



RIETI Discussion Paper Series 16-E-097

To Stay or Leave?
Migration decisions of foreign students in Japan

LIU Yang
RIETI



Research Institute of Economy, Trade & Industry, IAA

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

To Stay or Leave? Migration decisions of foreign students in Japan

LIU Yang¹

Research Institute of Economy, Trade and Industry

Abstract

This study examines the determinants of binary choice with respect to the migration decisions of foreign students in Japan (i.e., whether they choose to remain in the country following graduation). A binary choice model of qualitative choice analysis was employed based on individual-level data obtained from a survey that was distributed to seven Japanese universities. Four groups of determinants regarding migration decisions among foreign students were examined; these addressed economic factors, culture and language, motivation to study abroad, and personal characteristics. Significant effects were not identified for economic factors (i.e., income, living conditions); in contrast, culture contributed significantly to students' migration decisions. Moreover, low levels of Japanese language proficiency proved to be a barrier to retaining foreign students.

Keywords: Migration decision-making, Foreign students, Binary choice models, Income, Culture, Language

JEL classification: F22, J15

RIETI Discussion Papers Series aims at widely disseminating research results in the form of professional papers, thereby stimulating lively discussion. The views expressed in the papers are solely those of the author(s), and neither represent those of the organization to which the author(s) belong(s) nor the Research Institute of Economy, Trade and Industry.

¹ This study was part of the Research Institute of Economy, Trade, and Industry's Human Capital Program. It also benefited from the Economic Revitalization Through the Use of Highly-skilled Foreigners project conducted at the Asia Pacific Institute of Research (APIR). The author would like to thank INADA Yoshihisa, NAKAJIMA Atsushi, YANO Makoto, MORIKAWA Masayuki, KONDO Keisuke, ARATA Yoshiyuki, ZHANG Hongyong, and ITO Arata for their valuable comments, APIR for providing data, and Editage for providing English proofreading services. This work was supported by JSPS KAKENHI Grant Number JP 16K17144.

1. Introduction

The international mobility of university graduates has attracted significant attention in recent years. Many countries have benefited from an inflow of talented students and scholars, and are making great efforts to attract foreign students. [1] There have been many empirical studies regarding the migration decisions of foreign students [2–4], but few in Japan owing to data restrictions. To fill this gap, this study uses a relative survey to examine the migration decisions of foreign students in Japan based on qualitative choice models.

International students are an important human capital resource, which is key to economic growth. Some studies indicate that by remaining in a host country, international students can contribute greatly to its economy. For instance, foreign students in the Netherlands have considerable economic value, where it was estimated that public revenues would increase by €740 million if one in five foreign students remained after graduating. [5] In the United States, researchers found that 25.3% of all engineering and technology companies established between 1995 and 2005 included at least one immigrant who was a key founder; in 2005, these companies generated over \$52 billion in sales, and just under 450,000 jobs. [6] The researchers concluded that immigrants have been a driving force in creating new businesses and intellectual properties in the United States.

Foreign students who graduated from American universities are likely a key source of highly-skilled immigrants. As such, many countries are actively attempting to retain foreign students following the completion of their degrees. In most Organisation for Economic Co-operation and Development (OECD) countries, foreign students can change their student visas into work visas after graduating. For example, Canada's Post-Graduation Work Permit Program grants up to three-year work permits that are intended to provide foreign graduates with a "Canadian Experience," which in turn will prepare them for permanent residence. In Germany, students can stay for up to one year after successfully completing their degrees in order to seek work. Likewise, in Japan graduates are granted a six-month temporary visitor permit for the purpose of seeking employment. [7] In short, there are ample chances for foreign students to become highly-skilled migrants in the aforementioned countries.

Many prior studies have addressed immigration decision-making, wherein economic factors are given the greatest attention. Traditional migration theory asserts that laborers tend to move from low to high-income regions in order to maximize their expected utility. [8] This seems accurate given that developed countries are the net beneficiaries of migration, where inflows of migrants exceed outflows; Canada, Australia, France, and the United States in particular have experienced positive net inflows of tertiary-educated migrants. [1] Although over 90% of foreign students in Japan are from developing nations, most opt to return to their home countries without considering employment or an extended residence. Therefore, in this context economic factors alone cannot satisfactorily explain students' migration decisions.

This study examines economic as well as other factors related to migration decisions, with the first being culture. When compared to studying in a host country, staying and working requires more complex adaptations. In some countries, immigrants may be able to live in enclaves where individuals from similar cultural backgrounds are clustered. There are

benefits to these enclaves, as previous migrants who reside there can provide newcomers with accommodations and work, thereby reducing the stress of adjusting to a foreign culture. [9, 10] However, such opportunities are not readily afforded to foreigners in Japan, where very few immigrant enclaves exist. Thus, assimilation may be the most feasible choice for permanent immigrants in Japan. In that respect, developing an interest in Japan's culture and language can make assimilation and adaptation easier. Japanese culture, such as *manga* (Japanese comics), has attracted many young people to Japan in recent years. Foreign students with an interest in Japanese culture may be more likely to remain in the country after graduating. Accordingly, culture is an important factor in this study's analysis framework.

Presently, many Japanese universities offer English-based courses in order to acquire more foreign students and improve their internationality, whereby students can complete their studies entirely in English. Nevertheless, graduates from these institutions often discover that nearly all jobs in Japan require use of the Japanese language. Language may therefore be a major concern in the migration decision-making of foreign students.

In addition, Japan has long provided a high-quality tertiary education. There are many superb universities located in the country that are on the forefront with respect to the natural and social sciences. Japanese policies encourage foreign students to study in Japan by offering them generous support in the form of numerous kinds of scholarships, both from private and government-based entities. These opportunities undoubtedly generate interest among foreign students to study in Japan; however, whether students who come actually desire to work and reside in the country on a long-term basis remains unknown.

A binary choice model of qualitative choice analysis was employed in the present study to examine migration decisions based on individual-level data. The database used for analysis was created by compiling the results of a survey sent to seven Japanese universities. Four groups of determinants for migration decisions were examined, which included factors pertaining to economics, culture/language, motivation, and individual characteristics. Regressions were run on the determinants, and the results of both the probit and logit models were ascertained.

2. Statistics concerning foreign and highly-skilled laborers in Japan

For many years, Japan has exerted great effort in attracting international students. The 300,000 International Students Plan was initiated in 2008, which aimed to gather information concerning international students in Japan, and determine how to boost their enrollment by increasing the appeal of the country's universities. [11] As shown in Figure 1, the number of international students has increased sharply recent years. In 2015, there were over 150 million international students studying at Japanese universities and colleges. Among them, 44.4%, 27.2%, and 25.4% were graduate students, undergraduate students, or enrolled at special training colleges, respectively. Furthermore, 71% of them were social science or humanities majors; in contrast, only 11.8%, 1.3%, and 1.6% majored in engineering, science, and agriculture, respectively. [12]

Figure 1. Foreign students in Japan between 1998 and 2015 (per thousand persons).

When compared to other developed nations, the number of foreign students in Japan is relatively small. As shown in Figure 2, only 4.4% of all international students from OECD countries studied in Japan during 2010. [13] This number is much smaller if compared to English-speaking nations. For example, according to the afore-cited report, more than 10% and 20% of international students studied in the United Kingdom and United States, respectively.

Figure 2. Foreign students enrolled in tertiary education in OECD countries during 2000 and 2010.

Furthermore, as of 2015, 83.9% of foreign students in Japan were from developing nations or regions. In particular, 45.2%, 18.7%, and 7.8% were from China, Vietnam, or Nepal, respectively. This is similar to the United States, where over 60% of foreign students are from developing nations. [14] However, when compared directly to the United States, where stay rates for foreign students are between 60–70%, rates in Japan are quite low, as only one-third of the country's foreign graduates actually begin their careers there (see Table 1). Conversely, in 2011 the stay rate for foreign recipients of doctorates in America was as high as 68% and 65% for those who graduated five and ten years prior, respectively. [15]

Table 1. Percentages of foreign students whose first jobs were in Japan between 2004 and 2014 [16]

In Japan, the number of highly-skilled foreign workers is relatively small. As shown in Figure 3, only 1.1% are foreign-born, which is a low ranking when compared to other OECD countries. For instance, the percentages for Canada and the United States are 25.8% and 13.9%, respectively. Furthermore, among highly-skilled foreign workers in OECD countries, only 1.5% are working in Japan, whereas 45.2% are working in the United States (see Figure 4).

Figure 3. Percentages of highly-skilled immigrants who are tertiary-level graduates from among all highly-skilled residents in OECD countries. [17]

Figure 4. Percentages of highly-skilled immigrants who are tertiary-level graduates from among all highly-skilled immigrants in OECD countries. [17]

3. Analysis framework

According to traditional migration theory, immigrants choose destination countries wherein their expected utility, which usually entails economic factors, can be maximized. Thus, this research first considers average income levels both in Japan and students' home countries. In addition to income, living conditions are an important economic factor that reflects a person's utility, and will consequently be included in the study's estimates.

As mentioned previously, despite the fact that most foreign students in Japan come from nations in which living conditions and average incomes are lower, many opt to return to their home countries. Hence, there are other potential factors that influence their migration decisions. The first is culture, as it is a key determinant of a migrant's choice of location. [10] Since the number of foreigners in Japan is minimal, and because opportunities to live in migrant enclaves are few, it is difficult for migrants to isolate themselves from Japanese culture. This is especially true among university graduates, who tend to be highly-skilled workers residing in areas sparsely populated by migrants of a similar ethnicity. [18] Consequently, whether a foreign student chooses to embrace Japanese culture could be an influential factor in their decision to migrate.

Related to culture, language is another factor worth consideration, since essentially one language is used in Japan; conversely, English is routinely used in many other common migrant destinations. Although numerous Japanese universities have begun offering English-based courses in order to attract foreign students, high proficiency in Japanese is nonetheless generally a prerequisite to entering the local workforce.

It should be noted that, unlike migrants who move directly from their home countries to another location for work, foreign students in Japan live and study there for a considerable amount of time before deciding to migrate. Thus, one's motivations for studying abroad could affect their decision to migrate. For example, students motivated by the pursuit of an education may place greater emphasis on their university studies rather than the prospects of a career in Japan; in contrast, career-driven students may be more likely to remain in the country after graduation.

Finally, the personal characteristics of students are examined (e.g., gender, major, university). The estimation equation is as follows:

$$D_i = \alpha E_i + \beta C_i + \gamma M_i + \delta P_i + e_i$$

where i represents a given student's observations, D_i his or her intention to remain in Japan following graduation, E_i economic factors (e.g., income, living conditions), C_i factors pertaining to language/culture, M_i factors motivating study abroad, and P_i personal characteristics.

4. Description of data and its categorization

The study's database was developed using the results of a survey conducted by the Asia Pacific Institute of Research. [19] For that survey, questionnaires were distributed to foreign students at seven public and private Japanese universities. Relevant content from the questionnaire was used to create the present study's database. The data list is provided in Table 2.

Table 2. Data list

In line with the analysis framework, data were divided into a dependent variable and four groups of explanatory variables. *Migration Decision* is the dependent variable, which is a given student's intention to remain in Japan for work

after graduation (1 = yes; 0 = no). The first explanatory variable group is *Economic Factors*. *Expects Higher Wages* regards whether a student is likely to earn higher wages if he or she remains in Japan. Since this variable is an expectation, it is measured according to average wage rates in a student's home country (1 = origin is a developing country; 0 = origin is a developed country). For *Good Living Conditions in Japan*, 1 denotes that a student deems living conditions in Japan favorable, whereas 0 denotes the opposite.

Culture and Language is the second explanatory variable group. As its name implies, *Interest in Japanese Culture* concerns whether a student is interested in Japanese culture (1 = yes; 0 = no). Since direct data for each student's language proficiency is unavailable, this factor is determined according to whether an individual considers studying abroad a good opportunity to learn Japanese and/or English (1 = yes; 0 = no). If a respondent believes that studying abroad provides a good opportunity to learn Japanese, it is extremely likely that they have learned Japanese while in Japan, and by extension acquired some degree of proficiency in it; otherwise, the individual's interest in improving their Japanese is probably limited. Similarly, if a student believes that studying abroad provides a good opportunity to learn English, it is probable that they have enrolled in an English-based course, and that English is the language they primarily use in Japan.

Motivation to Study Abroad is the third explanatory variable group, which is based on responses to a multiple-choice item (1 = yes and 0 = no for all variables in this group). *Good Education* indicates whether receiving a quality education motivated a student to study abroad; *Valuable Experience* suggests whether a respondent studied abroad in order to gain worthwhile experience. *Good Support for Foreign Students* regards whether an individual was motivated by generous support provided by the host country; *Easy to Obtain a Scholarship* concerns whether one decided to study in the host country because obtaining a scholarship was easy. *Visited Country Previously* indicates whether a respondent was motivated to study in Japan because they had visited in the past. *To Study at an Affiliated Foreign University* concerns whether a student was motivated to study in Japan owing to an association between a school in their home country and one in Japan. *Failed in Going to Other Countries* indicates whether an individual was motivated to study in Japan because they could not do so elsewhere. *To Work in Japan* regards whether a student chose to study in Japan in order to procure employment there.

Personal Characteristics is the fourth explanatory variable group. *Gender* indicates whether a respondent is male or female (1 = male; 0 = female). *Major* regards whether one specialized in a natural or social science (1 = natural science; 0 = social science). *Studied at Public University* concerns whether a student attended a national, prefectural, or municipal university (1) or a private university (0). Finally, *Undergraduate* indicates whether one is an undergraduate (1) or graduate student (0).

5. Estimation results and discussion

The binary choice model of qualitative choice analysis was applied for estimation, including probit and logit models. Estimation results are presented in Table 3.

Table 3. Estimation results. Z-statistics are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

First, the results show insignificant positive estimates for economic factors, including expected income and living conditions. Even after excluding all variables for culture and motivation, as shown in Model 1, the estimates for economic factors are insignificant. Economic factors play only a minor role in migration decisions among foreign students in Japan, despite the fact that most are from countries with relatively less developed economies. For these individuals, a higher expected wage and better living conditions do not sufficiently motivate them to remain.

Second, the variable *Interest in Japanese Culture* had a very significant positive estimated coefficient. Hence, culture contributes substantially to the migration decisions of foreign students in Japan. Students interested in Japanese culture are more likely to remain in Japan after graduation. Unlike in the United States [20, 21], there are few immigrant enclaves in Japan. Immigrants in Japan must therefore adapt to Japanese culture if they wish to live there for an extended period of time. This adaptation process could be easier for students interested in Japanese culture, and consequently produce higher stay rates among them.

In addition, the results show that language is a factor in the migration decisions of foreign students in Japan. As mentioned previously, the variable *Good Opportunity to Learn English* indicates that they are likely to use English exclusively during their studies (e.g., during university courses conducted in English). Indeed, the coefficient for the aforementioned variable has a very significant negative estimate. Thus, foreign students in Japan who primarily use English tend to leave the country following graduation. There are several possible reasons for this. For instance, since English is seldom used in Japan, students interested in English may have less desire to remain there after graduating. Moreover, even though English enables these students to complete their university studies, it nevertheless may prove difficult for them to procure employment, since most positions in Japan require proficiency in Japanese. Likewise, as English-speaking enclaves are virtually non-existent in Japan, foreign graduates may experience difficulty adjusting to life in the country without mastering its native language. These negative expectations may lead to low stay rates among foreign students who primarily use English during their studies. Conversely, *Good Opportunity to Learn Japanese* had a positive, albeit insignificant estimate coefficient. Consequently, learning Japanese while attending a university increases the likelihood of foreign students to remain.

It should be noted that the native languages spoken by students from certain foreign countries/regions share a similar writing system (i.e., Chinese characters); these locations include China, Korea, Vietnam, and Taiwan. To control for this effect, dummy variables were introduced for the sample's top six countries of origin in Model 4². The results revealed that foreign students from China and Vietnam tended to remain in Japan. Further, although not significant, the coefficients for students from Korea and Taiwan were positive, whereas those from Thailand and Canada were negative (Japan, China, Vietnam, Korea, and Taiwan currently use Chinese characters; in contrast, Thailand and Canada do not).

² The variable *Expects Higher Wages* was deleted in Model 4, as data from the same countries were used, as mentioned previously.

Therefore, it is possible that students born in countries that use Chinese characters find it easier to learn Japanese, thereby leading to a higher stay rate among them.

For the third group of factors (i.e., *Motivation to Study Abroad*), *Good Education* had a significant negative estimated coefficient; *Valuable Experience* and *Easy to Obtain a Scholarship* also had negative effects. Although factors such as scholarship and a good education attract foreign students, they do not contribute to their decision to remain. Hence, foreign students with great interest in higher education tend not to consider residing in Japan after graduating. Alternatively, it could be that experiences at Japanese universities are highly valued in other countries.

The variable *To Work in Japan* was automatically omitted, since it predicted success perfectly. An examination of the variable revealed that students motivated to procure employment in Japan unanimously opt to remain. This contradicts previous studies wherein some students' expectations regarding the advantages of a foreign lifestyle proved disappointing, thus prompting them to return to their countries of origin despite their initial intention to remain. [21] Furthermore, the *Visited Country Previously* variable had a negative effect on respondents' decision to remain. This indicates that students who choose to study in Japan owing to a prior visit tend not to remain there after graduation.

Finally, among the factors for personal characteristics, male students tend to remain in Japan following graduation. Moreover, *Studied at Public University* had a quite significant negative estimate coefficient. Hence, students who study at private universities are more likely to remain. This could be because tuition fees are higher at private universities, prompting graduates from these institutions to work in Japan so as to recuperate their losses.

6. Conclusion

Academics and policymakers are placing greater focus on migration decisions among foreign students. Although the number of foreign students in Japan has increased drastically in recent years, their stay rates are low, and many leave the country soon after graduating. As such, the retention of foreign students has become an important issue for the Japanese government.

The results of this study did not reveal significant effects for economic factors (e.g., income, living conditions) on the migration decisions of foreign students; nevertheless, culture contributed notably in this respect. Having an interest in Japanese culture could have a significant positive effect on foreign students' decisions to remain in Japan. Even though improvements in international education and greater support for foreign students have contributed to increasing their presence in Japan, these improvements have a minimal effect on the stay decisions of highly-skilled foreigners. Moreover, language barriers proved to be a major obstacle to retaining foreign students.

Concerning policy implications, generating interest among foreigners in Japanese culture could entice greater numbers of highly-skilled laborers to remain. Furthermore, efforts to overcome language barriers are necessary in order to encourage highly-skilled foreigners to work in Japan; such efforts might include the strengthening of Japanese language education, or promoting the use of English in Japanese corporations.

The primary focus of this study was migration intention, which is the first step in the migration process. Future research should further examine the next step, which involves job search behaviors and labor market outcomes among foreign graduates who choose to remain in Japan.

References

- [1] Organisation for Economic Co-operation and Development. *The Global Competition for Talent: Mobility of the Highly Skilled*. Paris: Organisation for Economic Co-operation and Development; 2008.
- [2] Chen T, Su H. On-the-Job training as a cause of brain drain. *Weltwirtschaftliches Archiv*. 1995;**131(3)**:526–41. DOI: 10.1007/BF02707916
- [3] DeVoretz D, Iturralde C. Probability of staying in Canada. Vancouver Centre of Excellence. 2000. Working Paper No. 00-06.
- [4] Li FLN, Findlay AM, Jowett AJ, Skeldon R. Migrating to learn and learning to migrate: A study of the experiences and intentions of international student migrants. *International Journal of Population Geography*. 1996;**2(1)**:51–67. DOI: 10.1002/(SICI)1099-1220(199603)2:1<51::AID-IJPG17>3.0.CO;2-B
- [5] Government of Netherlands. *The Netherlands Aims to Attract More Talent from Abroad* [Internet]. 2013. Available from: <https://www.government.nl/latest/news/2013/07/16/the-netherlands-aims-to-attract-more-talent-from-abroad> [Accessed: 2016-08-1]
- [6] Wadhwa V, Saxenian A, Rissing BA, Gereffi G. *America's new immigrant entrepreneurs: Part I*. Duke Science, Technology, and Innovation. 2007. Working Paper No. 23. DOI: 10.2139/ssrn.990152
- [7] Chaloff J, Lemaitre G. *Managing highly-skilled labour migration: A comparative analysis of migration policies and challenges in OECD countries*. Organisation for Economic Co-operation and Development. 2009. Working Paper No. 79.
- [8] Todaro MP. A model of labor migration and urban unemployment in less developed countries. *The American Economic Review*. 1969;**59(1)**:138–148.
- [9] Munshi K. Networks in the modern economy: Mexican migrants in the U.S. labor market. *Quarterly Journal of Economics*. 2003;**118**:549–599.
- [10] Epstein GS, Ira NG, editors. *Migration and Culture*. Bingley: Emerald; 2010.
- [11] Ministry of Education, Culture, Sports, Science, and Technology. *Outline of the Student Exchange System: Study in Japan and Abroad* [Internet]. 2008. Available from: http://www.mext.go.jp/a_menu/koutou/ryugaku/081210/001.pdf [Accessed: 2016-08-21]
- [12] Japan Student Services Organization. *Survey Results Regarding the Enrollment Status of Foreign Students in Japan During 2015* [Internet]. 2015. Available from: http://www.jasso.go.jp/about/statistics/intl_student_e/2015/index.html [Accessed: 2016-08-11]

- [13] Organisation for Economic Co-operation and Development. Education at a Glance 2012: OECD Indicators [Internet]. 2012. Available from: https://www.oecd.org/edu/EAG%202012_e-book_EN_200912.pdf [Accessed: 2016-08-11]
- [14] Institute of International Education. International Scholars: Leading Places of Origin [Internet]. 2015. Available from: <http://www.iie.org/en/Research-and-Publications/Open-Doors/Data/International-Scholars/Leading-Places-of-Origin/2013-15> [Accessed: 2016-08-21]
- [15] Finn MG. Stay Rates of Foreign Doctorate Recipients from U.S. Universities 2011 [Internet]. 2014. Available from: <https://orise.orau.gov/files/sep/stay-rates-foreign-doctorate-recipients-2011.pdf> [Accessed: 2016-08-30]
- [16] Japan Student Services Organization. Survey on Post-graduation Careers and the Retention of Foreign Students in Japan [Internet]. 2015. Available from: http://www.jasso.go.jp/about/statistics/intl_student_d/index.html [Accessed: 2016-08-11]
- [17] Organisation for Economic Co-operation and Development. OECD Science, Technology, and Industry Outlook 2006 [Internet]. 2006. Available from: <http://www.oecd.org/sti/inno/oecdsciencetechnologyandindustryoutlook2006.htm> [Accessed: 2016-08-11]
- [18] Bartel AP. Where do the new U.S. immigrants live? *Journal of Labor Economics*. 1989;**7**(4):371–391.
- [19] Asia Pacific Institute of Research. 2012
- [20] Portes A, Manning RD. The immigrant enclave: Theory and empirical examples. In: Olzak S, Nagel J, editors. *Competitive Ethnic Relations*. Location: Publisher; 1986. p. 47–68.
- [21] Lange T. Return migration of foreign students and the choice of non-resident tuition fees. 2009. IFO Working Paper No. 74.

Figure 1. Foreign students in Japan between 1998 and 2015 (per thousand persons).

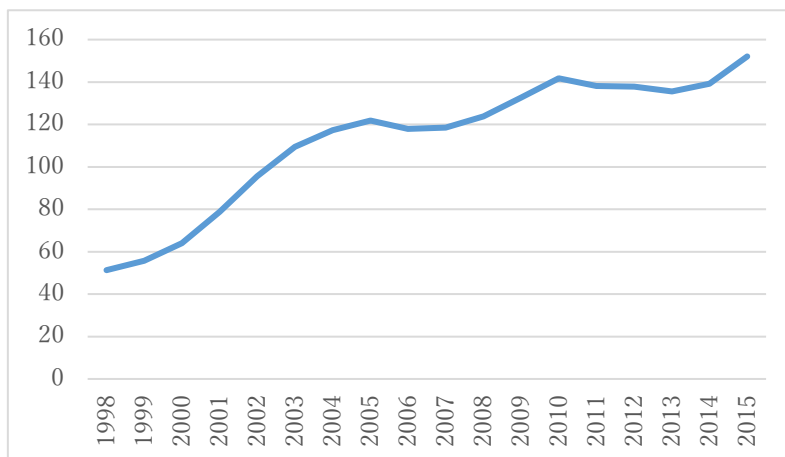


Figure 2. Foreign students enrolled in tertiary education in OECD countries during 2000 and 2010.

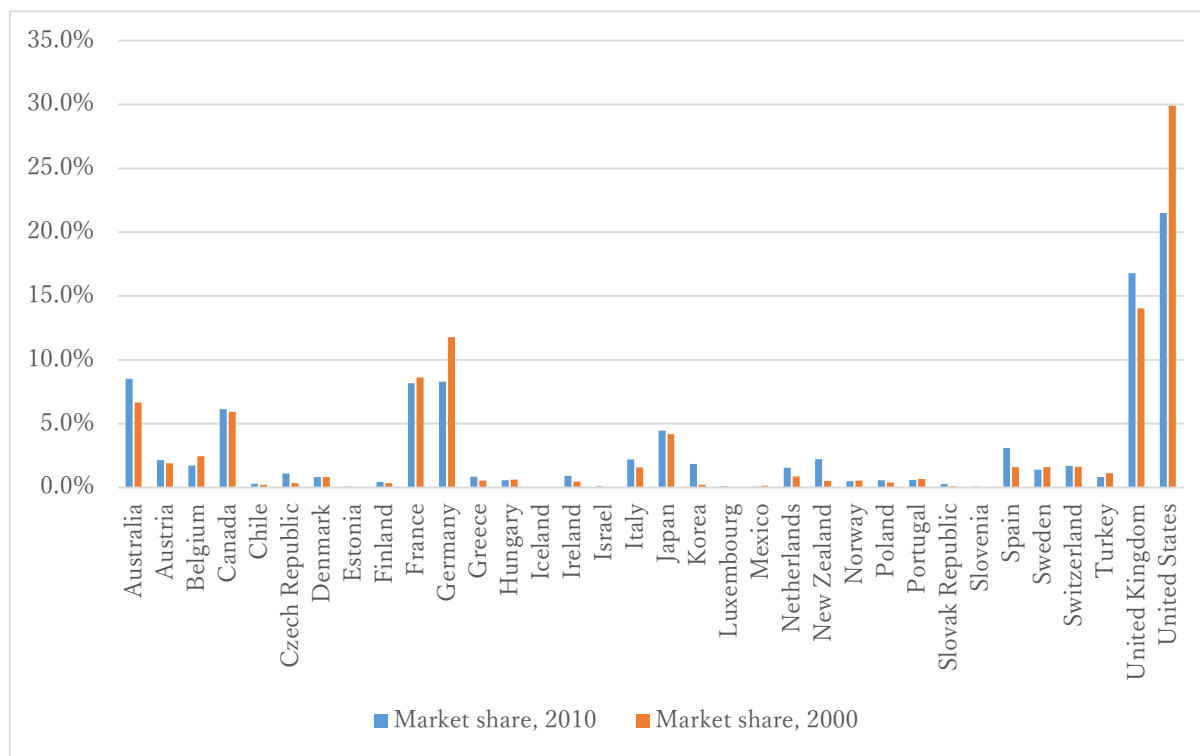


Figure 3. Percentages of highly-skilled immigrants who are tertiary-level graduates from among all highly-skilled residents in OECD countries. [17]

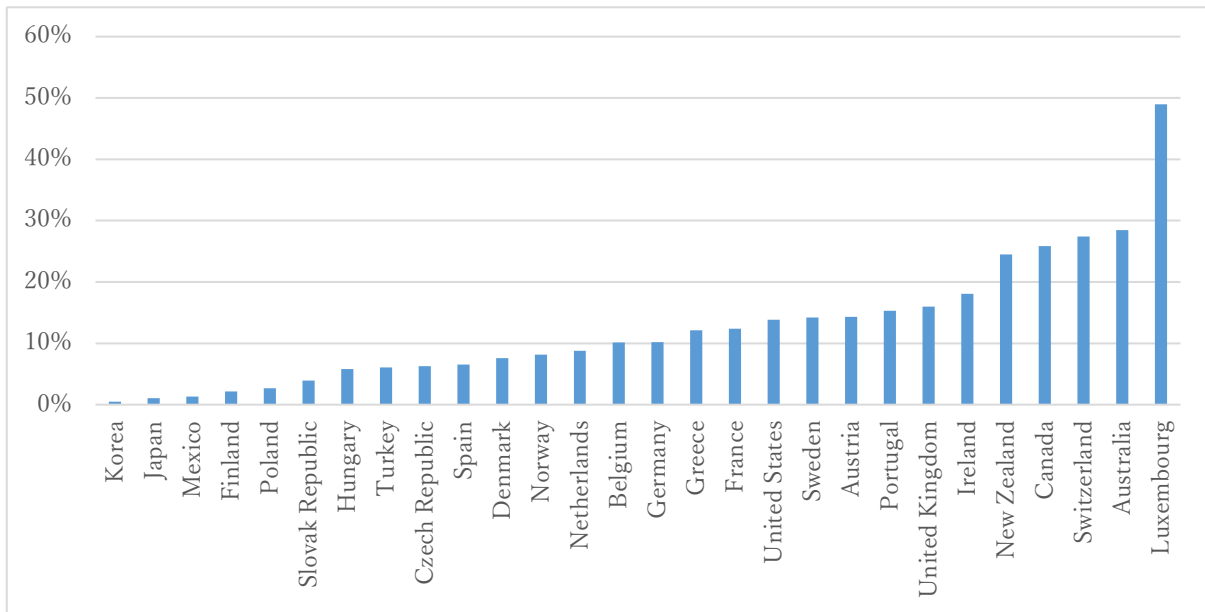


Figure 4. Percentages of highly-skilled immigrants who are tertiary-level graduates from among all highly-skilled immigrants in OECD countries. [17]

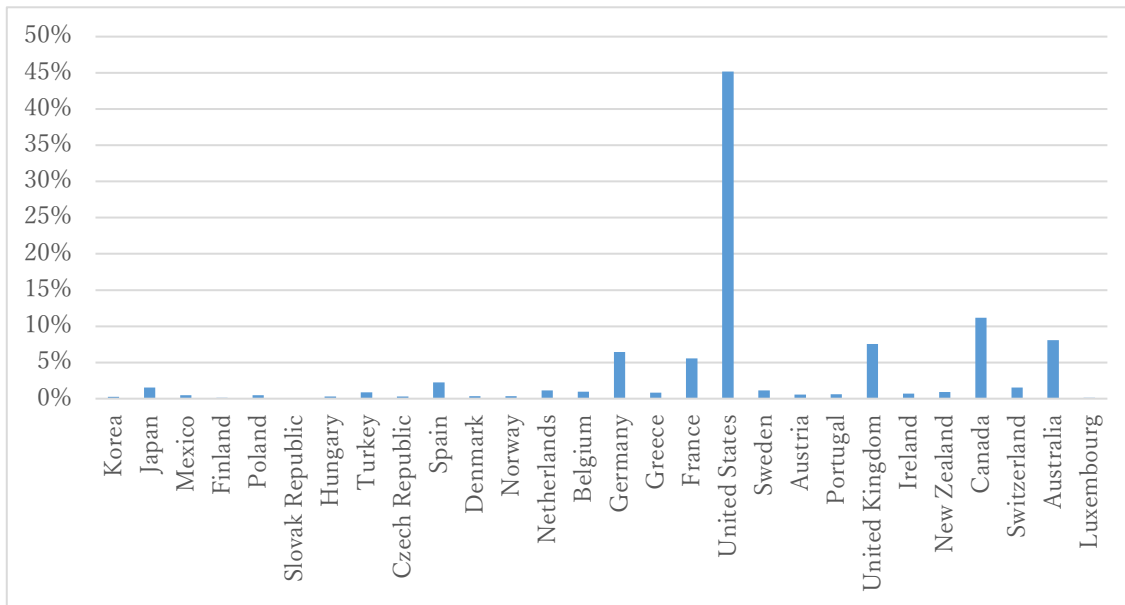


Table 1. Percentages of foreign students whose first jobs were in Japan between 2004 and 2014 [16]

	Graduate students (doctoral degree)	Graduate students (master's degree)	Undergraduates	Graduates from special training colleges
2004	31.2%	30.8%	31.0%	14.9%
2005	31.6%	33.4%	34.8%	17.4%
2006	33.1%	35.7%	38.4%	20.5%
2007	32.7%	36.2%	40.2%	21.5%
2008	28.9%	31.4%	34.9%	16.4%
2009	30.1%	23.3%	24.3%	10.3%
2010	26.0%	25.3%	24.7%	11.8%
2011	27.2%	27.9%	26.3%	15.1%
2012	17.1%	28.5%	28.6%	19.3%
2013	18.2%	28.5%	29.7%	21.4%
2014	15.8%	32.1%	34.5%	21.1%

Table 2. Data list

	Observations	<i>M</i>	<i>SD</i>	Minimum	Maximum
Migration Decision					
Intends to Remain in Japan	349	0.68	0.47	0	1
Economic Factors					
Expects Higher Wages	387	0.78	0.41	0	1
Good Living Conditions in Japan	393	0.23	0.42	0	1
Culture and Language					
Interest in Japanese Culture	393	0.26	0.44	0	1
Good Opportunity to Learn Japanese	393	0.19	0.39	0	1
Good Opportunity to Learn English	393	0.02	0.13	0	1
Motivation to Study Abroad					
Good Education	393	0.13	0.34	0	1
Valuable Experience	393	0.14	0.34	0	1
Good Support for Foreign Students	393	0.13	0.34	0	1
Easy to Obtain a Scholarship	393	0.14	0.35	0	1
Visited Country Previously	393	0.08	0.27	0	1
To Study at an Affiliated Foreign University	393	0.07	0.26	0	1
Failed in Going to Other Countries	393	0.04	0.20	0	1
To Work in Japan	393	0.13	0.34	0	1
Personal Characteristics					
Gender (male)	386	0.47	0.50	0	1
Major (natural science)	374	0.66	0.47	0	1
Studied at Public University	406	0.49	0.50	0	1
Undergraduate	379	0.63	0.48	0	1

Table 3. Estimation results

	Model 1	Model 2	Model 3	Model 4
Economic Factors				
Expects Higher Wages	0.09 [0.47]	0.08 [0.21]	0.05 [0.23]	— —
Good Living Conditions in Japan	0.27 [1.40]	0.37 [1.05]	0.19 [0.91]	0.22 [1.03]
Culture and Language				
Interest in Japanese Culture		0.91 [2.30]**	0.55 [2.37]**	0.53 [2.22]**
Good Opportunity to Learn Japanese		0.19 [0.50]	0.11 [0.47]	0.09 [0.38]
Good Opportunity to Learn English		-2.79 [-2.22]**	-1.71 [-2.27]**	-1.86 [-2.48]**
Motivation to Study Abroad				
Good Education		-1.02 [-2.43]**	-0.62 [-2.50]**	-0.66 [-2.59]**
Valuable Experience		-0.75 [-1.87]*	-0.46 [-1.90]*	-0.49 [-2.01]**
Good Support for Foreign Students		0.59 [1.19]	0.28 [1.03]	0.32 [1.15]
Easy to Obtain a Scholarship		-0.95 [-2.33]**	-0.57 [-2.32]**	-0.62 [-2.45]**
Visited Country Previously		-1.04 [-2.05]**	-0.63 [-2.05]**	-0.60 [-1.93]*
To Study at an Affiliated Foreign University		0.67 [1.22]	0.42 [1.28]	0.45 [1.36]
Failed in Going to Other Countries		-0.79 [-1.24]	-0.47 [-1.20]	-0.47 [-1.18]
To Work in Japan	— —	— —	— —	— —
Personal Characteristics				
Gender (male)	0.27	0.47	0.29	0.34

	[1.69]*	[1.59]	[1.66]*	[1.92]*
Major (natural science)	0.21	0.29	0.17	0.08
	[1.14]	[0.82]	[0.81]	[0.38]
Studied at Public University	-0.59	-1.10	-0.65	-0.63
	[-3.10]***	[-2.90]***	[-2.93]***	[-2.72]***
Undergraduate	-0.26	-0.55	-0.34	-0.34
	[-1.30]	[-1.39]	[-1.51]	[-1.42]
Country dummies				
China				0.43
				[1.67]*
Korea				0.19
				[0.58]
Taiwan				0.02
				[0.04]
Vietnam				0.92
				[1.93]*
Thailand				-0.25
				[-0.45]
Canada				-0.19
				[-0.18]
Estimation	Probit	Logit	Probit	Probit
Log-likelihood				
<i>n</i>	303	303	303	303

Z-statistics are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$