP_workplace			*JP_neighbor*			*JP_family*		
	(1) *Full sample*	(2) *Subsample of employees*	(3) *Subsample of married employees*	(4) *Full sample*	(5) *Subsample of employees*	(6) *Subsample of married employees*	(7) *Full sample*	(8) *Subsample of employees*	(9) *Subsample of married employees*
Dummy Anime	0.22	0.35**	0.36***	0.37***	0.35**	0.33**	0.13	0.17	0.20
	(1.43)	(2.36)	(2.60)	(3.16)	(2.51)	(2.41)	(0.67)	(0.75)	(0.85)
First-stage estimation									
Dummy Child_12	0.14***	0.13***	0.14***	0.13***	0.11**	0.12**	0.14***	0.12***	0.13***
	(3.86)	(3.02)	(2.96)	(3.04)	(2.41)	(2.49)	(3.95)	(2.91)	(2.75)
Dummy Child_13_18	0.11***	0.12***	0.15***	0.12***	0.13***	0.16***	0.10***	0.12***	0.16***
	(3.53)	(3.28)	(3.77)	(4.31)	(3.84)	(4.24)	(3.42)	(3.33)	(3.96)
Overidentificatio n test	p-value =0.52	p-value =0.71	p-value =0.58	p-value =0.05	p-value =0.25	p-value =0.40	p-value =0.84	p-value =0.88	p-value =0.98
Wald statistics	175.7	122.9	103.3	337.6	175.6	123.8	139.9	90.6	58.5
Observations	1461	859	690	1461	859	690	1461	866	690

Note: Values without parentheses are marginal effects. Values in parentheses are z-values calculated using robust standard errors clustered by residential area. All control variables used in the estimations in Table 3 are also incorporated as independent variables, although the results are not reported. ** and *** indicate significance at the 5% and 1% levels, respectively. The Amemiya–Lee–Newey minimum chi-square statistic is used for the overidentification test.

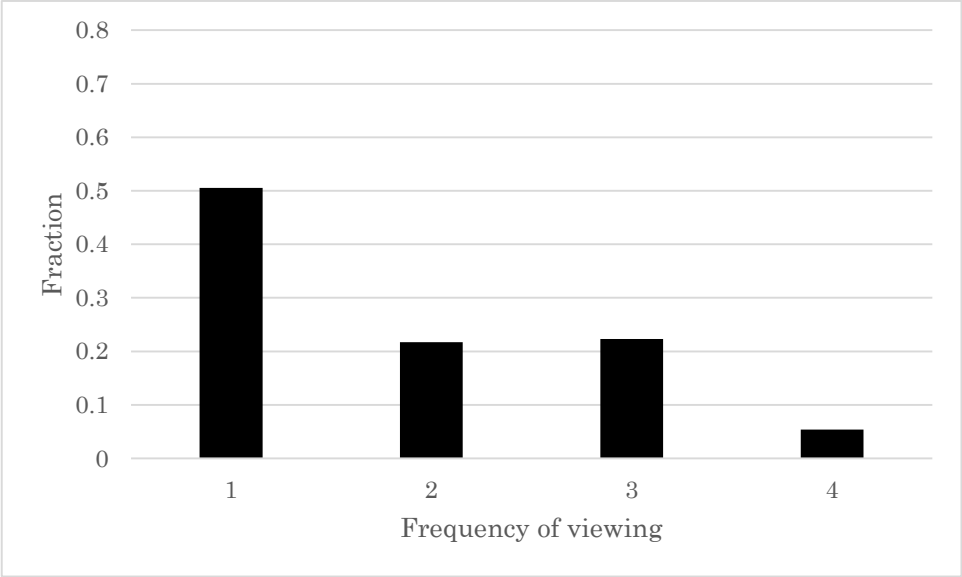

Figure 1. Distribution of frequency of viewing Japanese anime

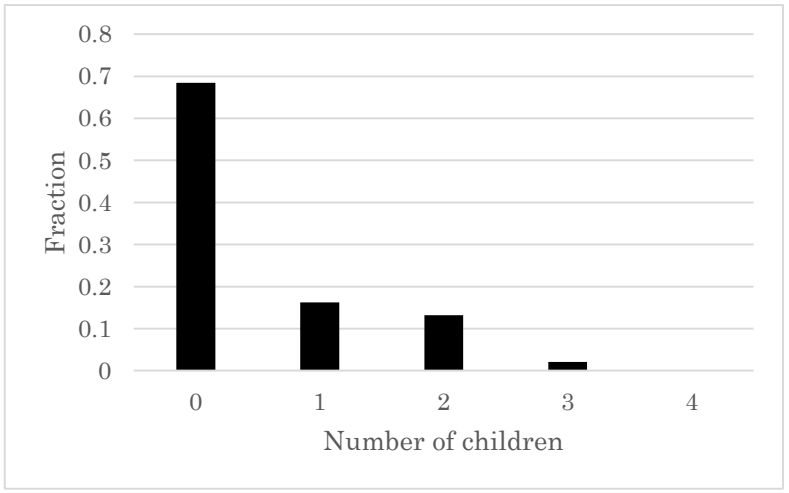

Figure 2(a). Distribution of number of children aged below 12 years old

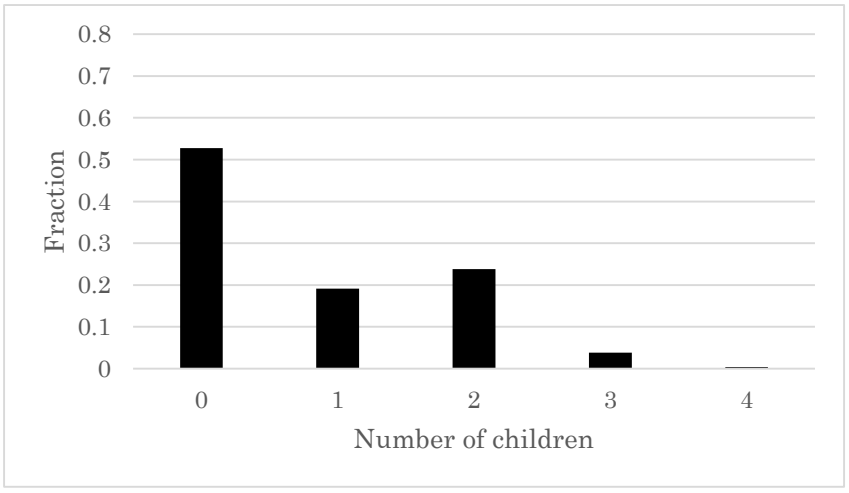

Figure 2(b). Distribution of number of children aged below 18 years old

Appendix

Table A1(a). Estimation results of linear IV (2SLS) model based on subsample of unmarried people (number of children under 12 and its square are used as instrumental variables).

	JP_workplace			*JP_neighbor*			*JP_family*		
	(1) *Full sample*	(2) *Subsample of employees*	(3) *Subsample of married employees*	(4) *Full sample*	(5) *Subsample of employees*	(6) *Subsample of married employees*	(7) *Full sample*	(8) *Subsample of employees*	(9) *Subsample of married employees*
Frequency of anime view	0.20*	0.24*	0.22*	0.08	0.19	0.16	0.12	0.13	0.12
	(1.83)	(1.74)	(1.73)	(0.89)	(1.43)	(1.31)	(1.03)	(0.83)	(0.83)
Overidentificatio n test	p-value =0.07	p-value =0.06	p-value =0.62	p-value =0.08	p-value =0.24	p-value =0.20	p-value =0.20	p-value =0.59	p-value =0.74
R-square	0.80	0.79	0.76	0.86	0.84	0.83	0.68	0.69	0.67
Observations	1461	859	690	1461	859	690	1461	866	690

Note: Values without parentheses are marginal effects. Values in parentheses are t values calculated using robust standard errors clustered by residential area. All control variables used in the estimations in Table 3 are also incorporated as independent variables, although the results are not reported. ** and *** indicate significance at the 5% and 1% levels, respectively. Hansen's J statistic is used for the overidentification test.

Table A1(b). Estimation results of linear IV (2SLS) model based on subsample of unmarried people (number of children under 18 and its square are used as instrumental variables).

	JP_workplace			*JP_neighbor*			*JP_family*		
	(1) *Full sample*	(2) *Subsample of employees*	(3) *Subsample of married employees*	(4) *Full sample*	(5) *Subsample of employees*	(6) *Subsample of married employees*	(7) *Full sample*	(8) *Subsample of employees*	(9) *Subsample of married employees*
Frequency of anime view	0.17*	0.15	0.18*	0.18**	0.22*	0.19*	0.09	0.13	0.12
	(1.78)	(1.31)	(1.74)	(2.02)	(1.72)	(1.73)	(0.80)	(0.87)	(0.95)
Overidentificatio n test	p-value =0.62	p-value =0.09	p-value =0.12	p-value =0.88	p-value =0.80	p-value =0.91	p-value =0.23	p-value =0.66	p-value =0.58
R-square	0.81	0.81	0.79	0.84	0.83	0.83	0.68	0.69	0.67
Observations	1461	859	690	1461	859	690	1461	866	690

Note: Values without parentheses are marginal effects. Values in parentheses are t values calculated using robust standard errors clustered by residential area. All control variables used in the estimations in Table 3 are also incorporated as independent variables, although the results are not reported. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Hansen's J statistic is used for the overidentification test.

Table A2. Estimation results of linear IV (2SLS) model based on subsample of unmarried people (alternative specification where dummy for viewing anime is used as a key variable: dummy for children under 12 and dummy for children aged between 13 and 18 are instrumental variables).

	JP_workplace			*JP_neighbor*			*JP_family*		
	(1) *Full sample*	(2) *Subsample of employees*	(3) *Subsample of married employees*	(4) *Full sample*	(5) *Subsample of employees*	(6) *Subsample of married employees*	(7) *Full sample*	(8) *Subsample of employees*	(9) *Subsample of married employees*
Dummy of anime view	0.24	0.41**	0.42**	0.30**	0.33*	0.30*	0.15	0.19	0.22
	(1.52)	(2.13)	(2.27)	(2.13)	(1.78)	(1.70)	(0.74)	(0.79)	(0.94)
Overidentificatio n test	p-value =0.45	p-value =0.81	p-value =0.65	p-value =0.08	p-value =0.25	p-value =0.40	p-value =0.73	p-value =0.82	p-value =0.95
R-square	0.82	0.81	0.79	0.85	0.84	0.84	0.69	0.69	0.67
Observations	1461	859	690	1461	859	690	1461	866	690

Note: Values without parentheses are marginal effects. Values in parentheses are t values calculated using robust standard errors clustered by residential area. All control variables used in the estimations in Table 3 are also incorporated as independent variables, although the results are not reported. ** and *** indicate significance at the 5% and 1% levels, respectively. Hansen's J statistic is used for the overidentification test.