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**Conference Paper**

## How to Attract More Tourists to Korea? Possible Collaborations with China

55th Congress of the European Regional Science Association: "World Renaissance: Changing roles for people and places", 25-28 August 2015, Lisbon, Portugal

**Provided in Cooperation with:**

European Regional Science Association (ERSA)

*Suggested Citation:* Zhong, Wenjun; Oh, Jinhwan (2015) : How to Attract More Tourists to Korea? Possible Collaborations with China, 55th Congress of the European Regional Science Association: "World Renaissance: Changing roles for people and places", 25-28 August 2015, Lisbon, Portugal, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:

<https://hdl.handle.net/10419/124658>

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# **How to Attract More Tourists to Korea?**

## **Possible Collaborations with China**

### **Abstract**

Based on the gravity model, this paper analyzes China and South Korea's tourism patterns. Using a panel data set of China's international tourism flows from 32 countries for 1995-2012, and Korea's international tourism flows from 152 countries for 2005-2013, this study finds that the two countries' data sets are generally consistent with the predictions of the gravity model. We further investigated the predicted values of tourist flows with actual values to determine under-represented countries. Policy implications follow regarding how to attract more tourists to Korea.

**Key words:** gravity model, China, Korea, tourism

### **1. Introduction**

The tourism industry is becoming more and more important in Korea as a model for improving service industries. Given that manufacturing sectors are losing their competitiveness due to high input costs for labor and capital and major parts for manufacturing processes are made outside the country, mostly in developing countries, service industries have emerged as the dominant ones. As an important contributor, the tourism sector is expected to play an important role in reinvigorating the local economy, which has been in recession for many years. As shown in Table 1,

although Korea's growth rate has stagnated for the past decade, the tourism industry has been booming, with increasing revenues and numbers of international tourists.

**Table 1.** Key facts on Korea GDP growth and tourism

<b>Year</b>	<b>GDP Growth Rate (%)</b>	<b>Tourism Receipts ( US\$1000 )</b>	<b>Tourist Arrivals (Number)</b>
<b>2000</b>	8.83	6,811,300	5,321,792
<b>2001</b>	4.53	6,373,200	5,147,204
<b>2002</b>	7.43	5,918,800	5,347,468
<b>2003</b>	2.93	5,343,400	4,752,762
<b>2004</b>	4.90	6,053,100	5,818,138
<b>2005</b>	3.92	5,793,000	6,022,752
<b>2006</b>	5.18	5,759,800	6,155,047
<b>2007</b>	5.46	6,093,500	6,448,240
<b>2008</b>	2.83	9,719,100	6,890,841
<b>2009</b>	0.71	9,782,400	7,817,533
<b>2010</b>	6.50	10,321,400	8,797,658
<b>2011</b>	3.68	12,396,900	9,794,796
<b>2012</b>	2.29	13,448,110	11,140,028

Source: World Bank World Development Indicators (2013)

Korean Tourism Organization (2013)

Although this is an impressive trend for the country, South Korea is not a big market for tourism, especially relative to its neighbor, China. As shown in Table 2, in terms of international tourist arrivals in 2012, Korea is ranked 23<sup>rd</sup>, with around 11 million people, while China ranked 3<sup>rd</sup>, with more than 57 million people. South Korea has collaborated with Japan and issued a joint rail pass that provides foreign tourists with unlimited access to the two countries' rail networks for a certain number of days, similar to Europe's Eurail Pass<sup>1</sup>. However, this kind of collaboration does not

<sup>1</sup> Four Eurail Pass types are available:

Eurail Global Pass, for travel in 24 countries,

Eurail Select Pass, for travel in 3, 4, or 5 countries,

Eurail Regional Pass, for travel in 2 countries (or 2 country-combinations), and

exist between Korea and China, although it would seem to be necessary.

**Table 2. Number of International Tourists Arrivals by Country (2012)**

<b>Country</b>	<b>Number of International Tourists</b>
1.France	83,013,000
2.United States	66,969,000
3.China	57,725,000
4.Spain	57,701,000
5.Italy	46,360,000
6.Turkey	35,698,000
7.Germany	30,411,000
8.United Kingdom	29,282,000
9.Russian Federation	28,177,000
10.Malaysia	25,033,000
11.Austria	24,151,000
12.Hong Kong SAR, China	23,770,000
13.Mexico	23,403,000
14.Ukraine	23,013,000
15.Thailand	22,354,000
16.Canada	16,344,000
17.Greece	15,518,000
18.Poland	14,840,000
19.Saudi Arabia	14,276,000
20.Macao SAR, China	13,578,000
21.Netherlands	11,680,000
22.Egypt, Arab Rep.	11,196,000
23.Korea, Rep.	11,140,000
24.Singapore	11,098,000
25.Croatia	10,369,000
26.Hungary	10,353,000
27.Morocco	9,375,000
28.Czech Republic	8,908,000
29.Switzerland	8,566,000
30.Japan	8,358,000

Source: World Bank World Development Indicators (2013).

Against this backdrop, this study first examines countries from which tourists

actually visit China and Korea and whether the actual numbers are large enough given the countries' economic size, distance from China or Korea, price levels, cultural relationships, and visa requirements. Based on the gravity model, this study finds that China and Korea share a number of under-represented countries in terms of international tourist arrivals. Based on these findings, this study suggests that China and Korea work together to attract more tourists from these countries and that Korea need to be more active in collaborating with China to 'share' international tourists who visit China.

## **2. Model, Data, and Methodology**

The gravity model is originally from Newton's gravitational law, illustrating a force between two objects being proportional to their masses and counter-proportional to their distance. Applied to social sciences, this model is used to measure determinants of international trade and tourist arrivals, for example.

Tinbergen (1962) provided initial specifications and estimates of the determinants of trade flows using the gravity model. In the previous studies of international tourism, Hanafiah and Harun (2010) and Kosnan and Ismail (2012) studied tourism demand in Malaysia using a modified gravity model. Bermeo and Oh (2013) analyzed Peru's determinants of international tourist arrivals. All of these studies were based on key economic factors, such as GDP, per capita GDP, consumer price index, distance, population, and exchange rate. These studies all showed that

there is a strong relationship between the key economic factors and the number of tourist arrivals.

Based on this, we first examine determinants of international tourist arrivals to China and Korea using all available panel data. For China, the data set is from 1995 to 2012, covering 32 countries, and for Korea, it is from 2005 to 2012, covering 152 countries. The regression equations for the two countries are as follows:

China:

$$\begin{aligned} \ln TR_{cjt} = & \alpha + \beta_1 \ln(GDP\_cons_{ct} * GDP\_cons_{jt}) + \beta_2 \ln(PCGDP_{ct} * PCGDP_{jt}) \\ & + \beta_3 \ln(CPI_{ct} / CPI_{jt}) + \beta_4 \ln Dist_{cj} + \beta_5 Border_j + \beta_6 Culture_j \\ & + \varepsilon_{cjt} \end{aligned} \quad (1)$$

Korea:

$$\begin{aligned} \ln TR_{kjt} = & \alpha + \beta_1 \ln(GDP\_cons_{kt} * GDP\_cons_{jt}) + \beta_2 \ln(PCGDP_{kt} * PCGDP_{jt}) \\ & + \beta_3 \ln(CPI_{kt} / CPI_{jt}) + \beta_4 \ln Dist_{kj} + \beta_5 Visa_j + \varepsilon_{cjt} \end{aligned} \quad (2)$$

Where  $c$  and  $k$  represent China and Korea, respectively, and  $j$  represents countries where tourists are coming from.  $TR_{ijt}$  is the number of tourist arrivals from country  $j$  to country  $i$  (China and Korea) in year  $t$ ;  $GDP\_cons_{it} * GDP\_cons_{jt}$  is the product of GDP (constant at 2005) of country  $i$  and the tourist's country  $j$  in year  $t$ ;  $PCGDP_{it} * PCGDP_{jt}$  is the product of per capita GDP of country  $i$  and the tourist's country  $j$  in year  $t$ ;  $CPI_{it} * CPI_{jt}$  is the relative price of tourism given by ratio of the CPI of country  $i$  over the CPI of the tourist's country  $j$  in year  $t$ ;  $Dist_{ij}$  is the distance between country  $i$  and the tourist's country  $j$ ;  $Border=1$  if the tourist's country  $j$

shares a border with China, and 0 otherwise;  $Culture=1$  if a Chinese language is a majority foreign language and has Chinese culture in the tourist's country, and 0 otherwise;  $Visa_j=1$  if there is visa requirement for tourists from the country  $j$  coming to Korea, and 0 otherwise;  $\varepsilon_{ijt}$  indicates residuals.

Border and culture dummies are not used in Korea because it does not share a border except with North Korea (not included in this study) and there are no other countries where Korean language and culture are dominant. Also, a visa requirement dummy is not used for China, which requires visas for most countries.

GDP, per capita GDP and CPI are collected from the World Bank's World Development Indicators. GDP is measured in constant 2005 US dollars. Per capita GDP is measured in constant 2011 international dollars and CPI is measured in constant 2010 international dollars. CPI is calculated using the Laspeyres formula and fixed at the year 2010. The distance data of capital cities between country  $i$  and country  $j$  were from [www.distancefromto.net](http://www.distancefromto.net), expressed in kilometers (City to City, Place to Place Distance Calculator, 2014). The Visa-free entry source is from the Ministry of Foreign Affairs, Republic of Korea.

For the dependent variable, Chinese data were obtained from two official statistical data sources: the National Bureau of Statistics of the People's Republic of China, which is available from 1995 to 2012, covering 22 countries. The other is from the China National Tourism Administration, covering from 2005 to 2012 for extra 10 countries. Regarding Korea, the Korea Statistical Portal (KOSIS) provides data

between 2005 and 2013 covering 152 countries after deleting a few non-independent territories.

The product of GDP signifies the national output and economic size. More tourists are expected to travel abroad as their economies' sizes become larger. From the aspects of hosts, a larger economy has more potential to attract more tourists. In this sense, the signs of  $\beta_1$  in both equations are estimated to be positive ( $\beta_1 > 0$ ). This study uses 1-year lagged GDP to minimize the endogeneity problem, thereby avoiding the reverse causality issue.

The product of per capita GDP is used to measure the income level and purchasing power. That is, an increasing income level promotes the development of the tourism industry. The sign of  $\beta_2$  is, therefore, estimated to be positive ( $\beta_2 > 0$ ).

The ratio of CPI is used to compare the consumption level between a destination and an origin country. It means that the lower the living cost in the destination country, compared with the origin country, the greater possibility to attract more tourists. Thus, the signs of  $\beta_3$  are estimated to be positive ( $\beta_3 > 0$ ). The distance variable is expected to show a negative coefficient for self-evident reasons.

Dummy variables for border and culture are only used in China's case, because, for Korea, only North Korea would belong here, which is excluded in this study. For a border dummy, '1' is provided for the countries<sup>2</sup> that shares borders with China and

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<sup>2</sup> Afghanistan, Bhutan, North Korea, Laos, Myanmar, Tajikistan, Vietnam, out of India, Mongolia, Russia, Pakistan, Nepal, Kazakhstan, Kyrgyzstan, Afghanistan, Bhutan, North Korea, Laos, Myanmar, Tajikistan, Vietnam, which are excluded in this study due to lack of data.



‘0’ otherwise. For the culture dummy, ‘1’ is for three countries<sup>3</sup> whose dominant foreign language is Chinese and who have significant proportions of Chinese-based residents and ‘0’ otherwise. The expected signs for these coefficients are all positive. On the other hand, a visa dummy was not used for China, which requires a visa for almost all countries. Instead, this dummy was used for Korea’s case, ‘1’ visa-requiring countries and ‘0’ otherwise<sup>4</sup>.

In China’s case, the tourist arrival data from the two agencies have different time periods, 1995-2012 and 2005-2012. For this reason, we conducted regression analyses separately, a 3-year average for the data set of 1995-2012 with 22 countries and annually for the data set of 2005-2012 with 32 countries. This kind of difference was not seen in Korea’s case where we conduct only one regression using 2005-2013 data for 152 countries.

Per the methodology, this study adopted a random effect model, following Baldwin (1994) and Gros and Gonciarz (1996). An important reason for using a random effect model is that fixed effects cannot analyze time-invariant variables, such as distance, which is a crucial variable in this study. Results from Hausman tests, provided in Tables 6 and 7, also confirmed that the fixed effects and random effects models were not systematically different. Additionally, this study uses White’s robust standard errors to correct heteroskedasticity and uses 1-year lagged GDP to minimize

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<sup>3</sup> Indonesia, Malaysia, Singapore

<sup>4</sup> Albania, Australia, Bahrain, Bosnia and Herzegovina, Canada, Croatia, Cyprus, Ecuador, Egypt, Fiji, Guyana, Honduras, Indonesia, Japan, Mauritius, Oman, Paraguay, Qatar, Saudi Arabia, Seychelles, Slovenia, Solomon Islands, Swaziland, Tonga, United States.

the endogeneity problem, thereby avoiding the reverse causality issue.

After these regression analyses, this study compared the gravity-based predicted tourism flows (P) with the actual ones (A) to analyze China and Korea's tourism potentials and to determine potential markets to expand its tourism industry.

### 3. Results

**Table 3. Results of China and Korea**

Explanatory Variables	China		Korea
	Three Years Average (1995-2012)	Every Year (2005-2012)	Every Year (2005-2013)
Log (Constant GDP-lag)	0.038 (0.136)	-0.078 (0.114)	0.929*** (0.050)
Log (PCGDP)	0.801*** (0.161)	0.503*** (0.158)	0.251*** (0.091)
Log (Distance)	-0.299 (0.345)	-1.227*** (0.329)	-2.025*** (0.244)
Log (CPI)	0.128 (0.135)	0.108 (0.151)	-0.421** (0.176)
Border	1.903*** (0.414)	-0.323 (0.720)	-
Culture	1.005* (0.526)	0.824** (0.340)	-
Visa	-	-	0.044 (0.322)
Constant	-3.980 (4.864)	17.849*** (4.731)	-27.525*** (3.544)
Number of countries	22	32	152

Note: Method of estimation: random effects. Standard errors in parentheses. Standard errors calculated with White's correction for heteroskedasticity. Significant at the \* 10%, \*\* 5% and \*\*\* 1% level.

Table 3 provides regression results for both China and Korea. In China's case, in both regressions (3-year average and every year), the positive signs of per capita GDP

and the negative signs of distance are consistent with the predictions of the gravity model, with statistical significance at the 1% level; tourists visiting China are mostly from higher income and neighboring countries. For GDP, the signs are mixed and not significant, unlike the gravity model in international trade where GDP is significantly positive in most studies. In the studies of Sohn (2005), Wang, Wei, and Liu (2010), and Ekanayake et al. (2010), the results all indicated that GDP has positive and significant influences on trade flows. This seems not to be the case in the tourism field, in which per capita GDP is more important than GDP itself. The coefficient of CPI was also unexpected, although the signs were not significant. The dummy variable of border had a significantly positive sign in the 3-year model, but insignificantly negative in the model with an annual analysis. If we put more weight on significant coefficients, it seems that it is easier to travel to China from countries sharing borders with it, as expected. The culture dummy is positive in both models, again as expected.

In Korea's case, the positive signs for constant GDP and per capita GDP, and negative signs for distance and CPI are all as expected; tourists visiting Korea are usually from higher GDP, higher income neighboring countries, where price levels are higher than in Korea. The visa variable is positive but not statistically significant.

Tables 4 and 5 compare the actual trade flows with estimated ones to see the difference between what it is and what should be. Following Montenegro and Soto (1997), Sohn (2005), Gul and Yasin (2011), Bermeo and Oh (2013), we divided the

actual flows (A) by the predicted ones (P). If the A/P value is below unity, this signifies that the tourist flows from the source country is under-represented and has potential to expand. In China's case, for the simplicity, this study provides only one value by using the average for the two models. The results are displayed in descending order.

**Table 4. Actual versus Predicted: International Tourists Arrivals to China**

Country	A/P	Country	A/P
United States	1.137561	Mongolia	0.9888671
Philippines	1.1257645	Spain	0.9806809
Japan	1.1249245	Italy	0.97410415
Russia	1.119814	Singapore	0.95722425
Republic of Korea	1.1178825	Pakistan	0.9558246
Thailand	1.061939	Mexico	0.9507781
United Kingdom	1.0618105	Netherlands	0.9506048
Australia	1.0605915	Sweden	0.9227781
India	1.04442735	New Zealand	0.91216505
Germany	1.0434265	Belgium	0.8969217
France	1.0385685	Austria	0.8836386
Canada	1.03326625	Portugal	0.88355165
Indonesia	1.0239665	Kyrgyzstan	0.8781392
Malaysia	1.0227745	Switzerland	0.86543835
Kazakhstan	1.003169	Nepal	0.8594624
		Norway	0.8480945
		Sri Lanka	0.8388498

Note: P (Predicted), A (Actual). Average values between the two models in Table 3.

**Table 5. Actual versus Predicted: International Tourists Arrivals to Korea**

Country	A/P	Country	A/P
Liberia	2.246292	Benin	0.9996842
Tonga	1.922977	Malawi	0.9965168
Dominica	1.890192	United Kingdom	0.9946713
Fiji	1.624987	India	0.9808268
Guyana	1.605186	Lesotho	0.9792377
Samoa	1.563441	Portugal	0.9776616
Gambia	1.445776	Swaziland	0.9775422
Ghana	1.436684	Yemen, Rep.	0.9773138

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Timor-Leste	1.344251	Czech Republic	0.9757412
Mongolia	1.342435	Mozambique	0.9756947
Bolivia	1.330303	Afghanistan	0.9754273
Paraguay	1.324493	France	0.96584
Kyrgyzstan	1.314147	Bangladesh	0.9653206
Solomon Islands	1.305562	Seychelles	0.9650722
Honduras	1.257136	Pakistan	0.9647913
Belize	1.252097	Germany	0.9602719
Sao Tome and Principe	1.249836	Guinea-Bissau	0.9585254
Nepal	1.228222	Netherlands	0.9584622
Cambodia	1.225748	Trinidad and Tobago	0.9571085
Tanzania	1.221943	Mali	0.9560468
Bulgaria	1.199393	Greece	0.9539136
Ukraine	1.19727	Poland	0.9467544
New Zealand	1.194807	Madagascar	0.9464226
Guinea	1.190718	Zambia	0.9420309
Sri Lanka	1.180648	Ireland	0.9404624
Philippines	1.17374	Congo, Rep	0.9384709
Jordan	1.173258	Kazakhstan	0.9382809
Maldives	1.161966	Turkey	0.9355708
Rwanda	1.156772	Lithuania	0.9355379
Thailand	1.150961	Norway	0.9347701
Tajikistan	1.139731	Denmark	0.9303142
Malaysia	1.13883	Sweden	0.9286014
Croatia	1.126636	Finland	0.9277875
Togo	1.124126	Costa Rica	0.927356
El Salvador	1.1241	Morocco	0.9268216
Vietnam	1.119794	Iraq	0.9244572
Senegal	1.116277	Switzerland	0.9236563
Kenya	1.113269	Estonia	0.9215457
Singapore	1.112639	Namibia	0.921091
Indonesia	1.112391	Tunisia	0.9175386
Canada	1.102784	Japan	0.9149615
Peru	1.101855	Austria	0.914525
Burundi	1.093017	Iran	0.9140433
Australia	1.091682	Bhutan	0.9133521
Ethiopia	1.090388	Slovak Republic	0.9128355
Nicaragua	1.085289	Mexico	0.9061615
Haiti	1.081831	Italy	0.9012885
Latvia	1.081179	Dominican Republic	0.9000192
Grenada	1.080757	Belgium	0.8986191
St. Lucia	1.079763	China	0.8983196
Russia (Federation)	1.078908	Slovenia	0.8964113
Uganda	1.056626	Angola	0.8956743

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Laos	1.05518	Malta	0.8950787
United States	1.050967	Gabon	0.8916645
Suriname	1.050811	Armenia	0.889433
Panama	1.049094	Hungary	0.8865557
Mauritius	1.048636	Spain	0.8823672
Nigeria	1.043788	Antigua and Barbuda	0.8818362
Romania	1.040666	Niger	0.8786572
Congo, Dem. Rep.	1.037496	Papua New Guinea	0.8775167
Moldova	1.031839	Burkina Faso	0.8646844
Brazil	1.026305	Brunei	0.8548558
Georgia	1.01984	Belarus	0.8531976
Uruguay	1.017817	Azerbaijan	0.8292395
Guatemala	1.017704	Comoros	0.8235838
Ecuador	1.016608	Cyprus	0.8181259
Cameroon	1.013933	Central African Republic	0.8164707
Egypt	1.010108	Iceland	0.8143281
Israel	1.005669	Saudi Arabia	0.8111882
Colombia	1.001072	Algeria	0.8100092
		Albania	0.7883977
		Oman	0.7618299
		Mauritania	0.7590114
		Luxembourg	0.7544854
		Bahrain	0.7396799
		Macedonia	0.7046095
		Qatar	0.6671978
		Botswana	0.6621608
		Bosnia and Herzegovina	0.6210585
		Chad	0.5468197
		Djibouti	0.5321351
		Equatorial Guinea	0.5141159

Note: P (Predicted), A (Actual).

The Chinese results show that more than half of Asian countries exceeded unity, but for some neighboring countries, like Mongolia (0.99), Nepal (0.86), Pakistan (0.96), and Kyrgyzstan (0.88), China needs to make efforts to attract more tourists from these countries. For the European market, the majority of countries are under-represented, indicating the need for promotion to attract more tourists from those countries.

In Korea's case, China (0.9) and Japan (0.91) are still under-represented; those two countries are the major source countries for Korea, but the actual numbers seem to be too low. Similar to China's case, most European countries are under-represented for Korea.

#### **4. Conclusions and Policy Implications**

The empirical findings of this study provide important policy implications for Korea; although the number of Chinese tourists to Korea is soaring, Korea can attract still more by improving infrastructure. For example, many Chinese tourists have a hard time finding accommodation in Korea, particularly in the Chinese golden week period, a week-long national holiday between October 1<sup>st</sup> and 7<sup>th</sup>, which lowers their satisfaction rates during their stays in Korea. Additionally, there are not enough visitor information centers except in Myeong-dong, inconveniencing tourists when they want to visit local provinces.<sup>5</sup>

Korea needs to make improvements in these issues to attract more tourists and so that those who visit Korea once want to come again. Second, given that most European countries are under-represented, both China and Korea can collaborate to attract tourists from these countries so that they will be able to visit both China and Korea instead of visiting only one of them. This is what most Chinese and Korean

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<sup>5</sup> CNN Travel News (9 October, 2012): <http://travel.cnn.com/seoul/visit/chinese-tourists-now-no1-in-korea-124981>

tourists do when they visit Europe. With no visa requirements and with a rail pass that can be used in many countries, it is very comfortable to travel to several European countries in one trip. However, in the reverse case, this is easier said than done; China needs visa for almost all countries and Korea also needs it for some, and there is no such thing as a rail pass between the two countries, although such a pass exists between Korea and Japan. From the perspective of foreign affairs, Korea and China may reach an agreement on visa policy, so that tourists who obtain a Korean visa can visit China without a further visa within a given time period, and *vice versa*. According to the transport networks, we may consider more frequent flights including low-cost carriers, like Easy Jet or Ryan Air in Europe. We may also consider a rail pass that can be used in both countries, including the ferry between the between Qingdao and Incheon. There are ferry services between the two cities, so this can be included in the rail pass, to make it more sustainable and profitable. This is what the European countries have already done, by collaborating on a rail pass. Using one pass, tourists can enjoy unlimited rides on railways covering up to 24 countries<sup>6</sup> and ferry lines using one rail pass.

Collaboration and cooperation will be an effective and efficient approach, which will not only improve Korea's tourism industry, but China's can benefit as well.

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<sup>6</sup> Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Luxembourg, Netherlands, Norway, Portugal, Ireland, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey.



## References

- Baldwin R (1994) *Towards an Integrated Europe*. London: Centre for Economic Policy Research
- Bermeo M and Oh J (2013) What determines international tourist arrivals to Peru? A gravity approach. *International Area Studies Review* 16(4): 357-369.
- China National Tourism Administration (2013) Tourism Statistics. Available at: <http://en.cnta.gov.cn/html/tjzlm/index.html> (accessed 25 October 2014).
- City to City, Place to Place Distance Calculator (2014) Distance between cities places on map. Available at: <http://www.distancefromto.net/> (accessed 25 October 2014).
- Ekanayake EM, Mukherjee A and Veeramacheni B (2010) Trade Blocks and the Gravity Model: A study of Economic Integration among Asian Development Countries. *Journal of Economic Integration*, 25(4): 627-643.
- Gros D and Gonciarz A (1996) A note on the trade potential of Central and Eastern Europe. *European Journal of Political Economy* 12(1): 709–721.
- Gul N and Yasin H (2011) The trade potential of Pakistan: An application of the gravity model. *The Lahore Journal of Economics* 16(1): 23–62.
- Hanafiah MHM and Harun MFM (2010) Tourism demand in Malaysia: A cross-sectional pool time-series analysis. *International Journal of Trade, Economics and Finance* 1(1): 80–83.
- Korea Tourism Organization. Key facts on tourism. Available at: <http://kto.visitkorea.or.kr/eng/tourismStatics/keyFacts/visitorArrivals.kto> (accessed 25 October 2014).
- Korean Statistical Information Service (KOSIS) Seoul, South Korea. Available at: <http://kosis.kr/eng/> (accessed 25 October 2014).
- Kosnan SSA and Ismail NW (2012) Demand factors for international tourism in Malaysia: 1998–2009. *Prosiding Perkem VII* 1(1): 44–50.
- Sohn, CH (2005) Does the Gravity Model Explain South Korea's Trade Flows? *Japanese Economic Review*, 56(4), 417-30.
- Montenegro, C. E. and Soto, R. 1997) 'How distorted is Cuba's trade? Evidence and

predictions from a gravity model'. *The Journal of International Trade & Economic Development*, 5(1), 45-68.

Ministry of Foreign Affairs, Republic of Korea. Visa Application. Available at: [http://www.mofa.go.kr/ENG/visa/application/index.jsp?menu=m\\_40\\_10](http://www.mofa.go.kr/ENG/visa/application/index.jsp?menu=m_40_10) (accessed 25 October 2014).

National Bureau of Statistic of China (2013) Annual report. Available at: <http://data.stats.gov.cn/english/easyquery.htm?cn=C01> (accessed 25 October 2014).

Tinbergen J (1962) An analysis of world trade flows. In: Tinbergen J (ed.) *Shaping the World Economy*. New York: The Twentieth Century Fund.

Wang C, Wei Y, and Liu X (2010). Determinants of Bilateral Trade Flows in OECD Countries: Evidence from Gravity Panel Data Models. *World Economy*, 33(7), 894- 915.

World Bank (2013) World Development Indicators Database, Washington, DC. Available at: <http://data.worldbank.org/> (accessed 25 October 2014).

**Table 6. Hausman test for China**

	Three years average (1995-2012)		Every year (2005-2012)	
	Fixed	Random	Fixed	Random
<b>Log (Constant GDP-lag)</b>	-0.850*** (0.282)	0.038 (0.159)	-1.339*** (0.156)	-0.078 (0.108)
<b>Log (PCGDP)</b>	1.792*** (0.315)	0.801*** (0.180)	2.026*** (0.192)	0.503*** (0.135)
<b>Log (Distance)</b>	(Dropped)	-0.299 (0.337)	(Dropped)	-1.227*** (0.336)
<b>Log (CPI)</b>	0.299** (0.127)	0.128 (0.126)	0.074 (0.087)	0.108 (0.105)
<b>Border</b>	(Dropped)	1.903** (0.801)	(Dropped)	-0.323 (0.509)
<b>Culture</b>	(Dropped)	1.005 (0.814)	(Dropped)	0.824 (0.649)
<b>Constant</b>	26.094*** (9.680)	-3.980 (5.535)	48.185*** (5.073)	17.849*** (4.429)

**Table 7. Hausman test for Korea**

<b>Coefficients</b>		
	<b>Fixed</b>	<b>Random</b>
<b>Log (Constant GDP-lag)</b>	0.962*** (0.146)	0.929*** (0.046)
<b>Log (PCGDP)</b>	0.872*** (0.212)	0.251*** (0.079)
<b>Log (Distance)</b>	(Dropped)	-2.025*** (0.187)
<b>Log (CPI)</b>	0.051 (0.118)	-0.421*** (0.104)
<b>Visa</b>	(Dropped)	0.044 (0.240)
<b>Constant</b>	-59.562*** (4.352)	-27.525*** (2.734)