The impact of migration on tourism demand: evidence from Japan

Etzo, Ivan

University of Cagliari (Italy), CAPS - Seikei University (Tokyo)

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Ivan Etzo[†]

[†]*Department of Economics and Business, University of Cagliari, Cagliari*

Email: ietzo@unica.it

Abstract

This paper investigates the impact of migration on both inbound and outbound Japanese tourism flows during the period 2000-2013. The results reveal that the stock of immigrants in Japan represents an important determinant of inbound tourism flows. The effect remains positive and statistically significant after disaggregating the flows by purpose of visit, though the impact is higher for "holiday" than for "business" arrivals. The number of Japanese residing abroad does not affect the inbound tourist arrivals. On the contrary, they exert a noticeable effect on outbound tourism flows, whilst immigrants in Japan seem not to have a significant effect.

Keywords: outbound tourism, inbound tourism, migration, Japan

JEL classification: Z30; F22

1. Introduction

According to the World Travel & Tourism Council (WTTC) the total contribution (i.e., direct and indirect) of Travel & Tourism to Japan's GDP was JPY33,160.6bn (6.9% of GDP) in 2013, and the total contribution to employment, including jobs indirectly supported by the industry, was 7.1% of total employment (4,497,000 jobs). The Japanese government has identified in Tourism one of the main pillars of the growth strategy. In June 2013, in fact, the Action Program for Making Japan a Tourism Nation was compiled by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), as reported by the Japan Tourism Agency (JTA) in the White Paper on Tourism in Japan (2013). One of the main measures outlined in the aforementioned Program, which are aimed at boosting tourism arrivals in Japans, is to make immigration procedures faster and smoother.

The nexus between migration and tourism is well known, but it is usually identified and restricted to the Visiting Friends and Relatives component (VFR), that is people travelling in order to visit their friends and relative that had previously migrated in a foreign country (Feng & Page, 2000; Williams & Hall, 2002; Boyne, Carswell, & Hall, 2002; King, 1994). Recent research, however, has provided empirical evidence on the existence of a wider impact of migration on tourism which involves also the other components of tourism demand (e.g., holiday and business). These studies postulate that the presence and growth of immigrants' communities might have a noticeable (positive) effect on tourism flows through several channels (Dwyer, Forsyth, King, & Seetaram, 2010). The main channel linking migration and tourism is certainly the VFR, but tourists that have travelled to visit their friends and relatives once back to their country are likely to report their travel experience to other friends and this will probably affect their future destination trips, which will be for holiday purpose. Similarly, immigrants travelling back to their home country might promote the host country and foster further holiday trips. An increase of tourism flows triggered by the presence of immigrants is also perceived as permanent by the tourism market agents and policy makers. As a consequence, it is likely that there will be an increase in the supply of both tourism services (e.g. accommodations, restaurants) and tourism infrastructures (e.g. transportations), which rise the destination competitiveness. Furthermore, it is known that immigration enriches the cultural life of the host country and provides a wider array of consumption possibilities, like for example ethnic restaurants and cultural events related to the immigrants communities, which in turn makes the destination more attractive for the overall types of tourist. In addition, immigrants who are entrepreneurs in the host country often take advantage of their contacts and business related knowledge in the country of origin to do business and consequently stimulate business trips between the two countries (Cf., inter al., Seetaram, 2012a). Obviously, for similar reasons, national people residing abroad can stimulate outbound tourism at destination.

Accordingly migration might exert a two-fold impact on tourism. Firstly, with respect to country i, inbound flows might be pulled by immigrants living in country i and pushed by country i-citizens residing abroad. Secondly, outbound flows are pushed by immigrants residing in country i and pulled by country i-citizens residing abroad (cf. Etzo, Massidda & Piras, 2015, for a comprehensive discussion on this point).

While, the recent empirical literature shows that the impact of migration on tourism demand goes beyond the VFR segment, the empirical evidence is still scant and do not cover all the main destinations of international tourism. At this regard, to the author's knowledge, no evidence has

been provided yet for any tourism destinations in Asia and the Pacific. The present study aims to contribute to the literature on the tourism migration nexus by adding new empirical evidence for Japan, which represents one of the main Asian destinations.

The paper is organized as follows. Section 2 reviews some empirical studies which provide evidence on the impact of migration on tourism flows for the main destinations of international tourism. The pattern and trends of both tourism and migration in Japan are presented in Section 3. The methodology and the data used for the empirical analysis are presented in Section 4. Section 5 is devoted to the discussion of the empirical results. Section 6 concludes the paper.

2. The tourism migration nexus: a review of the empirical literature

During the last decade a growing number of studies contributed to the emerging empirical literature on the impact of immigration on tourism demand. The latter is usually measured in terms of the number arrivals (for inbound tourism), the number of departure (for outbound tourism), the number of nights and total expenditure. Some studies use only aggregated data, while others take advantage of data disaggregated by purpose of visit in order to estimate the effect of migration on the different tourism demand segments. As for the migration variable, it is usually measured in terms of stock, that is either as the number of foreign citizens living in the destination country or the number of national people residing abroad. The studies reviewed in this section focus on the main international tourism destinations. Two studies provide evidence in support of the tourism migration nexus for total inbound arrivals in Australia. The first study by Seetaram & Dwyer (2009) shows that immigration is one of the main determinants of total inbound arrivals from the main markets of origin. Seetaram (2012a) estimates both the short run and long-run immigration elasticities using data from 1980 to 2008 for the 15 main markets of Australia. Seetaram (2012b) finds that the number of Australian residents born overseas have a positive (i.e. pushing) effect on tourism departures to 47 destinations for the period 1991–2008. Tadesse & White (2012) find that immigrants affect positively the total number of arrivals in U.S. from 86 countries during the years 1995–2004. Further empirical evidence in support of the pulling effect of migration on inbound tourism flows using aggregated data is provided by Leitão & Shahbaz (2012) for Portugal. Genç (2013) estimate a gravity model-type for New Zeeland and finds a positive effect of both immigrants and New Zeeland-born alternatively on arrivals and departures of holiday tourists during the period 1981-2006. Studies focusing on other destinations also use data disaggregated by purpose of visit. Prescott Wilton, Dadayli & Dickson (2005) find that foreign-born people living in Canada exerted a positive effect on the inbound tourism flows from 22 OECD countries over the period 1990-1996, measured both in terms of arrivals and person-nights. The data are disaggregated by purpose of visits, namely vacation, work and education. The effect of immigrants is higher for the purpose of visit "vacation" than for the one of "VFR". Gheasi, Nijkamp & Rietveld (2011) investigate the pulling effect of migration on both inbound and outbound tourism flows between the United Kingdom and a panel of OECD countries. They use data on total tourist flows and VFR and find that a positive relation between the stock of migrants and tourism flows for both the inbound and outbound case. Finally, two studies provide evidence in support of the tourism migration nexus for Italy. Massidda, Etzo & Piras (2015) estimate a dynamic panel data model and find that both the pulling and pushing effects of migration are important determinants for inbound tourism flows

measured using data on arrivals, nights and expenditure disaggregated by purpose of visit, namely VFR, holiday and business. Etzo, Massidda & Piras (2014) estimate a dynamic panel data model for outbound tourism departures disaggregated by purpose of visit. Their results show that that while the stock of Italians residing abroad has a positive impact on outbound tourism for all purposes, the stock of foreign-born citizens residing in Italy appears to push Italian outbound tourism for business purposes, for visiting friends and relatives, but not for holiday trips.

Overall, the recent empirical literature shows that the impact of migration on tourism demand is much higher than commonly thought, in that it goes beyond the VFR segment. However, to the author's knowledge, no evidence has been provided yet for any tourism destinations in Asia and the Pacific.

3. Migration and tourism flows data for Japan

3.1 Inbound tourism

Tourism arrivals in Japan grew substantially from 2000 onward. According to the Japan National Tourist Organization (JNTO), the number of foreign visitors to Japan was 4.7 million in 2000, while in 2014 the number rose above 13 millions that is an increase of more than two and half time in fifteen years. As can be seen from Figure 1 the positive trend that characterized the past fifteen years was interrupted two times: the first time in 2009 as a result of the world-wide crisis and second one in 2011 as a consequence of the tsunami and earthquake that hit the North eastern part of Japan. The Figure 1 also shows the fast recovery in the number of tourism arrivals in Japan which not only reached the pre-2011 levels but continued to grow at increasing rates.

As for the composition of tourism arrivals by purpose of visit, Figure 1 shows the two main components, that is "holiday" and "business" which represent the 68% and the 20% of total arrivals respectively[1]. Looking at the dynamic of the two components it emerges that the trend for "business" tourism arrivals is flatter than the one for "holiday". In general, it seems that the business travels respond more to the business cycles than to the standard tourism demand determinants. In fact, while there is a noticeable gap in the negative growth rates in 2011, which is -36% for "holiday" and -10.8% "for business", the difference is much less in 2009, when "holiday" arrivals decreased by -21.3% and "business" arrivals decreased by -18% [2].

[Figure 1 about here]

The top fifteen countries of origin by purpose of visit are shown in Table 1, the reported values refer to the annual average tourism arrivals for the period 2000-2014[3]. Altogether, the countries represent more than the 90% of the average total tourism arrivals for the period 2000-2014. The main sending countries when considering both total tourism and "holiday" arrivals are the Republic of Korea, Taiwan and China, which are also the closest countries to Japan with respect to the geographical distance. However, the positive correlation between the geographical proximity and tourism arrivals is strong for the "holiday" components but not for the "business" one. Accordingly,

[1] The percentages refer to the year averages during the period 2000-2014.
[2] Own calculation based on data from Japan National Tourist Organization (JNTO).
[3] Hong Kong and Taiwan are excluded from the empirical analysis because no migration data is available for these countries for the time span considered in the empirical investigation (i.e., 2000-2013).

the United States gain two positions, becoming the second main country of origin with respect to "business" arrivals.

[Table 1 about here]

3.2 Immigrants in Japan and Japanese residing abroad

As reported by the Statistics Bureau, the number of registered foreign nationals residing in Japan has nearly doubled in the past 20 years, reaching 2.07 million at end of 2013 (i.e. 1.9% of total Japanese population). The fast growth in the number of foreign citizens which characterized the 2000 in Japan was stopped by the global financial crisis. As a result the foreign population decreased in Japan during the period 2009-2012, but started to increase again in 2013 as it is shown in Figure 2. The main sending country is China, followed by Korea, Brazil, the Philippines, Peru and the United States (Table 2). Eleven out of the top fifteen sending countries reported in Table 2 are ranked also among the top fifteen origin countries of inbound tourism reported in Table 1. The positive correlation between the origin countries of both immigrants and tourists in Japan is shown in Figure 3 (a), where the square pointers in the top graph represent the combination of the two ranks for each country, that is the rank as sending country for the number of immigrants (X axes) and for tourist arrivals (Y axes). In the same graph, the dotted line shows a positive correlation also between the top fifteen sending countries for inbound tourism and the top fifteen hosting countries of Japanese residing abroad, which are represented by the triangle pointers. As for the community of Japanese residing abroad, the Figure 2 shows that they are characterized by a persistent positive trend throughout the period 2000-2013. Interestingly, as it appears from Table 2, there is a clear positive correlation also between the main sending countries for immigrants in Japan and the main destination countries for Japanese residing abroad. This positive correlation is not common among the other developed countries, where the majority of immigrants usually come from less developed countries and natives mostly prefer countries which are at least as developed as their origin country.

[Table 2 about here]

[Figure 2 about here]

[Figure 3 about here]

3.3. Outbound tourism

The Asia-Pacific region is not only a major tourism destination region but also a growing source of outbound tourism departures. Japan is among the three largest sources of outbound tourism departures together with China and Hong-Kong. In Japan, the outbound tourism departures are more than double the inbound arrivals, with an average annual departures of 16.7 million during the period 200-2014 against 7.3 million of inbound arrivals. The top fifteen destination countries and the respective shares are shown in Table 3. Almost 19% of Japanese travel to the United States, which together with China represents the main destination countries throughout the period 2000-2014. Overall, the top three destinations, that is Japan, China and Korea together represent roughly half of total outbound tourism. Notwithstanding the evident polarization of the destinations for

Japanese travelers, the bottom graph in Figure 3 shows that also the top fifteen outbound destinations are positively correlated with both the main immigrant sending countries (square indicator) and the main host countries for Japanese residing abroad (triangle indicator).

[Table 3 about here]

[Figure 3 about here]

4. Empirical models and variables

The previous section seems to suggest that the tourism migration nexus might play an important role in explaining the international tourism demand both to and from Japan. In order to assess the impact of migration on both inbound and outbound Japanese tourism, two distinct demand models will be specified.

4.1. Inbound tourism demand: data and model.

The econometric model for inbound tourism demand is specified as follows:

$$Y_{i,t,m} = \beta_0 + \beta_1 IMM_{i,t} + \beta_2 JAP_{i,t} + \beta_3 GDP_{i,t} + \beta_4 RER_{i,t} + \gamma_t + \mu_i + \varepsilon_{i,t} \quad (1)$$

where all variables are in logarithmic form, thus the estimated coefficients can be interpreted in terms of elasticities. The subscript i=1, 2, … 34 denotes the countries of origin and the subscript t=1, 2, …, 14 refers to the time period, that is from 2000 to 2013. The dependent variable, $Y_{i,t,m}$, measures the tourist arrivals by purpose of visit *m*, namely "total", "holiday" and "business". The first variable of interest for the present analysis is $IMM_{i,t}$, which indicates the number of foreign citizens residing in Japan. The second one is the regressor $JAP_{i,t,}$ which measures the number of Japanese residing abroad. The main economic predictors of tourism demand are assumed to be the income of the tourist generating country and the relative price. The income level of inbound tourists ($GDP_{i,t}$) is measured by the GDP per capita based on purchasing power parity (PPP), it is expected to exert a positive effect on the number of arrivals in Japan. The effect of changes in relative price is measured by the real exchange rate ($RER_{i,t}$) computed as follows:

$$RER_{i,t} = \frac{CPI_{i,t}}{CPI_{JPN,t}} \times EXRATE_{JPN,t} \quad (2)$$

In eq. (2) $CPI_{JPN,t}$ is the Japanese consumer price index, $CPI_{i,t}$ is the consumer price index in the source country *i* and $EXRATE_{JPN,t}$ is the nominal exchange rate between Japan and the source country *i* expressed in terms of the local currency against the Yen. An increase (decrease) of $RER_{i,t}$, either because of lower inflation or Yen depreciation, is expected to exert a positive (negative) influence on inbound tourism demand. Year dummies have been included in order to control for temporal shocks in international tourism demand common to all countries (γ_t), such as the reduction of tourism arrivals during the global financial crisis or the one that occurred in 2011 because of the

tsunami and earthquake. Unobservable country-specific effects and the effect of time invariant variables (e.g. distance, number of international airports) are captured by the term μ_i, while ε_{it} is the error term.

4.2. Outbound tourism demand: data and model.

As it will be explained in the next subsection the data on Japanese outbound tourism market by destination country suffer from two drawbacks. The first is that data disaggregated by purpose of visit are not available, thus only the determinants of the total flows can be investigated. The second drawback is that the number of countries for which both data on migration and outbound flows are available are less than those considered for the inbound tourism analysis, that is 25. As for the empirical analysis, the econometric model specified for the outbound tourism demand is the following:

$$Y_{i,t} = \beta_0 + \beta_1 IMM_{i,t} + \beta_2 JAP_{i,t} + \beta_3 GDP_{i,t} + \beta_4 P_{i,t} + \gamma_t + \mu_i + \varepsilon_{i,t} \quad (3)$$

where all variables are in logarithmic form, thus the estimated coefficients can be interpreted in terms of elasticities. The subscript i=1, 2, … 25 denotes the destination countries for Japanese outbound tourists and the subscript t=1, 2, …, 14 refers to the time period, that is from 2000 to 2013. The dependent variable, $Y_{i,t}$, indicates the number of Japanese tourists arrivals at destination *i*. The two variables of interest, that is $IMM_{i,t}$ and $JAP_{i,t}$ are the same used in equation (2). While, the effect of Japanese income changes is captured by the inclusion of year dummies, the real GDP per capita in the destination country ($GDP_{i,t}$) is included to capture the overall level and quality of both services and infrastructures in the destination country. In fact, both the availability of services and their efficiency are usually higher in the developed than in the less developed countries, and these differences are likely to affect the destination competitiveness. Differences in price level between the different destinations and Japan are captured by the variable $P_{i,t}$, which replaces the real exchange rate (RER*i,t*) in equation (2). The latter, in fact, has the main disadvantage of capturing only changes in price levels, but not the price level itself (Forsyth & Dwyer, 2009), thus it is not appropriate to capture price competitiveness between destinations. In order to accomplish this goal, we make use of a price competitiveness index, $P_{i,t}^{PPP}$, computed as the ratio of purchasing power parity conversion factor to official exchange rate, which is equivalent to GDP per capita in current US$, $GDP_{i,t}$, divided by GDP per capita in PPP US$, $GDP_{i,t}^{PPP}$. Moreover, in order to allow for the comparison between the destination countries and Japan, the price competitiveness index of each destination country is divided by the corresponding price competitiveness index for Japan, $P_{JPN,t}^{PPP}$. Therefore, the relative price competitive index has been constructed as follows:

$$P_{i,t} = \frac{P_{i,t}^{PPP}}{P_{JPN,t}^{PPP}} = \frac{GDP_{i,t}/GDP_{i,t}^{PPP}}{GDP_{JPN,t}/GDP_{JPN,t}^{PPP}} \quad (4)$$

A value of $P_{i,t}$ lower (higher) than one for country *i* indicates that the destination *i* is cheaper (more expensive) than Japan. At the same time, for country *i* the lower the index, the higher the competitiveness with respect to substitute destinations. Thus, the estimated coefficient for this variable is expected to have a negative sign.

4.3 Data sources and descriptive statistics

The data on tourist arrivals by country of origin and purpose of visit are collected by the Japan National Tourist Organization (JNTO), but are made available for public download by the JTB Tourism Research & Consulting Co.. The data on the number of foreign citizens residing in Japan are provided by the Immigration Bureau, Ministry of Justice. While, the number of Japanese residing abroad are made available by the Ministry of Foreign Affairs in Japan. The data on real GDP per capita (constant 2005 US$) and all data used to construct both the real exchange rate (i.e. the variable $RER_{i,t}$, equation (2)) and the price competitiveness index (i.e. the variable $P_{i,t}$, equation (4)) have been retrieved from the World Development Indicator database (World Bank, 2016). The data on Japanese outbound tourism market by destination country are collected by the JTB Tourism Research & Consulting Co. from different sources. In fact, while data on total flows refer to the number of departures from Japan and are provided by the Japan National Tourist Organization, the data by destination country refers to arrivals in the destination country and are collected by the respective national tourism agencies in the destination country. We consider only countries for which data on arrivals are available[4], which makes the number of countries less than those used for the inbound tourism analysis, that is 25 countries. Another drawback of these data is that they are not disaggregated by purpose of visit. The main descriptive statistics of the variables used in the empirical analysis are reported in Table A1.

5. Results

5.1.1 Inbound tourism

The equation (1) is estimated by means of the within-group estimator for panel data with standard errors clustered by country to allow for residuals to be correlated within each country. As it emerges from the results shown in Table 4, the stock of immigrants in Japan has a positive and statistically significant coefficient when considering the total arrivals (column (1)), while the estimated coefficients for the other regressors are not statistically significant. The results change after the model is estimated considering the arrivals by the two main purposes of visit separately, that is "holiday" and "business". As for the "holiday" component of the demand for inbound tourism, the impact of immigrants is positive and statistically significant and the effect of GDP per capita is also positive and statistically significant. Interestingly, immigrants exert a positive (i.e. pulling) effect also on the number of "business" arrivals, though the impact is less than the one estimated for "holiday" arrivals. An outcome common to all the three models is that the stock of Japanese residing in the source countries (of inbound tourists) does not exert any pushing effect on inbound tourism arrivals in Japan. However, this result might be due to the high correlation existing between the two migration variables, that is $IMM_{i,t}$ and $JAP_{i,t}$ [5]. In order to control for the possibility that the estimated coefficients for the migration variables might be affected by the high correlation existing between the two variables, the three models are re-estimated twice excluding each time either $IMM_{i,t}$ or $JAP_{i,t}$, the results are shown in Table 5. The first three columns in Table 5 report the

[4] For some country only data on the number of arrivals in hotels or nights spent in hotels are available.

[5] The correlation coefficient is equal to 0.7 and it is statistically significant at five percentage point. See the table A.2 for the pair-wise correlation coefficients.

estimation outcome of equation (1) without the variable $JAP_{i,t}$[6]. The estimated coefficients for the stock of immigrants residing in Japan are very similar to those reported in Table 4 and are highly statistically significant in all the three models, that is "total", "holiday" and business". Regarding the control variables, for the "holiday" component now the estimated coefficient for the real exchange rate ($RER_{i,t}$) is statistically significant with the expected (i.e. positive) sign, while the outcomes for the GDP per capita are unchanged. The columns from (4) to (5) report the estimation results of equation (1) without $IMM_{i,t}$. The estimated coefficients for the variable $JAP_{i,t}$, are never statically significant, thus it is confirmed that the stock of Japanese residing abroad do not exert the expected pushing effect on inbound tourism arrivals in Japan.

[Table 4 about here]

[Table 5 about here]

5.1.2. Inbound tourism and immigrants: the dynamic model

The model presented in equation (1) can be extended in order to control for the possibility that part of the actual tourism flows might be explained by the level of the previous tourism flows. This can happen as a result of both the "word of mouth" and the "habit persistence" effect. These effects can be easily modeled by including the lagged dependent variable in equation (1), which now turns into a dynamic panel data model. This step serves also as a robustness check, in that it avoids a possible overestimation of the effect exerted by the other regressors (Morley, 1998; Garín-Muños, 2006). As for the estimator to be utilized, the past realization of the dependent variable and the error term are correlated, thus the within-group estimator cannot be employed because it would deliver inconsistent estimates (Hsiao, 2003). A valid alternative, which is widely used to estimate the dynamic panel data models is the one step system GMM estimator (Arellano & Bover, 1995; Blundell & Bond, 1998). This estimation technique, besides correcting for the dynamic endogeneity caused by the presence of the lagged dependent variable, it also accommodates situations with fixed effects and autocorrelation between individuals and it is particularly suitable for estimating panel data models with large units observed over a short-time periods (Roodman, 2009). Moreover, this estimator allows the inclusion of time invariant variables, whose effect can be explicitly estimated. Therefore, the set of control variables can also be enriched by including the variable $DIST_i$, which measures the aerial kilometric distance between the most important city of the source country and Tokyo (data are taken from Mayer and Zignago, 2011). This variable is commonly used in tourism demand model not only as a proxy for transportation costs, but also to capture the effects of other factors, such as the preferences for cultural diversity and long distance trip aversion, which might influence the destination choice (McKercher, Chan, & Lam, 2008). Accordingly, the following dynamic panel data model is estimated:

$$Y_{i,t,m} = \beta_0 + \beta_1 Y_{i,t-1,m} + \beta_2 IMM_{i,t} + \beta_3 JAP_{i,t} + \beta_4 GDP_{i,t} + \beta_5 RER_{i,t} + \beta_6 DIST_i +$$

[6] The difference in the number of observations is due to the fact that no data on the number of Japanese residing abroad is available for Hong Kong.

$$+ \gamma_t + \mu_i + \varepsilon_{i,t} \quad (5)$$

where all variables, including the lagged dependent variable ($Y_{i,t-1,m}$) and the distance ($DIST_i$), are in logarithmic form. The results are shown in Table 6. The serial correlation tests (Arellano & Bond, 1991), reported in the second part of the table, show that the residuals in first differences are autocorrelated of order 1 for all the three models. Furthermore, while there is no second order autocorrelation when considering both "total" and "holiday" arrivals, for "business" arrivals the serial correlation disappears only at the third level. Therefore, consistent estimates are obtained by using subsequent lags of the dependent variable for "total" and "holiday", whilst the third lag is used as first instrument for "business". Overall, the results show that the impact of immigrants is still positive and statistically significant for all the three models, even after controlling for the "chain effect". The latter is confirmed by the positive sign of the estimated coefficients for the lagged dependent variables, which are all statistically significant.

[Table 6 about here]

5.2. Outbound tourism

The results from the estimation of equation (3) by means of the within-group (fixed effect) estimator are shown in Table 7. The first model has been estimated by including both the stock of immigrants residing in Japan ($IMM_{i,t}$) and the stock of Japanese residing abroad ($JAP_{i,t}$). The outcomes (column 1) reveal a statistically significant coefficient only for the stock of Japanese residing abroad. Thus, contrary to what has been found for the inbound tourism flows, the Japanese residing in the foreign countries, which now represent the destinations of the Japanese outbound tourism, exert a significant pulling effect. As for the other control variables, both the coefficients estimated for the GPP per capita ($GDP_{i,t}$) and the relative price competitive index ($P_{i,t}$) are statistically significant with the expected sign. The high correlation between the two variables of interest, that is $IMM_{i,t}$ and $JAP_{i,t}$, might also have affected the results in model 1[7]. Thus, in order to check for the robustness of these estimates, the equation (3) has been re-estimated twice by excluding alternatively $IMM_{i,t}$ or $JAP_{i,t}$. When the effect of the immigrants' stock in Japan is estimated excluding the stock of Japanese residing abroad, the coefficient estimated for the former is larger than the one estimated in Model 1 and it is now statistically significant, though only at ten percentage points (column 2). Similarly, the coefficient estimated for the stock of Japanese residing abroad, when excluding the variable $IMM_{i,t}$, is higher than the one estimated in Model 1. Overall, thus, in contrast to what has been found for the inbound tourism, the Japanese outbound tourism flows seems to respond strongly to the pulling effect of the stock of Japanese residing in the destination countries.

[Table 7 about here]

[7] See the table A.3 for the pair-wise correlation coefficients.

6. Conclusion

During the last two decades, both inbound and outbound tourism experienced high and persistent growth rates in Japan. As a consequence, the Travel & Tourism sector has been increasing its contribution to the Japanese economy, gaining in this way increasing attention from policy makers. In 2013, in order to favor the contribution of tourism to the Japanese economy growth, the Ministry of Land, Infrastructure, Transport and Tourism compiled the Action Program for Making Japan a Tourism Nation. At the same time the number of registered foreign nationals residing in Japan has nearly doubled in the past 20 years. Japan is facing the risks related to the aging and shrinking population, and the promotion of policy measures to accept more immigrants is at the center of the debate as a possible solution to the problem. Immigration is a controversial phenomenon which is of considerable interest to both researchers and policymakers. The impact of immigration on the destination economy has been largely studied, but the vast majority of both theoretical and empirical literature focuses on the labor market effects. Only recently researchers have begun to investigate also the effects of immigration on other markets. This paper explores the role of migrants in promoting both inbound and outbound tourism in Japan.

Both the pulling effect of immigrants and the pushing effect of Japanese residing abroad on inbound tourism are investigated using data on the number of arrivals in Japan from 33 sending countries, disaggregated by purpose of visit. The results from the within-group estimator reveal that the stock of immigrants is one of the main determinants of total tourist arrivals. The same outcome is confirmed after disaggregating the arrivals by purpose of visit, with the additional outcome that the estimated effect is stronger for "holiday" arrivals than for "business" arrivals. The same results are obtained also when the dynamic panel data model is estimated instead of the static one, that is after controlling for the "chain effect" of tourism arrivals. On the contrary, no statistically significant effect is estimated for the stock of Japanese residing in the source countries of tourists, which is usually expected to exert a pushing effect.

As for the determinants of the outbound tourism demand, though the available data present some drawbacks, some results are worth noting. Contrary to what has been found for the inbound analysis, in fact, the stock of Japanese residing in the tourist destination countries of outbound tourism flows seem to exert a noticeable pulling effect. Interestingly, immigrants residing in Japan seem not to succeed in promoting their origin country, for no robust effect on the outbound flows of Japanese tourists has been found.

Overall the empirical findings are of general relevance not only for researchers but also for policy makers because deliver important policy implications. It emerges in fact that an increase of immigration in Japan is likely to boost inbound tourism arrivals and, as a consequence, to rise the positive (direct and indirect) economic effects related to the tourism sector. At this regard, detailed population-representative data on tourism expenditure, that is by country of origin and purpose of visit, are needed in order for future research to be able to estimate the effect of migration on tourism expenditure as well.

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Tables and Figures

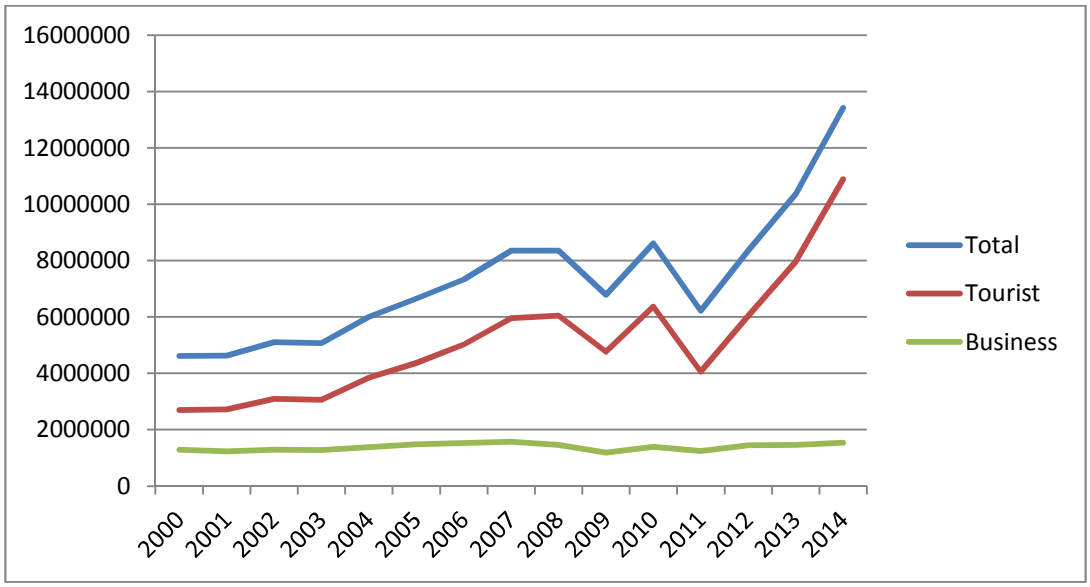

Figure 1. Inbound tourism arrivals in Japan

Table 1. Main countries of origin for inbound tourism arrivals (Yearly average, period: 2000-2014).

Rank	Countries	Total	Holiday	Business	Other
1	Korea	1868530	1394732	345738	128060
2	Taiwan	1305703	1185607	90413	29683
3	China	936217	463092	174070	299054
4	United States	745945	447325	234642	63978
5	Hong Kong	430347	397281	28710	4356
6	Australia	203183	156576	31830	14778
7	United Kingdom	198958	113670	63980	21309
8	Thailand	192306	147556	29075	15674
9	Canada	144301	108111	22528	13661
10	Singapore	123184	93170	25761	4252
11	France	119696	68643	37975	13078
12	Germany	109451	47234	53141	9077
13	Philippines	107967	45402	15432	47133
14	Malaysia	106438	74516	25118	6804
15	Indonesia	70614	43438	12371	14805

Source: own computation based on data from Japan National Tourist Organization (JNTO).

Table 2. Immigrants and Japanese residing abroad, main origin and destination countries (Yearly average, period: 2000-2013).

Rank	Country	Immigrants	Rank	Country	Japanese residing abroad
1	China	509970	1	United States	302771
2	Korea	445564	2	Brazil	64337
3	Brazil	216852	3	China	63361
4	Philippines	175590	4	Australia	60005
5	United States	41494	5	United Kingdom	58308
6	Thailand	35862	6	Canada	47125
7	Vietnam	31237	7	Thailand	39414
8	Indonesia	22653	8	Germany	32522
9	United Kingdom	15547	9	France	25753
10	India	15538	10	Korea	24697
11	Canada	10007	11	Singapore	24481
12	Australia	9623	12	Philippines	14253
13	Malaysia	7684	13	New Zealand	12429
14	France	6743	14	Indonesia	12200
15	Russia	6262	15	Malaysia	11880

Source: own computation based on data from the Statistics Bureau.

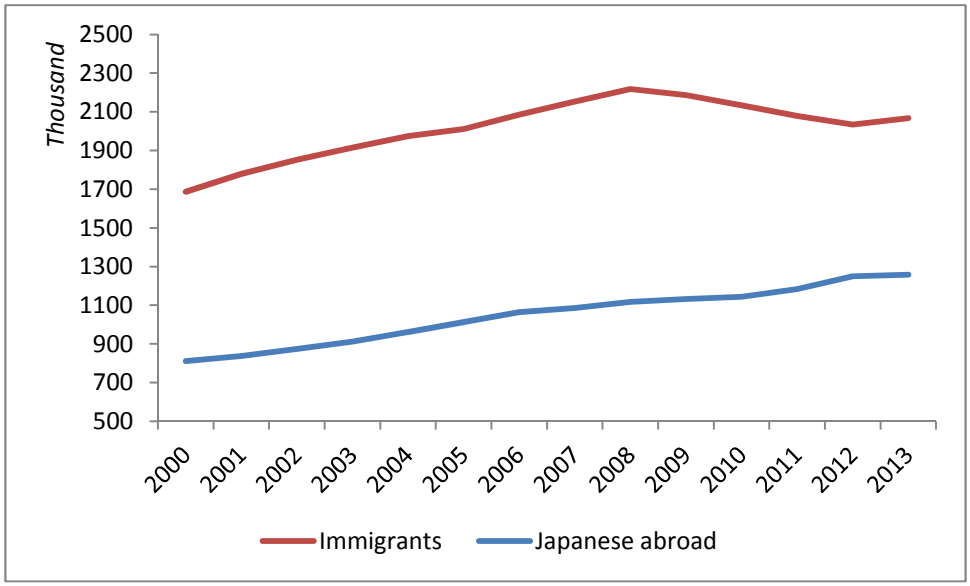

Figure 2. Immigrants and Japanese living abroad (Source: Statistics Bureau).

Table 3. Outbound tourism departures: main destination countries (Yearly average, period: 2000-2013)

Rank	Countries	Outbound	share
1	United States	3643466	18.8%
2	China	3197286	16.5%
3	Korea	2602867	13.5%
4	Italy	1469722	7.6%
5	France	1233212	6.4%
6	Thailand	1203574	6.2%
7	Guam	882707	4.6%
8	Germany	667238	3.4%
9	Singapore	639314	3.3%
10	Spain	614231	3.2%
11	Australia	540483	2.8%
12	Malaysia	385721	2.0%
13	Philippines	377029	1.9%
14	Vietnam	363450	1.9%
15	Switzerland	353861	1.8%

Source: own computation based on data from Japan National Tourist Organization (JNTO).

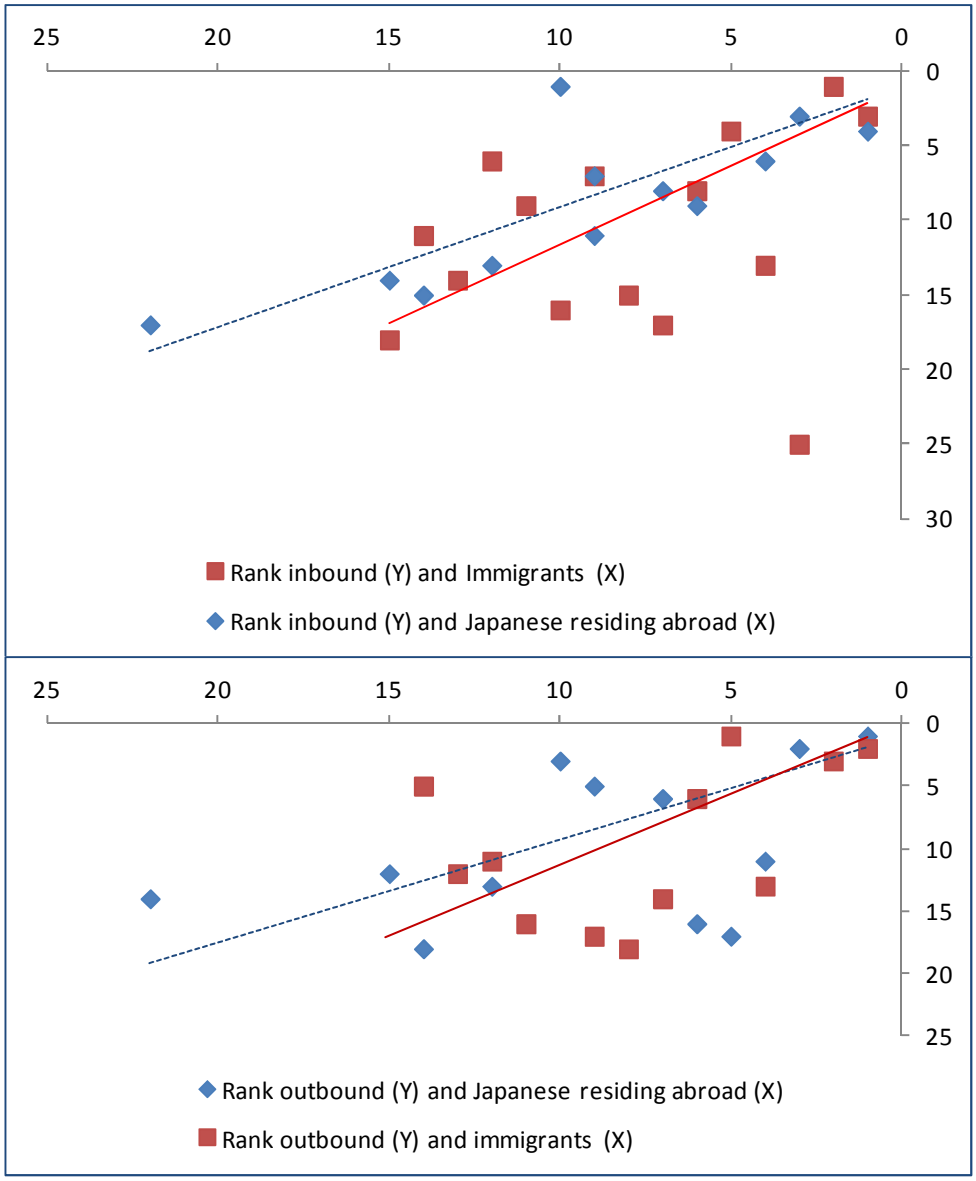

Figure 3. Country ranks correlation: Inbound tourism, outbound tourism, immigrants and Japanese abroad.

Table 4. Inbound tourism arrivals and immigrants

Variable	Total (1)		Holiday (2)		Business (3)	
ln_imm	0.4617	***	0.6233	***	0.3154	***
	(0.154)		(0.172)		(0.089)	
ln_gdpp	0.5964		0.838	*	0.6468	***
	(0.376)		(0.461)		(0.145)	
ln_rer	0.163		0.4487	**	0.1751	
	(0.165)		(0.209)		(0.127)	
			-			
_cons	0.5649		4.6967		0.1969	
	(3.868)		(4.761)		(1.457)	
Year dummies	YES		YES		YES	
Nr. of observations	440		440		440	
Nr. of countries	33		33		33	

Notes: within fixed effects estimator, clustered (by countries) standard errors are in parenthesis. *, ** and *** denote significance at the 10%, 5% and 1% significance levels, respectively.

Table 5. Inbound tourism arrivals, immigrants and Japanese resident abroad

Variable	Total (1)		Holiday (2)		Business (3)		Total (4)		Holiday (5)		Business (6)	
ln_imm	0.4562	***	0.6745	***	0.3582	***						
	(0.156)		(0.179)		(0.085)							
	-											
ln_jemig	0.0392		-0.088		-0.0855		0.0427		0.0331		-0.0212	
	(0.135)		(0.179)		(0.091)		(0.142)		(0.196)		(0.083)	
ln_gdpp	0.5904		0.9661	*	0.7651	***	0.6257	**	1.0182	**	0.7928	***
	(0.398)		(0.499)		(0.171)		(0.406)		(0.530)		(0.207)	
ln_rer	0.1811		0.376		0.1058		0.1699		0.3595		0.0971	
	(0.186)		(0.241)		(0.135)		(0.183)		(0.258)		(0.140)	
			-						-			
_cons	0.9799		5.3688		-0.3324		3.7269		1.3072		1.8246	
	(4.267)		(5.300)		(1.515)		(3.887)		(4.609)		(1.701)	
Year dummies	YES		YES		YES		YES		YES		YES	
Nr. of observations	426		426		426		426		426		426	
Nr. of countries	32		32		32		32		32		32	

Notes: within fixed effects estimator, clustered (by countries) standard errors are in parenthesis. *, ** and *** denote significance at the 10%, 5% and 1% significance levels, respectively.

Table 6. Tourism arrivals in Japan and immigrants. Dynamic model.

Variable	Total		Holiday		Business	
	(1)		(2)		(3)	
ln_in_tot (t-1)	0.8763	***				
	(0.048)					
ln_in_tour (t-1)			0.8406	***		
			(0.048)			
ln_in_busin (t-1)					0.9739	***
					(0.010)	
ln_imm	0.069	*	0.1035	**	0.0105	**
	(0.036)		(0.045)		(0.005)	
ln_gdpp	0.0451	*	0.0797	**	0.0039	
	(0.024)		(0.033)		(0.007)	
ln_rer	0.0017		0.0023		-0.0049	
	(0.011)		(0.016)		(0.003)	
ln_dist	-0.0973		-0.1137		-0.0058	
	(0.081)		(0.114)		(0.019)	
_cons	1.3678		1.2564		0.2217	
	(1.042)		(1.361)		(0.262)	
Year dummies	YES		YES		YES	
Nr. of observations	408		408		408	
Nr. of countries	33		33		33	
Arellano-Bond test for AR1 (p-value)	0.007		0.003		0.003	
Arellano-Bond test for AR2 (p-value)	0.260		0.567		0.022	
Arellano-Bond AR3 (p-value)					0.223	

The one step system GMM estimator has been applied using the xtabond2 command in Stata (Roodman, 2009). The lag of the dependent variable is treated as endogenous. Standard errors consistent in the presence of any pattern of heteroskedasticity and autocorrelation within panels, are reported in parenthesis below the estimated coefficients. Stars denote p-values as follows: * p<0.1; ** p<0.05; *** p<0.01.

Table 7. Outbound tourism flows

Variable	Model 1		Model 2		Model 3	
	(1)		(2)		(3)	
ln_imm	0.3036		0.5015	*		
	(0.292)		(0.289)			
ln_jemig	0.585	***			0.6557	***
	(0.205)				(0.153)	
ln_gdpp	1.0414	***	0.939	**	1.247	***
	(0.263)		(0.428)		(0.228)	
ln_pricer	-0.7578	***	-0.492	*	-0.8308	***
	(0.183)		(0.266)		(0.193)	
_cons	-5.1588	**	-0.3591		-5.1962	**
	(2.122)		(3.839)		(2.466)	
Year dummies	YES		YES		YES	
Nr. of observations	313		313		313	
Nr. of countries	25		25		25	

Notes: within fixed effects estimator, clustered (by countries) standard errors are in parenthesis. *, ** and *** denote significance at the 10%, 5% and 1% significance levels, respectively.

Appendix

Table A1. Descriptive Statistics.

Variable		Mean	Std. Dev.	Min	Max	Observations		
in_tot	overall	172774	370726	6733	2600694	N	=	450
	between		353851	9352	1824942	n	=	33
	within		114307	-587778	948526	T-bar	=	13.6
in_tour	overall	110438	266397	2581	2084195	N	=	450
	between		245611	5212	1331136	n	=	33
	within		105053	-617001	863497	T-bar	=	13.6
in_busin	overall	38554	74164	1007	387280	N	=	450
	between		73342	1282	347143	n	=	33
	within		12742	-54403	107556	T-bar	=	13.6
imm	overall	62988	145250	290	629469	N	=	462
	between		144353	322	509970	n	=	33
	within		29107	-151126	186573	T	=	14
jemig	overall	26553	52924	506	303216	N	=	462
	between		53504	542	302771	n	=	33
	within		4351	4975	48529	T	=	14
gdpp	overall	26686	18087	532	69095	N	=	462
	between		18252	765	65747	n	=	33
	within		1840	19978	33443	T	=	14
rer	overall	61.28	53.34	0.00	213.96	N	=	452
	between		52.30	0.00	158.68	n	=	33
	within		13.26	16.19	116.56	T-bar	=	13.7
outb	overall	813889	1014880	8985	5061377	N	=	313
	between		981010	30471	3643466	n	=	25
	within		202579	-181869	2231800	T-bar	=	12.5
pricer	overall	0.63	0.30	0.12	1.41	N	=	350
	between		0.28	0.22	1.13	n	=	25
	within		0.13	0.25	1.12	T	=	14

Table A2. Pairwise correlation coefficients for the variables used to estimate the inbound demand model.

	ln_outb	ln_imm	ln_jemig	ln_gdpp	ln_pricer	ln_dist
ln_outb	1					
ln_imm	0.70 *	1				
ln_jemig	0.72 *	0.66 *	1			
ln_gdpp	0.02	-0.27 *	0.19 *	1		
ln_pricer	-0.03	-0.25 *	0.18 *	0.90 *	1	
ln_dist	-0.44 *	-0.73 *	-0.17 *	0.53 *	0.52 *	1

* Denotes indicates that correlation coefficients are significant at the 5% level or better

Table A3. Pairwise correlation coefficients for the variables used to estimate the outbound demand model.

	ln_in_tot	ln_in_tour	ln_in_busin	ln_imm	ln_jemig	ln_gdpp	ln_rer
ln_in_tot	1						
ln_in_tour	0.98 *	1					
ln_in_busin	0.94 *	0.88 *	1				
ln_imm	0.81 *	0.76 *	0.68 *	1			
ln_jemig	0.75 *	0.74 *	0.72 *	0.69 *	1		
ln_gdpp	-0.20 *	-0.09	-0.11 *	-0.54 *	-0.11 *	1	
ln_rer	-0.24 *	-0.16 *	-0.16 *	-0.47 *	0.03	0.75 *	1

* Denotes indicates that correlation coefficients are significant at the 5% level or better