

Brides for Sale: Marriage Market Imbalance and Female Immigration*

Daiji Kawaguchi
Department of Economics
Hitotsubashi University
kawaguch@econ.hit-u.ac.jp

Soohyung Lee
Department of Economics and MPRC
University of Maryland
LeeS@econ.umd.edu

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Despite fairly balanced sex ratios, a large number of men in developed East Asian countries have been marrying brides from other countries since 1990. This paper examines the characteristics of men and women forming cross-border marriages, using micro level datasets from Korea and Japan. A man with low socio-economic status is more likely to marry a foreign bride but, all else being equal, his likelihood of marrying a foreign bride increases with his earnings. Foreign brides on average are more educated than comparable people in their home countries. This paper then analyzes the underlying factors that may drive the large demand for foreign brides.

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1. Introduction

International migration has been one of the core topics that economists have been examining because of its prevalence and economic impact on the source and host countries.¹ Adding to this large number of studies on immigration, this paper attempts to shed light on a type of immigration that has been neglected in the economics literature: female immigration through marriages, which takes place when a bride in one country immigrates to the country where her bridegroom resides. Historically, female immigration through marriages took place on a limited scale, often referred to as “mail-order brides” observed in the early 20th century in the United States among male-dominant immigrants.

However, in recent decades, female immigration through marriage has been occurring on a large scale across many developed countries, which has drawn much attention from the media.² A large number of dating agencies introduce women in East European countries to men in Western Europe and North America.³ In East Asia, the number of marriages between men in developed countries in the region and women from China and Southeast Asian countries has drastically grown since the mid-1990s and the volume of this type of immigrant outweighs economic immigrants. Figure 1 shows the fraction of newlywed people in Japan, Korea, and Taiwan who married a foreign national. In all three countries, the fraction of men who married a bride from a less developed country has been sharply increasing and reaches 5 to 8 percent among brides.

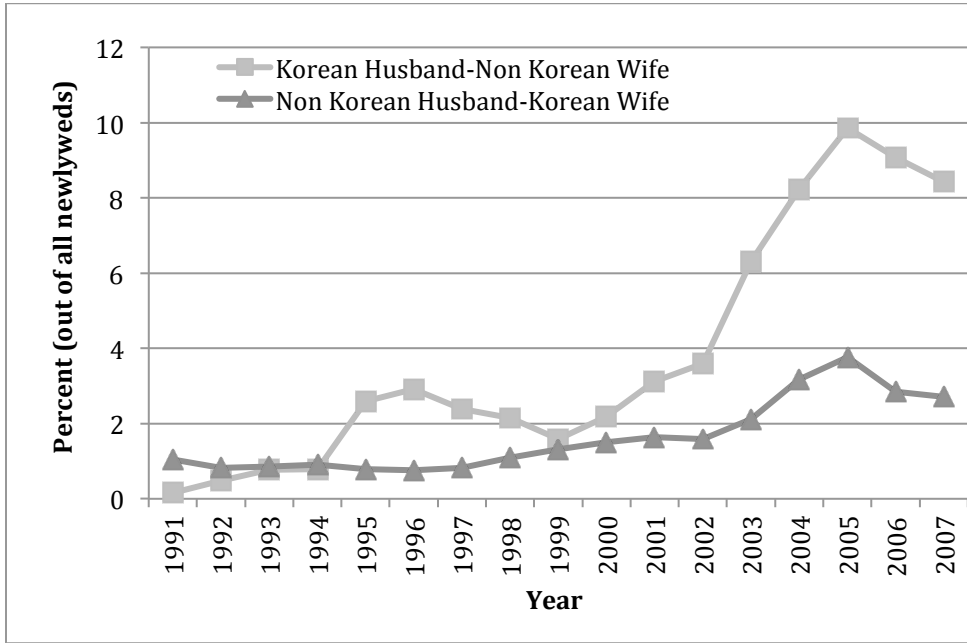
The main objective of this paper is two-fold. First, we empirically examine characteristics of people involved in the recent female immigration through marriage. Next, we examine the underlying driving forces that may account for the surge in this type of migration. For our analysis, we examine East Asian countries, particularly focusing on Japan and Korea, for the several reasons. First, these countries have been

¹ The vast literature is reviewed and introduced in Borjas (1999a and 1999b) and Dustmann, Glitz and Frattini (2008).

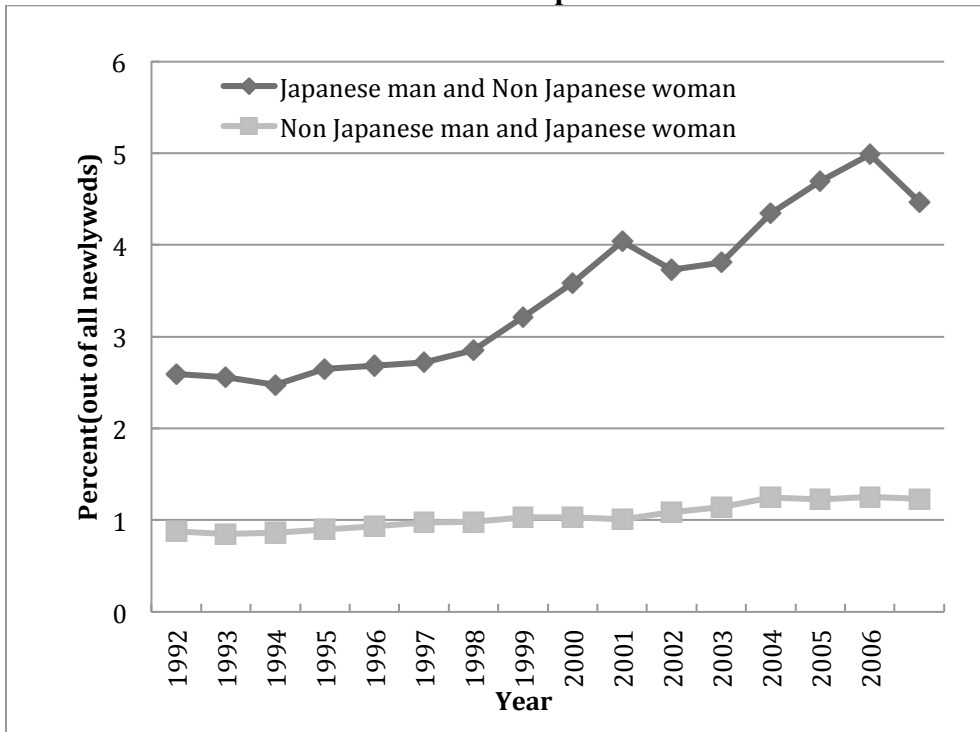
² Examples include the *New York Times* article of February 22, 2007 by Norimitsu Onishi and a US film titled “Russian Brides.”

³ For example, among 1,130 thousand persons who obtained permanent residency status in the US in 2009, 317 thousand persons obtained it because their spouse was a US citizen, while 144 thousand obtained it because of employment-based preferences (2009 Yearbook of Immigration Statistics).

Figure 1: Time Trend of International Marriage
Panel A: Korea



Panel B: Japan



experiencing a large increase in female immigration through marriages. Second, there are appropriate administrative datasets for our analysis. We have access to the micro data of marriage files of vital statistics that record the nationality of both brides and bridegrooms.

This dataset allows us to examine the characteristics of bridegrooms who marry foreign brides. This is not always the case for other countries. For example, the marriage file of vital statistics of the United States that is compiled by the NBER does not carry information on the nationality of brides and bridegrooms. Third, obtaining legal immigrants status for foreign nationals through marriage is relatively easy in these two economies and there is no legal restriction on the business of international marriage agencies.⁴ The analysis of the workings of the market without regulation is useful to understand the market forces behind the phenomenon of female immigration through marriage.

Using micro level datasets, we perform three empirical analyses. We first examine the common characteristics of men who married foreign brides. All else being equal, a high school graduate or a middle school graduate is more likely to marry a foreign bride than his counterpart college graduate by about 6 percentage points and 16 percentage points, respectively. Holding a job as a farmer or low-skilled laborer is positively correlated with the likelihood of marrying a foreign bride. Although generally these results suggest that men with low socio-economic status in both Korea and Japan rely on foreign countries to find a bride, they are not necessarily in the lowest socio-economic status. For example, men who do not have a job are about 2 percentage points less likely to marry a foreign bride. Conditional on having a job, all else being equal, the likelihood of marrying a foreign bride increases with a man's income.

Then we compare the characteristics of foreign brides with those of native brides as well as women in the brides' home countries. Conditional on their husbands' likelihood of marrying a foreign bride, we find that on average a foreign bride is younger yet less educated than a native bride. However, there are considerable variations across the brides' home countries in terms of the difference between their characteristics and those of native brides. For example, brides from China are comparable to native brides in Japan or Korea but their educational attainment is much lower. In contrast, brides from Philippines are much younger than native brides but comparable to them in terms of

⁴ This is not the case in the US. In fact, due to the upsurge in international marriage through international marriage agencies, US legislators enacted the International Marriage Broker Regulation Act of 2005 and started to restrict the issuance of K-1 fiancée visas.

educational attainment. We use the census of major countries exporting their brides to Japan and Korea and find that brides are more educated than women in their cohort.

Finally, we perform aggregate level analyses to examine the driving forces that account for the increase in foreign brides in these countries and to understand the economic factors that may determine what countries become a source country of foreign brides. In both countries, we find that among people who are in their prime age for searching for a spouse, sex ratios are fairly balanced, resulting in no significant relationship between sex ratios and the number of foreign brides.⁵ However, we find that the female's educational attainment relative to the male's is significantly correlated with the number of foreign brides. In both countries, a perception of an ideal family is a family where a husband is the leader of his family, superior to his wife in socio-economic status, and observed marriages follow this perception. If this perception does not change fast enough,⁶ then, as women's educational attainment increases faster than men's, women with high educational attainment will face more severe competition to find a man who provides a higher utility than being single. By the same token, men with low educational attainment face a smaller supply of women with who it is feasible to form a marriage. This conjecture is consistent with the data that an increasing number of women with high socio-economic status remain single and men with low socio-economic status search for wives in a foreign country.

We then examine what would determine the countries with a marriage market imbalance in selecting the countries of brides. For these analyses, we compile an aggregate-level dataset consisting of all countries from which Korea and Japan could have imported brides and each country's bilateral relationship with Korea and Japan. The analysis of macro data renders the clear result that the lower GDP per capita a country has relative to Japan or Korea, the more likely the country will send its brides to these host countries. A country's likelihood of sending brides is strongly correlated with

⁵ There are extensive literature on sex imbalances in Asian countries and its socio-economic consequences. The literature includes Park and Cho (1995), Edlund (1999), Das Gupta and Shuzhuo (1999), Oster (2005), Edlund et.al. (2007), Qian (2008), Lin and Luoh (2008) and Wei and Zhang (2009). Edlund (1999) particularly discusses marital market consequences of sex ratio imbalances.

⁶ One might argue that men's bargaining power should decline so that marriage markets clear, but, in reality, marriage has the feature of being an incomplete contract and social norms have played significant roles in suppressing inefficiencies arising from renegotiation. Thus, a market-clearing mechanism tends to involve a change in social norms and does not work in the short run.

geographic and economic proximity between source and host countries measured by the physical distance and the trade volume between two countries.

2. Micro Data and Descriptive Statistics

Both the Korean and Japanese governments require a couple to register its marriage with a local government in order for the couple's union to be recognized as a legal marriage. The collection of registrations for each year is called a "marriage register" and a subset of this information is released to the public as a part of vital statistics. For each bride and bridegroom, both countries collect information about age, marital history, employment status, occupation, current location of residence, and country of origin. By marital history, we mean whether a person was legally married prior to the current marriage. Country of origin in Korean marital register is the country where a person's parents and the majority of his or her extended family reside.⁷ Roughly speaking, the country of origin informs us about the ethnicity of a person regardless of the person's current citizenship.⁸ Japanese marital register records nationality of both bridegrooms and brides. In addition to this information, Korean marriage registers collect information about educational attainment, which is not available in Japanese marriage registers.

In order to perform micro-level empirical analysis, we obtain micro datasets from the Korean and Japanese governments: Korean marriage registers (2002 to 2005) and Japanese marriage registers (2000, and 2005).

In Korean marriage registers, we have 1,238,824 couples whose bride or bridegroom is Korean. We restrict our sample to the couples whose actual marriage ceremony took place within one year of the reporting year, yielding 1,148,486 couples.⁹

⁷ The exact terminology for the information of "country of origin" is *Bonjuk* in Korean.

⁸ For example, consider a Chinese woman who immigrated to Japan for work and acquired Japanese citizenship. For her marriage to a Japanese man, her current location is Japan but her country of origin is China. By the same token, consider a Korean woman who currently resides in the U.S. for study and registers her marriage. Her current location is the U.S. and her country of origin is Korea.

⁹ Note that in Korea, it is a common practice to have a marriage ceremony and then legally register the marriage within a year. This practice stems from the fact that cohabitation is not widely accepted in Korea and the history of a person's legal status as related to marriage is tracked down in the official document of a national household registry. Therefore, if a couple had a marriage ceremony but breaks up before registering their marriage, the official document treats them as if they had not been married. However, if a couple breaks up after registering their marriage (thus they are divorced in a legal sense), then the official document records each person's former spouse, and date of the divorce. People cannot hide their marital history. Therefore, it is likely that couples who register their marriage long after the marriage ceremony will

Among these couples, we select couples with a man whose age is between 22 and 59 and a woman whose age is between 19 and 52, resulting 1,102,112 couples in total. This range of age covers 98 percent of people of each sex and eliminates observations that appear to suffer from measurement errors.¹⁰ Finally, as our research focus is on Korean men's mate search behaviors, we exclude the couples whose groom is non-Korean. Therefore, the number of couples in the Korean dataset that we use in our analysis is 1,090,445. In panel A of Table 1, we report the summary statistics of Korean bridegrooms' characteristics (column 1) and then separately report the statistics depending on whether their bride is a native (i.e., Korean, column 2) or a foreigner (i.e., column 3). In our sample, about seven percent of bridegrooms marry foreign brides. Compared to bridegrooms who marry a Korean, on average, men who marry a foreign bride are older, less educated, more likely to be previously married, and more likely to have a job in the agricultural sector or a low-skilled job in a non-agricultural sector. Since marriage registers do not have income information, we impute a person's annual earnings based on sex, age, education, occupation, and year of marriage using the "Basic Statistics of Earnings Structure," a nationally representative survey of income.¹¹ Then we convert the imputed income to 2005 Korean won by deflating the annual consumer price index.¹² Among those who have a job, bridegrooms with foreign brides are predicted to have lower imputed annual income than those with native brides.

Overall, Japanese marriage registers provide only a subset of information that is available in Korean marriage registers. In particular, a person's educational attainment is not available, and information about employment status and occupation is available in every five years. Therefore, we use the 2000 and 2005 Japanese marriage registers, which provide employment information. By using the same sample selection criteria for the Korean data, we have 1,398,893 couples. We supplement our dataset using the

not be a random sample and thus we decide not to use them.

¹⁰ For example, in the raw dataset, we observe a bridegroom whose age is 3 but, according to Korean civil law, a person cannot legally get married if his or her age is below 15.

¹¹ The survey is conducted every year by the Korean Statistical office, and is available at www.kosis.co.kr. For our imputation, we classify people based on the following category and use the average monthly earning for the imputed income: sex (men, women), reported year (2002,...,2005), age group(20~24,25~29, 30~34,35~39, 40~44, 45~49, 50~54, 55~59), education(middle school or less, high school, college or more), and occupation (the 12 categories reported in Table 1).

¹² CPI: Bank of Korea, consumer price index. $cpi = 88.022$ if $year==2002$, $replace\ cpi = 91.576$ if $year==2003$, $replace\ cpi = 96.105$ if $year==2004$, $replace\ cpi = 100.0$ if $year==2005$

“Employment Status Survey (2002)” that is conducted by the Japanese Ministry of Internal Affairs and Communications in every 5 years. We predict a bride’s educational attainment and annual income by imputing it with the average of the outcomes of the male workers who have the same age, employment status, occupation, and live in the same location.¹³

Panel B of Table 1 reports the characteristics of Japanese bridegrooms in our dataset. In our sample, about 3.8 percent of newly wedded bridegrooms marry foreign brides. As we find in Korean marriage registers, the Japanese bridegrooms who marry a foreign bride are older, more likely to be previously married, and more likely to have a job in the agricultural sector or low-skilled non-agricultural job than bridegrooms with a Japanese bride. It is also notable that they are more likely to be self-employed or work for smaller firms. Their imputed educational attainments are on average lower and so are their imputed earnings.

3. Micro-level Analysis

In this section, we conduct empirical analysis to address the following questions. What are the common characteristics of men who marry a foreign bride in Korea and Japan? Is there any systematic pattern in men’s characteristics associated with their bride’s home country? What would be the tradeoff between marrying a native bride relative to a bride from a foreign country? What type of women become foreign brides relative to the population of their home country?

General Characteristics of Korean and Japanese Men Who Married a Foreign Bride

We first analyze what characteristics of a man are more likely associated with the likelihood of marrying a non-Korean woman. We use a Probit model to regress whether a man marries a foreign bride on various sets of observables. We report the coefficients as well as marginal effects evaluated at the mean of the observables in brackets. In column 1 of Table 2 Panel A, we regress the dependent variable on the man’s age, whether he was

¹³ Type of employment is classified into four categories: self-employed, agricultural household, employed by a firm with fewer than 100 employees, employed by a firm with 100 or more employees or company executives. The unit of location is “prefecture,” which is an administrative unit equivalent to a state in the U.S. In Japan, there are 47 prefectures.

previously married or not, then educational attainment, and year dummies. Note that the omitted category is tertiary education. We find that a man who has less than a high school education is 15 percent more likely to marry a foreign bride. An older man is more likely to marry a foreign bride. These two characteristics show that, overall, the types of men who are considered less desirable are more likely to marry a foreign bride. An interesting feature is that, all else being equal, a never-married man is more likely to marry a foreign bride. In column 2, we follow the specification in column 1 but additionally include dummy variables for occupation, with white-collar job being the omitted category. The regression results show that, all else being equal, farmers are much more likely to marry a foreign bride, relative to white-collar workers, which is the omitted category. In column 3, we use the imputed logarithm of income. We find that, all else being equal, a man with a higher income is more likely to marry a foreign bride. This finding is robust whether we use location-fixed effects or additionally include occupation.

We next examine the characteristics of Japanese bridegrooms who marry foreign brides. In parallel to the Korean analysis, the indicator of marrying a foreign bride is regressed on a Japanese bridegroom's characteristics via Probit. The estimated coefficients reported in column 1 of Table 2 Panel B indicate that elder and never married men are more likely to marry a foreign bride. Moreover, workers in service, agriculture, logistics/information, and blue-collar occupations are more likely to marry foreign brides than those in clerical work. In column 2 we report the regression results with age, previous marital experience, and predicted educational backgrounds. Dummy variables for household type and occupation are not included because those characteristics are used for predicting educational backgrounds. Conditional on age and previous marital experience, those men who are predicted to have graduated from high school are less likely to marry foreign brides than those who are predicted to have tertiary education. In contrast, those who are predicted to have graduated from junior high school are more likely to marry foreign brides. The finding in Panel B of Table 1 that high school graduates are more likely to marry foreign brides than those with tertiary education does not hold here because predicted educational background and age are strongly correlated. However, it is worth emphasizing that those who are predicted to have particularly lower education backgrounds are more likely to marry foreign brides even after controlling for

age. Similar to the Korean finding, those who are predicted to have higher earnings are more likely to marry foreign brides, as reported in column 3. Inclusion of prefecture dummy variables in the estimation does not change the estimation results as indicated in columns 4 to 6.

Korean and Japanese Men's Characteristics Depending on Their Bride's Home Country

Next we examine whether there are any systematic differences in men's characteristics depending on what country their brides came from. Table 3 reports the average characteristics of Korean bridegrooms depending on their bride's home country. Note that we define a country as developed if the country's GDP per capital is equal to or higher than South Korea's. Since the Korean Statistical Office started providing all country codes after 2004 in micro-level datasets, we use two waves (years 2004 and 2005) of our sample to analyze the pattern.

Among the men who married brides from developing countries (columns 2 to 5), those who married brides from other developing countries excluding China, Vietnam, and Philippines are most comparable to the men who married Korean brides in the sense that they are, on average, the youngest and the most educated among those who married brides from developing countries. Over 20 percent of the men who married either Vietnamese or Filipino brides are farmers, a much larger percentage than other groups of Korean men. Finally, the Korean men who married a bride from a developed country are comparable to those who married a Korean bride with one noticeable difference: The fraction of students is over 10 percent among the Korean men with a bride from a developed country and 2.4 percent among the Korean men with a Korean bride.

Since many of these characteristics are correlated with each other (e.g., being farmer vs. living in the greater Seoul area), we use a multinomial model to examine the marginal contribution of one dimension of the characteristics to the probability of marrying a bride from one of six groups: Korea, China, Vietnam, Philippines, other developing country, and a developed country. In particular, we estimate a multinomial Logit model that includes men's age and dummy variables for marital history, education, occupation, residence, and year as explanatory variables. For expositional simplicity, we

report the marginal effect of only a subset of characteristics on the probability of marrying a bride from a certain country in Table 4. Note that we compute the marginal effect at the mean value of explanatory variables and increase one year in a man's age from the mean age (32.10), or change a variable from zero to one. The results confirm our earlier findings based on comparing average characteristics in Table 3. As a man gets older, his likelihood of marrying a foreign bride increases. Relative to a college graduate, a high school graduate is 6.6 percentage points less likely to have a Korean bride, 5.1 percentage points more likely to have a Chinese bride, 0.87 percentage points more likely to have a Vietnamese bride, and 0.26 percentage points more likely to have a Filipino bride. All else being equal, being a farmer is strongly correlated with the likelihood of marrying a woman from a developing country excluding China and the magnitude is comparable to the effect of having a middle school education or less relative to a having college education.¹⁴

Comparison of Brides' Characteristics Depending on Their Home Country

So far we have examined the characteristics of Korean men depending on the source country of their brides. In this subsection, we examine the characteristics of brides depending on their source country. Table 5 shows that, depending on source country, the average characteristics of brides are different. The average age of brides from Vietnam and Philippines are 22.6 and 25.8 respectively, much younger than that of the bridegrooms (39.2 and 39.1 respectively). Brides from developed countries are on average more educated than Korean brides. Filipino brides are generally more educated than those from China or Vietnam. The majority of brides from developing countries are not working or living outside of South Korea at the time of registering their marriage with the Korean government.

¹⁴ Due to space limitations, we do not report the coefficients for regional dummy variables. Among them, the following findings are worth noting. All else being equal, residing in the North Chungcheong area (the middle region of Korea) instead of Seoul is correlated with a 0.22 percentage points increase in marrying a Filipino woman, and this magnitude is similar to the marginal effect of having a high school degree instead of a college degree. In contrast, residing in North Kyungsang (in south west Korea) is strongly correlated with the probability of marrying a Vietnamese woman and this magnitude is similar to the marginal effect of having a high school degree instead of a college degree.

Who Becomes a Foreign Bride: Comparison of Brides' Characteristics and Population of Their Home Countries

Although the Korean men who married a foreign bride generally have low socio-economic status, ex-ante it is not clear whether foreign brides also have low socio-economic status as compared to population in their home countries. In this subsection, we compare the foreign brides and their counterparts in their home country in terms of educational attainment.¹⁵ To do so, we use the latest Census of China (2005), Vietnam (1999), and Philippines (2000).¹⁶

Columns 1 to 3 of Table 6 show the distribution of women's educational attainment in China (Panel A), in Vietnam (Panel B), and in Philippines (Panels C), whereas columns 4 to 6 of the table show the distribution of educational attainment among brides of Korean men coming from the corresponding country. For example, among Chinese brides in 2004 and 2005, 6.96 percent have some tertiary education, 87.26 percent have secondary education, and 5.78 percent have primary education or no formal education. In most birth cohorts, we find that the fraction of women with no formal education or primary education is much smaller among women who married Korean men than in the population. In the last row, we weight the population data to match the cohort group distribution among Chinese women marrying Koreans and compute the distribution of the educational attainment. When we control for the age distribution, 34.20 percent of Chinese women in China have no formal education or primary education; 58.31 percent have secondary education; and 7.49 percent have tertiary education. Given birth year group, the hypothesis that the two groups have the same distribution is rejected at 1 percent from the Kolmogorov and Smirnov test (all p-values are 0.000).

We perform the same exercise for Vietnamese and Filipino brides. The last census available for Vietnam and Philippines is 1999 and 2000, respectively. Because some of

¹⁵ Note that we do not focus on occupation because we do not have a good sense of whether a foreign bride is not working because she quit her job because she married a Korean man or simply because she does not work.

¹⁶ For the 2005 Chinese census, we use the cross tabulation of sex, age, and educational attainment provided by the National Bureau of Statistics of China (<http://www.stats.gov.cn/english/>). The tabulation reports the number of individuals in each category. The census of Vietnam and Philippines are available at IPUMS international (<https://international.ipums.org/international/>).

brides from these countries were too young to complete their educational attainment in the census year, we use foreign brides who were born before 1980. This restriction allows them to be over 19 year old when the census was carried out. Panel B of Table 6 compares Vietnamese women in the 1999 census and Vietnamese brides in Korea. We find that, on average, Vietnamese brides in Korea are more educated. In all birth cohort groups, the hypothesis that the two groups have the same distribution is rejected at the 1 percent level from the Kolmogorov and Smirnov test. Panel C of Table 6 compares Filipino women in the 2000 census and Filipino brides in Korea; Panel D of Table 6 compares Filipino women working overseas and Filipino brides in Korea. Overall, Filipino brides in Korea are more educated than both Filipino women and Filipino female overseas workers. In a give birth-year group, the distribution of educational attainment among brides of Korean men is different from that of women in Philippines and that of overseas female workers from Philippines (Kolmogorov and Smirnov test – p-values are less than 0.000).

Tradeoffs of Bride's Characteristics Depending on Source Countries of Brides

Because Korean men select the source country of their brides in a non-random fashion, (i.e., their average characteristics differ according to their bride's country), the previous table does not tell us the tradeoff in terms of brides' characteristics that a Korean man may face when he decides where to find a bride. Therefore, we perform the following thought experiment. Suppose we choose a man whose average characteristics are the same as those of the Korean men who married a Chinese bride. What would be the average characteristics of his bride if he chose a bride from Korea, China, Vietnam, Philippines, another developing country, and a developed country?

To perform this thought experiment, we use the propensity score matching method as follows. First, we define a variable D , treatment status, which is one if a bride is from China and zero if a bride is from Korea. The outcome of interest is the bride's characteristics: age, marital history, and educational attainment, and we want to know what type of woman a man will marry by selecting China, instead of Korea, as a source country of brides. We compute the propensity score by estimating a Probit model to predict D based on men's age, marital history, education, occupation, residential location,

and year. We then match the two groups (i.e., men who married a Chinese woman and men who married a Korean woman) with the 5 nearest neighbors matching. Then we compare the average characteristics of the brides of these two groups in terms of age, marital history, and education. The average characteristics of Korean men who married to Chinese and also those of Chinese brides used in the regression are reported in columns 1 and 2 of Table 7.¹⁷ Assuming that the conditional independence assumption holds, the results suggest that by switching the source country of a bride from Korea to China, a man can marry a woman who is younger (35.3 vs. 37.5), more likely to have been married previously (64.5 vs. 60.9), and less educated. All these differences are statistically significant at the 1 percent level. These findings remain the same if we use kernel instead of the 5 nearest neighbors matching, as shown in column 7, or if we use a Logit model instead of Probit. Similarly, we conduct the analysis where D is one if a bride is from China and zero if a bride is from Vietnam and report the results in column 3 and so on. Conditional on men's characteristics, Vietnamese brides are the youngest but least educated and Filipino brides have the highest likelihood of having tertiary education.

4. Aggregate-level analysis

4.1 Where to Accept Brides From?

In this section, we examine the common characteristics of the countries from which Korea and Japan accept brides. We perform this exercise because if the two countries present similar empirical patterns in terms of their choice of countries for foreign brides, then our findings can be useful for us to predict what countries may become a country that will send brides to countries where there is a demand for foreign brides (such as China and India).

¹⁷ There exist some small differences between column 2 and the previous table reporting the average characteristics of Chinese brides. This is because, in this table, we report the average characteristics of Chinese brides for whom we have complete information about age, marital history, education, occupation, and residential area. In contrast, Table 5 includes people for whom we know only a subset of characteristics in computing the average characteristics.

As a starting point, we draw graphs to show the major source countries exporting brides to Korea and Japan and their relative importance over time. By relative importance, we mean the fraction of foreign brides from a given country out of all foreign brides in each year. Panel A of Figure 2 shows the case for Korea and Panel B of Figure 2 does for Japan. Figure 2 Panel A reports that China, Vietnam, and Cambodia are the top three countries in terms of sending brides to Korea. The number in 2007 is about 5 times as large as the number in 2000 for China. The growth rate is even higher for Vietnam and Cambodia. As for Japan, Figure 2 Panel B reports that the top three source countries of bride in 2007 are China, Philippines, and Korea. The number of brides from China and from Philippines has grown compared with 2000, whereas the number from Korea has declined. Figure 2 shows that, overall, countries exporting brides to Korea and Japan are located close to the two host countries and less wealthy countries than the host countries.

To organize the casual observations reported above, we further examine the relationship between the number of newly wedded brides and the levels of economic attainment, as well as proximity to the host country, across source countries. We collect information about 193 countries around the world, from which Korea or Japan could have accepted brides. The information includes a country's economic status (e.g., GDP per capita) and demographic characteristics (e.g., population size), as well as its bilateral relationship with Korea/Japan (e.g., trade volume and physical distance). We compile this information using the databases provided by the *CEPII* (for physical distance¹⁸) and by the World Bank (for the rest of the information).

Then, for a given country and year, we combine this cross-country dataset with the number of foreign brides from that country who married a Korean (Japanese) man in that year. For the number of foreign brides for a country for a given year, we use aggregate tables based on Korean and Japanese marriage registers from 2000 to 2007, instead of using our micro-level datasets. In each year, both the Korean and Japanese governments published a summary document of annual vital statistics, which includes the list of major countries that foreign brides came from and the number of brides from each

¹⁸ The dataset is available at <http://www.cepii.fr/anglaisgraph/bdd/distances.htm>. The CEPII provides two measures of distance between the two countries. One is the physical distance between the two capital cities. The other is the population-weighted distance based on multiple locations. We use the first measure because it is available for a large number of countries and is highly correlated with the population-weighted distance.

source country. By major country, we mean a country that sends more than 100 brides to either Korea or Japan. The remaining countries are classified as “others.” We chose to use this aggregate level information, instead of our micro-level datasets, because we can expand our analysis for longer periods; moreover, our analysis aims to understand what countries become major sources for bridal trades, instead of countries that may incidentally have a few women marrying either Korean or Japanese men. Table 8 shows the summary statistics of our aggregate level dataset. The unit of observation is a country times year. We use only the observations for which we have basic information on economic status such as GDP per capita. This yields 1,108 observations for Korea and 1,232 for Japan.

GDP per capita is used as a measure of national level of economic attainment and the gross trade amount, which is the sum of import and export volumes, with a host country is used as a measure of proximity. GDP per capita as a measure of economic attainment is straightforward but the gross trade amount as a measure of economic proximity needs some explanation. Total gross trade flow is used to approximate geographic distance as well as the size of the source countries’ economies. The gravity equation that models the trade volume between two countries as the function of geographic distance and sizes of two economies is known to fit the data well (Feenstra, 2004). We additionally include the travel volume to proxy for economic and cultural distance that affect the size of international marriage between host and source countries.

The inflow of brides and bridegrooms is regressed on log GDP and log gross trade amount to extract partial effects of these two variables on the inflow. Because the incidence of international marriage is limited to certain countries, first the indicator of positive count is regressed on these two variables, and then the log of inflow is regressed on the same repressors.¹⁹

Panels A and B of Table 10 report Probit results for Korea and Japan, respectively. Note that we do not include country-fixed effects but cluster the standard errors at country level. Column 1 indicates that a higher GDP per capita of a source country induces the incidence of bride inflow to Korea while the estimated coefficient is

¹⁹ Tobit and Least Absolute Distance estimators are estimated but convergence was not attained due to the limited number of source countries for international marriage compared with the potential list of countries.

not statistically significant. It also indicates that the larger the net trade amount, the larger the inflow of brides. The regression reported in column 2 explaining the number of brides that flowed into Korea renders a clearer result. A source country's high GDP per capita reduces the number of brides marrying Korean men, while a large volume of net trade increases it. Overall, pooled regression results indicate that wealthier countries send fewer brides to Korea and countries with closer economic ties to Korea send more brides.

Allowing for regions' fixed effects draws pictures similar to those reported in columns 4 to 6. The increase of GDP per capita within a country contributes to an increase the inflow of brides into Korea, while the increase of net trade volume does not affect it. The difference between pooled and fixed-effects results implies the discrepancy between permanent and temporary determinants of international marriage.

Relying on pooled regression results, we can roughly conclude that Korean men are more likely to marry foreign women from less wealthy countries. In terms of trade volume, an active trade between Korea and a source country increases the number of marriages between Korean men and the source country's women, while it decreases the number of the marriages between Korean women and the source country's men. This pattern at least implies that the stronger economic tie explains the marriages between Korean men and foreign women, but not those between Korean women and foreign men.

Panel B of Table 9 confirms that Japan's pattern of international marriage between native men and foreign women is similar to Korea's. Columns 1 and 2 demonstrate that Japanese men tend to marry foreign women from countries with lower incomes but high trade volumes with Japan. The specification with fixed effects, reported in columns 3 and 4, implies the difficulty of explaining the time-series variation of international marriage conditional on country-specific heterogeneity. The only clear relationship implied is the positive effect of economic growth on the increase in the number of brides who marry Japanese men and this tendency coincides with the findings from Korea. The regression of the number of marriages between Japanese men and foreign women, reported in Panel B, indicates that neither national income nor trade volume systematically explains it, except for the finding that the larger the trade volume, the higher the incidence and the larger the number of marriages. Overall, it is rather difficult to find a conclusive result from Japan, but pooled OLS results reconfirm the

tendency of Japanese men to marry foreign women from less wealthy countries with higher trade volumes.

Both Analyses of the Korean and Japanese cases commonly points to the general tendency that foreign women from less wealthy countries with higher trade volumes tend to marry native men in the long run. A similar pattern is not necessarily found for marriages between native women and foreign men. Explaining the short-term fluctuation in international marriage allowing for source countries' fixed effects seems rather difficult.

It is understandable that native men tend to marry women from countries with stronger economic ties as measured by net trade volume, but then why do they tend to marry women from less wealthy countries? The theoretical discussion in the next subsection attempts to explain this systematic pattern.

4.2 Driving Forces for Demand of Foreign Brides

[to be completed]

5. Conclusion

This paper studies the economic characteristics that account for the large number of new marriages to foreign brides in Korea and Japan. Our findings identify some common economic characteristics that are correlated with what kind of countries are more likely to export their women as foreign brides to those two countries, and, for a given country, what types of women are more likely to become foreign brides. We plan to apply for our findings in the context of China and India, which face a more severe marriage market imbalance. As in Korea and Japan, in these two countries, women are becoming more educated at a faster rate than men. Moreover, the raw sex ratio is imbalanced. We hope to examine when and to what extent the two countries will start to exhibit a demand for foreign brides and the potential countries that may export their women to these two countries as foreign brides. We find this future analysis important because, unlike Korea and Japan, the marriage market imbalance of China and India may severely affect other countries' domestic marriage markets.

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Table 1: Descriptive Statistics of Vital Statistics

	All	Native	Foreign
	(1)	Bride	Bride
	(1)	(2)	(3)
Panel A: Korean Men (no. obs.) ^{a)}	(1,090)	(1,014)	(76)
Age	31.65	31.01	40.25
Ever married (%)	13.48	11.42	41.08
Education (%)			
- Junior college or more	57.42	60.45	16.48
- High school	37.12	35.62	57.39
- Middle school or less	5.46	3.93	26.13
Not working (%)	6.18	6.28	4.82
Occupation (% if work)			
- White Collars	34.49	35.26	24.25
- Government Officials and Managers	1.99	2.07	0.94
- Professionals	8.8	9.26	2.64
- Skilled Laborer, Semi Professional	17.22	17.76	10.07
- Service and retailer	19.72	19.13	27.63
- Agriculture	2.11	1.64	8.34
- Laborer with certificates	7.35	7.03	11.69
- Blue collar workers at factories	3.83	3.65	6.18
- Simple task based workers (low skill)	2.47	2.05	8.13
- Military service	2.03	2.17	0.12
Average: Imputed annual earnings ^{b)}	22.22	22.07	24.15
Panel B: Japanese Men (no. obs.) ^{a)}	(1,475)	(1,344)	(59)
Age	30.96	30.49	42.22
Ever married (%)	16.52	15.21	47.98
Imputed education (%) ^{c)}			
- College or more	37.98	38.18	33.09
- Junior College	14.82	14.83	14.76
- High school	40.23	40.11	43.06
- Middle school or less	6.37	6.29	8.20
Not working (%)	3.40	3.36	4.36
- Professionals	28.41	28.76	19.87
- Manager	2.50	2.36	5.80
- Clerical	12.32	12.48	8.48
- Sales	12.32	14.54	10.86
- Service	14.39	10.21	12.92
- Security	2.82	2.88	1.45
- Agriculture	1.26	1.22	2.27
- Logistics/Information	5.92	5.79	9.06
- Blue Collar	16.73	16.54	21.27
- Not Classified	5.33	5.22	8.02
Average: Imputed annual earnings ^{c)}	40.61	40.62	40.51

Note: a) "no. obs." refers to the number of men and the unit is 1000 persons. b) for individuals who are working for a job other than military, the earnings are imputed based on sex, age, education, occupation, and year of marriage. The unit is one million 2005 Korean won, roughly comparable to 1000 US dollars. c) Educational attainment and earnings are imputed based on sex, employment status, occupation and prefecture of residence using the Japanese Employment Status Survey (2002). c) Educational attainment and earnings are imputed based on sex, employment status, occupation and prefecture of residence using the Japanese Employment Status Survey (2002). The unit is one hundred thousand Japanese yen, roughly comparable to 1000 US dollars.

Table 2: Determinants of Marrying Foreign Wives**Panel A: Korean Men, 2002-2005**

Probit model, marginal effects

	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.006*** (0.000)	0.006*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	0.004*** (0.000)
Ever married	-0.019*** (0.000)	-0.018*** (0.000)	-0.018*** (0.000)	-0.016*** (0.000)	-0.018*** (0.000)	-0.016*** (0.000)
High school	0.060*** (0.001)	0.054*** (0.001)	0.071*** (0.001)	0.053*** (0.001)	0.071*** (0.001)	0.065*** (0.001)
< High school	0.150*** (0.002)	0.124*** (0.002)	0.198*** (0.003)	0.123*** (0.002)	0.198*** (0.003)	0.186*** (0.002)
Imputed log annual income			0.032*** (0.001)		0.031*** (0.001)	0.075*** (0.001)
Government, Manager		-0.008*** (0.001)		-0.008*** (0.001)		-0.019*** (0.001)
Professional		-0.013*** (0.001)		-0.013*** (0.001)		-0.021*** (0.000)
Skilled laborer		-0.004*** (0.001)		-0.003*** (0.000)		-0.007*** (0.000)
Service and retailer		0.004*** (0.000)		0.004*** (0.000)		0.010*** (0.000)
Farmers		0.044*** (0.002)		0.048*** (0.002)		0.057*** (0.002)
Laborer with certificates		0.005*** (0.001)		0.007*** (0.001)		0.011*** (0.001)
Production workers		0.002*** (0.001)		0.005*** (0.001)		0.010*** (0.001)
Low skilled laborers		0.019*** (0.001)		0.020*** (0.001)		0.065*** (0.002)
Students		0.040*** (0.002)		0.030*** (0.002)		
Military Service		-0.027*** (0.001)		-0.025*** (0.001)		
Not in work		-0.015*** (0.001)		-0.015*** (0.001)		
Regional Dummy	N	N	N	Y	Y	Y
Pseudo R2	0.27	0.28	0.29	0.29	0.29	0.30
No. obs.	1,082,556	1,072,283	983,011	1,069,234	983,011	983,011

Note: Standard errors are in parenthesis. The omitted categories are “junior college or more” for education and “white collar” jobs for occupation.

Panel B: Japanese Men, 2000 and 2005
 Probit model, marginal effects

	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.05*** (0.00)	0.07*** (0.00)	0.05*** (0.00)	0.05*** (0.00)	0.06*** (0.00)	0.05*** (0.00)
Ever Married	0.13*** (0.01)	0.12*** (0.01)	0.18*** (0.01)	0.16*** (0.01)	0.15*** (0.01)	0.21*** (0.01)
Self employed	0.17*** (0.01)			0.15*** (0.01)		
Employed -99	0.16*** (0.01)			0.14*** (0.01)		
Employed 100-, Executives	-0.06*** (0.01)			-0.10*** (0.01)		
Professionals	0.00 (0.01)			0.00 (0.01)		
Manager	0.08*** (0.01)			0.07*** (0.01)		
Sales	0.01 (0.01)			0.02** (0.01)		
Service	0.21*** (0.01)			0.22*** (0.01)		
Security	-0.11*** (0.02)			-0.07*** (0.02)		
Agriculture	0.27*** (0.02)			0.43*** (0.02)		
Logistics/Information	0.20*** (0.01)			0.22*** (0.01)		
Blue Collar	0.25*** (0.01)			0.28*** (0.01)		
Not in work	-0.39*** (0.01)			-0.34*** (0.01)		
P(Educ=12)		-0.99*** (0.01)			-0.91*** (0.01)	
P(Educ=9)		2.86*** (0.04)			2.89*** (0.04)	
Imputed log annual income			0.21*** (0.01)			0.11*** (0.01)
Prefecture Dum.	N	N	N	Y	Y	Y
Pseudo R2	0.17	0.17	0.15	0.19	0.19	0.17
No. obs.	1,398,893	1,398,893	1,398,893	1,398,893	1,398,893	1,398,893

Note: Standard errors are in parenthesis. Classified as agricultural household, or a household without job is the omitted category for household type. Being clerical is the omitted category for occupation. Educational background and log annual earnings are imputed from employment classification, occupation and prefecture of residence based on Employment Status Survey 2002.

Table 3: Characteristics Bridegrooms by Brides' Nationality
Panel A: Korea 2002-2005

	Bride's home country					
	Korea	China	Vietnam	Philippines	Other developing	Developed
	(1)	(2)	(3)	(4)	(5)	(6)
% out of newlyweds	91.08	6.47	1.14	0.32	0.60	0.39
Age	31.28	42.33	39.15	38.14	37.57	32.19
(std)	5.60	7.81	5.88	6.10	6.60	6.04
Ever married	0.12	0.50	0.27	0.28	0.34	0.13
Education						
- jr. college or more	62.89	11.23	10.83	16.89	25.56	74.17
- high school grad	33.54	60.81	62.66	53.56	55.56	23.42
- middle school or less	3.57	27.96	26.50	29.55	18.88	2.41
Occupation						
White collar	39.65	25.00	19.53	19.37	25.91	37.20
Government, Manager	1.04	0.68	0.48	0.81	1.09	0.88
Professional	8.81	1.32	0.85	2.73	3.28	11.88
Skilled laborer	10.58	7.44	5.92	8.09	9.55	9.01
Service and retailer	18.68	29.63	20.74	19.49	25.22	16.55
Farmers, fishers	1.31	4.61	25.91	21.06	9.05	1.07
Laborer with certificates	6.49	11.62	11.44	11.93	11.64	3.51
Blue collar workers	3.11	6.19	5.48	5.29	5.12	1.75
Low skill laborers	1.79	8.90	6.96	6.28	5.02	1.56
Students	2.43	0.39	0.15	0.70	0.78	10.91
Military service	2.18	0.08	0.03	0.12	0.03	0.88
Unemployed	3.94	4.16	2.51	4.13	3.31	4.82
Impute monthly income ^{a)}	1,883.13	2,045.56	2,023.34	2,021.31	2,048.86	2,028.58
Logarithm of income ^{a)}	7.52	7.61	7.60	7.59	7.61	7.59
No. obs.	495,164	35,149	6,223	1,750	3,272	2,103

Note a) for individuals who are working for a job other than military, the earnings are imputed based on sex, age, education, occupation, and year of marriage. The unit is one thousand 2005 Korean won, roughly comparable to 1 US dollar.

**Table 4: Multinomial Logit of Brides' Nationality on Bridegrooms' Characteristics
Panel A: Korea 2002-2005**

	Bride's home country				
	Chinese	Vietnam	Philippines	Other developing	Developed
	(1)	(2)	(3)	(4)	(5)
Age	0.34%	0.05%	0.02%	0.04%	0.01%
Ever married	-0.77%	-0.30%	-0.11%	-0.11%	0.00%
High school grad	5.13%	0.87%	0.26%	0.45%	-0.16%
Middle school grad or less	11.45%	1.90%	0.81%	0.87%	-0.22%
Government, Manager	-0.83%	-0.09%	0.05%	0.07%	-0.08%
Professional	-1.31%	-0.24%	0.00%	-0.10%	0.10%
Skilled laborer	-0.38%	-0.06%	0.03%	0.07%	-0.01%
Service and retailer	0.17%	0.03%	0.01%	0.08%	0.02%
Farmers, fishers	0.51%	1.87%	0.67%	0.92%	0.03%
Laborer with certificates	0.33%	0.08%	0.07%	0.18%	-0.06%
Blue collar workers at factories	0.21%	0.04%	0.05%	0.09%	-0.05%
Low skill laborers	1.02%	0.25%	0.10%	0.15%	0.08%
Students	-0.15%	-0.24%	0.02%	-0.03%	1.36%
Military service	-1.95%	-0.35%	-0.14%	-0.42%	-0.13%
Unemployed	-1.09%	-0.19%	-0.03%	-0.15%	0.16%
Logarithm of imputed earning	0.24%	0.31%	0.01%	0.01%	0.01%
No obs.			534,327		
Pseudo R2			0.27		

Note: Marginal effects of multinomial Logit estimation are reported. Year and regional dummy variables are included.

Table 5: Brides' Characteristics by Their Home Countries
Panel A: Korea 2002-2005

	Bride's home country					
	Korea	China	Vietnam	Philippines	Other developing	Developed
	(1)	(2)	(3)	(4)	(5)	(6)
Age	28.80	35.31	22.62	25.80	27.55	30.57
(std)	5.35	8.30	4.27	5.07	6.33	6.12
Ever married	0.14	0.65	0.02	0.01	0.14	0.11
Education						
- Jr. college or more	59.89	6.88	4.46	43.25	47.81	76.27
- High school	36.52	48.25	45.88	50.41	41.34	22.27
- Middle school or less	3.59	44.87	49.66	6.33	10.84	1.46
Occupation						
- White collar workers	24.68	5.96	2.01	6.78	7.01	17.57
- Government officials, manager	0.21	0.03	0.02	0.06	0.03	0.25
- Professional	9.09	0.72	0.30	2.60	3.60	11.24
- Skilled laborer	5.74	0.69	0.39	1.63	1.77	3.63
- Service and retailer	7.74	5.68	1.62	4.42	4.82	6.63
- Farmers, fishers	0.23	1.21	11.52	0.97	2.22	0.15
- Laborer with certificates	1.16	0.81	0.62	0.42	1.13	0.54
- Blue collar workers	0.31	0.26	0.27	0.24	0.32	0.00
- Simple task based workers	0.43	1.26	0.59	0.79	1.35	0.15
- Students	2.15	0.82	1.01	1.03	4.12	7.66
- Military service	0.18	0.09	0.12	0.18	0.19	0.59
- Unemployed	48.09	82.45	81.53	80.88	73.43	51.60
No. obs.	495,164	35,149	6,223	1,750	3,272	2,103

Table 6: Comparison between brides and women in their home country
Panel A: Korea 2002-2005

A. Chinese Brides							
Birth year	Population (Women)			Brides			
	Primary (1)	Secondary (2)	Tertiary (3)	Primary (4)	Secondary (5)	Tertiary (6)	Distribution (7)
'81-'86	9.85	86.81	3.34	4.38	84.19	11.43	11.85
'76-'80	14.32	71.22	14.45	3.12	81.00	15.88	15.12
'71-'75	20.86	67.08	12.07	4.20	87.17	8.62	16.16
'66-'70	30.27	61.32	8.41	5.42	89.84	4.75	19.35
'61-'65	37.62	56.58	5.8	6.55	90.71	2.74	20.88
'56-'60	37.81	57.37	4.82	8.93	89.30	1.77	12.83
'51-'55	49.96	46.79	3.25	14.31	83.53	2.17	3.82
All	27.18	64.72	8.11	5.78	87.26	6.96	100.00

B. Vietnamese Brides							
Birth year	Population (Women)			Brides			
	Primary (1)	Secondary (2)	Tertiary (3)	Primary (4)	Secondary (5)	Tertiary (6)	Distribution (7)
'76-'80	38.11	54.28	7.60	6.13	84.98	8.89	67.38
'71-'75	30.60	65.34	4.06	6.00	86.67	7.33	20.65
'66-'70	32.55	64.66	2.79	7.03	82.81	10.16	8.81
'61-'65	33.24	63.46	3.30	4.35	91.30	4.35	3.17
All	35.92	57.77	6.31	6.13	85.34	8.53	100.00

C. Filipino Brides							
Birth year	Population (Women)			Brides			
	Primary (1)	Secondary (2)	Tertiary (3)	Primary (4)	Secondary (5)	Tertiary (6)	Distribution (7)
<i>All</i>							
'76-'80	19.44	39.83	40.73	1.15	47.87	50.98	61.55
'71-'75	24.92	39.36	35.71	1.20	43.03	55.78	25.33
'66-'70	29.08	38.43	32.49	2.13	46.81	51.06	9.49
'61-'65	34.76	33.84	31.40	3.85	34.62	61.54	2.62
'56-'60	41.33	31.01	27.66	0.00	77.78	22.22	0.91
'51-'55	47.25	28.02	24.73	0.00	0.00	100.00	0.10
All	22.37	39.33	38.30	1.31	46.42	52.27	100.00
<i>Overseas Workers</i>							
'76-'80	15.36	37.61	47.03				
'71-'75	9.57	35.29	55.14				
'66-'70	12.1	37.17	50.72				
'61-'65	15.27	35.47	49.25				
'56-'60	20.45	34.68	44.87				
'51-'55	25.35	32.9	41.74				
All	13.64	36.89	49.47				

Table 7: Tradeoff between bride's characteristics
Panel A: Korea 2002-2005

	<u>Bridegrooms</u>		<u>Bride's home country</u>			
	Korea (1)	Korea (2)	China (3)	Vietnam (4)	Philippines (5)	Other developing (6)
Age	42.3	37.52	35.26	23.44	25.93	38.72
Ever married (%)	50.29	60.87	64.49	2.89	2.10	44.53
Education (%)						
- Jr. college or more	61.04	22.84	6.93	6.60	42.02	31.60
- High school	27.64	51.62	48.45	48.36	51.60	64.83
- Middle school or less	0.66	25.54	44.61	45.04	6.39	3.57

Table 8: Descriptive statistics of aggregate analysis data

	All (1)	Major exporters ^{a)} (2)	Non-major exporters ^{a)} (3)
Panel A. Korea			
No. obs.	1,135	28	1,107
No. of brides (unit: 1000 persons)	575	2,988	-
GDP per capita (unit: 1000 constant USD)	7,345	13,846	7,181
Volume of trade with Korea (unit: 1 mil. USD)	242	2,713	179
Physical distance (unit: kilometer)	9,515	4,096	9,656
Panel B. Japan			
No. obs.	1,232	49	1,183
No. of brides (unit: 1000 persons)	3,555	4,052	-
GDP per capita (unit: 1000 constant USD) ^{b)}	6,832	8,385	6,768
Volume of trade with Japan (unit: 1 mil. USD)	510	5,313	312
Physical distance (unit: kilometer)	10,172	7,968	10,266

Note: The unit of observations is country times year. a) Major exporters mean the observations that send more than 100 brides to Korea or Japan. Examples of major exporters are China, Vietnam, Philippines, Japan, and Cambodia for Korea; and China, Philippines, Korea and Thailand for Japan.

b) By constant USD, we mean one 2005 US dollar.

Table 9: Cross-country evidence of the incidence and volume of bride import
Panel A: Recipient Country: Korea, Sample Period: 2000-2007

A.1 Dependent Variable: =1 if more than 100 marriage occurred

	(1)	(2)	(3)	(4)	(5)	(6)
Method	Probit	Logit	Probit	Probit	Probit	Probit
$ \ln Y^K - \ln Y^S ^+$	0.803*** (0.204) [0.08]	1.399*** (0.393) [0.010]	0.616** (0.282) [0.003]	1.486*** (0.448) [0.029]	0.569*** (0.175) [0.010]	1.011*** (0.388) [0.064]
$ \ln Y^K - \ln Y^S ^-$	1.046 (0.758) [0.011]	1.815 (1.466) [0.013]	0.875 (1.311) [0.004]	1.659 (1.086) [0.032]	-	-
ln (Trade)	0.567*** (0.142) [0.006]	1.079*** (0.292) [0.007]	0.449*** (0.147) [0.002]	0.632*** (0.231) [0.012]	0.482*** (0.129) [0.009]	0.502*** (0.188) [0.032]
ln (Distance)	-	-	-1.351*** (0.486) [-0.007]	-	-	-
Region Dummy	No	No	No	Yes	No	Yes
Mean of Dep. Var.	0.062	0.062	0.062	0.137	0.061	0.175
N	1108	1108	1108	504	876	303
PseudoR2	0.434	0.430	0.580	0.588	0.376	0.51

Note: All specifications include year dummy variables. Standard errors are reported in parenthesis. Marginal effects are reported in hard brackets.

A.2 Dependent Variable: Log number of brides, censored at log (100).

	(1)	(2)	(3)	(4)	(5)
Method	Tobit	Tobit	Tobit	Tobit	Tobit
$ \ln Y^K - \ln Y^S ^+$	6.120*** (1.282)	3.361** (1.471)	6.922*** (1.459)	4.902*** (1.335)	5.219*** (1.528)
$ \ln Y^K - \ln Y^S ^-$	7.423 (4.804)	4.266 (5.721)	7.856* (4.763)		
ln (Trade)	4.235*** (0.534)	2.251*** (0.857)	2.891*** (0.539)	4.014*** (0.544)	2.546*** (0.505)
ln (Distance)		-6.023*** (2.133)			
Region Dummy	No	No	Yes	No	Yes
N	1108	1108	1108	876	876
PseudoR2					

Note: Clustering robust standard errors are reported in parenthesis. All specifications include year dummy variables.

Panel B: Recipient Country: Japan, Sample Period: 2000-2007

B.1 Dependent Variable: =1 if more than 100 marriage occurred

	(1)	(2)	(3)	(4)
Method	Probit	Logit	Probit	Probit
$ \ln Y^J - \ln Y^{S^+} $	0.324*** (0.119) [0.002]	0.586** (0.184) [0.002]	0.313*** (0.126) [0.002]	0.549** (0.265) [0.006]
ln (Trade)	0.578** (0.184) [0.003]	1.210*** (0.415) [0.003]	0.534*** (0.174) [0.004]	0.857*** (0.275) [0.009]
ln (Distance)	-	-	-0.040 (0.508) [-0.0003]	-
Region Dummy	No	No	No	Yes
Mean of Dep. Var.	0.045	0.045	0.047	0.130
N	1077	1077	1045	377
PseudoR2	0.444	0.456	0.442	0.509

Note: All specifications include year dummy variables. In the sample years, the country that has higher GDP per capita was only Luxembourg and Norway that does not send brides to Japan. Thus we exclude the two countries and analyze only the countries that are less wealthier than Japan.

B.2 Dependent Variable: Log number of brides, censored at log (100)

	(1)	(2)	(3)
Method	Tobit	Tobit	Tobit
$ \ln Y^J - \ln Y^{S^+} $	2.125** (0.897)	1.959* (1.035)	2.645** (1.126)
ln (Trade)	4.653*** (0.903)	4.414*** (0.881)	5.319*** (1.189)
ln (Distance)	-	-0.647 (3.376)	-
Region Dummy	No	No	Yes
N	1232	1195	1232
PseudoR2	0.286	0.285	0.369

Note: All specifications include year dummy variables.

Figure 2: Major Source Countries of Foreign Brides

