THE EFFECT OF TOURISM AGGLOMERATION ON FOREIGN REAL ESTATE INVESTMENT: EVIDENCE FROM SELECTED OECD COUNTRIES

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ABSTRACT. The purpose of this study is to investigate the effect of tourism agglomeration on foreign real estate investment (FREI). Using a panel of 19 OECD countries over a period of 10 years (1999-2008) and controlling for some relevant factors, econometric analysis indicates that tourism agglomeration is a significant determinant of FREI. The result has some implications for policymakers in order to recover their real estate sectors which were hit in recent financial crisis.

KEYWORDS: Tourism agglomeration; Foreign real estate investment; Infrastructure; Panel data; OECD

1. INTRODUCTION

This study focuses on the effect of tourism agglomeration on foreign real estate investment (FREI). The question of the relationship between tourism agglomeration and FREI has only recently started to be addressed in the empirical literature. For example, Gholipour et al. (2010) use a multivariate cointegration approach to examine the interaction between Iranian investment in Dubai real estate sector (IIDRE) and Iranian tourism agglomeration in Dubai and conclude that in the long-run the causation runs from tourism agglomeration to IIDRE. It means that agglomeration of Iranian knowledge about attractiveness of Dubai as a holiday destiny is an important factor explaining IIDRE. From a single country viewpoint, Rodríguez and Bustillo (2008) study the determinants of FREI in Spain using an Engle-Granger cointegrating regressions approach and report that tourism agglomeration, gross domestic product per capita, expected capital gains, travel costs, and housing prices are relevant factors explaining foreign real estate investment in Spain. In particular, they argue that investment in real estate by foreigners in Spain is influenced by the acquisition of information about the attractiveness of Spain as a holiday destination.

While there has been some time-series papers published in this area, no empirical study has examined the relationship between these two variables by applying panel data set from a large sample of countries. Advantage of using panel data is that they usually give the researcher a large number of data points, increasing the degrees of freedom and reducing collinearity among independent variables, therefore improving econometric estimate efficiency. In addition, panel data allow researchers to test a number of important economic questions that

cannot be addressed using time series or cross-sectional data sets (Chuang and Wang, 2009). To establish tourism agglomeration as a major determinant of FREI, this study investigates the relationship between these two variables focusing on OECD countries. OECD countries have been chosen for the present study due to the availability of data for FREI and low restriction on foreign investment in real estate sectors. Moreover, OECD countries are among the most important tourist destinations in the world. Our result reveals that greater number of international tourists to a country and tourism agglomeration will lead to higher levels of FREI.

This relationship is of particular relevance for policymakers since several observers suggest that one of the main requirements of real estate recovery after 2008 financial crisis is tourism recovery (Jones Lang LaSalle, 2009). In other words, policymakers may be interested to know whether increased number of international tourists and consequently tourism agglomeration could lead to higher investment by foreigners in the real estate sectors. Since policy analysis is greatly enhanced by using panel data sets, therefore our study will provide some policy implications.

The rest of this paper is presented as follows. Section 2 provides some stylized facts for the tourism and FREI in OECD countries. Section 3 provides the theoretical understanding regarding the relationship between tourism agglomeration and FREI. In Section 4, besides the tourism factor, we identify the factors that will be relevant for our econometric investigation, drawing from the empirical and theoretical literature. Section 5 describes the data sources, presents the econometric methodology and analyses the empirical results. Section 6 concludes this paper.

2. TOURISM AND FOREIGN REAL ESTATE INVESTMENT IN OECD COUNTRIES: STYLIZED FACTS

This section sets the scene for the empirical analysis that follows by presenting some stylized facts for tourism and FREI in OECD countries. During the decade from 1999 to 2008 number of international tourists inbound rose rapidly across much of the OECD countries. For example, Figure 1, based on Global Market Information Data (GMID, 2010), shows number of international tourists trends in 10 OECD countries since 1999.
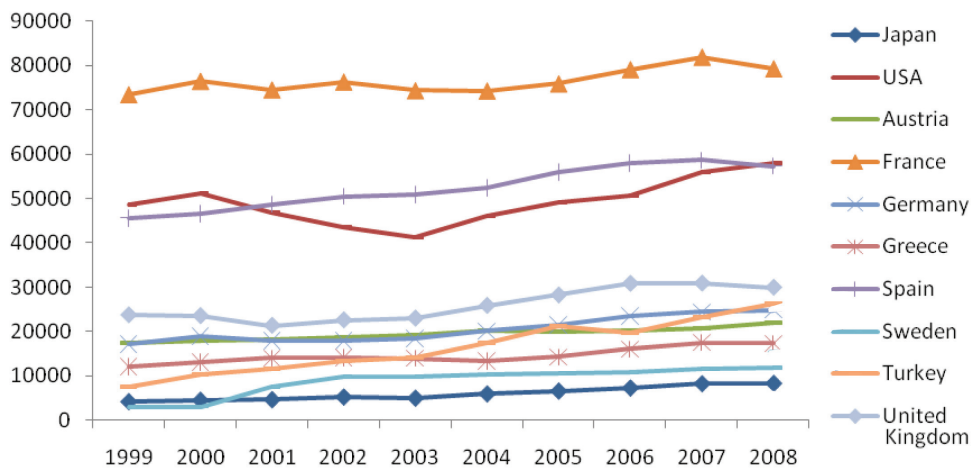

Figure 1. Number of international tourists inbound - selected OECD countries - '000 people: 1999-2008 (GMID, 2010)

The Figure clearly depicts that number of tourists have been rising in most of these countries. Over the 10 years from 1999 to 2008, number of international tourists rose 93% in Japan, 209% in Sweden, 19% in the USA, 25% in Spain, 25% in Austria and 205% in Turkey.

Similarly, the last decade has witnessed a strong growth in the acquisitions of real estate by foreign investors in OECD countries. For example, FREI in Spain represents around 40% of total FDI inflows (Rodríguez and Bustillo, 2008). Real estate and business activities accounted for around one-fifth of FDI inflows in the Czech Republic (UNCTAD, 2006). FDI inflows to Poland's real estate sector increased from 126.5 in 2001 to 2363.4 millions of US dollars in 2007 (see Table 1, for more evidence).

Table 1. Foreign real estate investment inflows in selected OECD countries (millions of US dollars)

Country	2001	2004	2007
Hungary	71.8	285.3	649.3
Poland	126.5	844.2	2363.4
Slovakia	55.8	157.8	601
Denmark	24.3	324.7	1493.3
France	1997.1	2614	6302.5
Germany	504.2	1180.3	3659.1
Greece	0.5	8.4	149.8
Turkey	0	40	449

Source: OECD Statistics (2010)

Based on the above statistics, it can be observed that increases in FREI has gone with continues increase in the number of international tourists in recipient countries. This led some observers to suggest that the growth in FREI in OECD countries has been stimulated by the increased availability of tourists (e.g. Rodríguez and Bustillo, 2008).

3. CONCEPTUAL DISCUSSION

The existing studies imply that the demand theory (or demand side variables for real estate in a foreign country) can be useful to understand how tourism agglomeration leads to higher level of FREI. In this respect, Rodríguez and Bustillo (2008) argue that beside the costs of acquiring foreign real estate which must be considered as core determinants in demand theory, demand for real estate abroad (housing services in particular) is influenced by the acquisition of information about the attractiveness of the host country as a holiday destination. According to Urtasun and Gutie´rrez (2006, pp. 2), attractiveness of a country may include "specific natural features of the environment such as sandy beaches, abrupt mountains, picturesque landscapes, wild forest, or pleasant weather, or man-made features historic and cultural values or artistic and architectural pieces, or even more practical ones such as low prices or a high level of tourism facilities, or a special combination of some of these".

This argument is similar to the agglomeration effect in foreign direct investment (FDI) in the host country. For example, Weber (1929) and Marshall (1920) argue that one of the major factors that would help clustering of firms in the host country is the existence of agglomeration economies. Likewise, Mallampally and Sauvant (1999) mention that FDI may flow into a country not for its own market nor to capture the locational advantage of the country per se, but rather to use it as a springboard into other countries in the region. Investment could also flow purely to follow competitors or to follow clients. This is referred to as the agglomeration effect (Cited in Ramasamy and Yeung, 2010). In the similar studies, Kotabe (1993) and Wilkinson and Brouthers (2000) state that in the US, multinational corporations (MNCs) tend to base their location decisions on the actions of previous foreign investors.

4. FACTORS AFFECTING FOREIGN REAL ESTATE INVESTMENT

In this section we set out the variables that we will consider for our empirical analysis. This choice will be guided by two considerations: the relevance of the variables in question from a theoretical and empirical perspective and the availability of data.

Given the aim of our empirical analysis, an obvious variable to include is tourism agglomeration. As outlined in the "Introduction" section, tourism agglomeration can lead to increased FREI in host countries. It is because tourism is considered as the first step before acquiring a property (Rodríguez and Bustillo, 2008). In other words, FREI may be influenced by the acquisition of information about the attractiveness of the host country as a holiday destination. For example, Gholipour et al. (2010) argue that as a result of repeat visit and information agglomeration about Dubai by Iranian upper-middle and upper classes, they have acquired a taste to have a house or resort to spend their holiday rather than staying in hotels. Kundu and Contractor (1999) find that tourism receipts, local market and inward foreign investment have positive and significant influence on location choices of foreign investment in the hotel industry. In another paper, He et al. (2009) study the determinants of FDI in China's real estate sector and their findings suggest that foreign direct investment in real estate has favored provinces with more international tourists and more foreign enterprises. Therefore, we hypothesize that tourism agglomeration should exert a positive effect upon FREI. In this study, similar to the study by Rodríguez and Bustillo (2008), we use the number of tourists, but lagged one period in order to take account of the time required to learn about the attractiveness of the host country as holiday destination.

Several studies found that host locations which have established infrastructural systems tend to attract a greater amount of services FDI. For example, Ramasamy and Yeung (2010) show that infrastructure development is an important determinant for services FDI. Similarly, Anop (2010) finds a significant relationship between the level of road infrastructure and inward FDI in real estate. It is argued in the Jones Lang LaSalle (2009) report that developed infrastructure is one of the main criteria for long term investors in the Middle East and North Africa (MENA) countries' real estate sector. Chin et al. (2006) study the factors that are of importance in attracting local and international investments in Southeast Asian property markets. Their results indicate that level of public infrastructure (as well as other factors such as sound financial economic structure, strength and stability of the economy, restrictions and regulations on foreign investors, political stability and legal regulation) were found important for foreign investors. Therefore, a reliable infrastructure system (e.g. electricity, number of telephones and road) is expected to have a positive relationship with FREI.

Another important determinant that is likely to have an impact on FREI is GDP or market size (Anop, 2010). It is argued that international investments are attracted by both the size of the host country and by the purchasing power of its inhabitants. In other words, larger GDP would create demand for real estate properties, therefore attracting more FDI in real estate industry. Likewise, Ramasamy and Yeung (2010) show that GDP is positively related to inward services FDI (including real estate) and concluded that countries with a large market base are preferred by investors. Therefore, it is reasonable to expect that the larger the market size the higher the level of FREI.

In previous studies, higher real estate price has been recognized as one of the main determinants of FREI. For example, He et al. (2009) find that the heightening housing prices significantly stimulate the inflow of FDI in China's real estate industry. In other words, they argue that foreign direct investors in real estate respond to returns to capital when choosing locations in China. Likewise, Rodríguez and Bustillo (2008) show that house price is an important factor explaining FREI in Spain. Thus, in this study, one would expect to see that higher real estate price has a positive relationship with FREI.

Transparency is one the important factors in explaining FREI (Eichholtz et al., 2010; Jones Lang LaSalle, 2008). For example, Eichholtz et al. (2010) indicate that foreign property investors mainly invest in countries that have a transparent real estate market. Similarly, Jones Lang LaSalle (2008) argues that more transparent markets will attract greater levels of foreign participation as overseas investors and occupiers become more comfortable and better informed. Seyoum and Manyak (2009) examine the role of public and private transparency in attracting inward foreign direct investment (FDI) flows to developing countries. Their empirical analysis indicated that private and public sectors transparency have positive and significant

effect on FDI inflows. Similarly, Falkenbach (2009) study the market selection criteria in international real estate investments. He found that the important factors for market selection are availability of market information and performance benchmarks (transparency), safety of property rights and title, return on property investments, expected economic growth as well as market maturity. Therefore, it is reasonable to expect that the more transparent the business environment the higher the level of FREI.

5. DATA, METHODOLOGY AND RESULTS

The analysis comprises the period 1999 to 2008 for a sample of 19 OECD countries (the country sample can be found in Appendix A). The linkage between tourism agglomeration and FREI is our particular concern. Included are all OECD countries for which data on all variables in the regressions are obtainable. The data on the variables come out from different sources (see Table 2). Information on FREI and housing price index is taken from the OECD Statistics. Data relating to the number of total tourist arrivals, GDP and transparency have been obtained from the GMID (2010). The road mileage per capita proxy for infrastructure has been obtained from the World Bank.

Table 2. Description of dependent and independent variables

Variables	Definition	Source	Expected sign
FREI	Inflows of foreign direct investment in real estate sector in a country (millions of US dollars)	OECD Statistics	
TOUR-1	Lagged (one period) number of international tourists proxy for tourism agglomeration	GMID	+
INFRAS	Road mileage per capita proxy for infrastructure	World Bank	+
GDP	GDP proxy for market size	GMID	+
PRIC	Housing price index proxy for real estate price	OECD Statistics	+
TRANS	Corruption perceptions index proxy for transparency	GMID	+

Two important panel models are the fixed effects model and the random effects model. In order to choose the fixed or random effects model for the equation estimation, this study applies the Hausman (1978) test because this test determines the preferred model. The statistics from the Hausman test suggests applying the fixed effects instead of the random effects model. Therefore, we use fixed effects estimation with country specific fixed effects, to explain within-country variation in FREI. Generally, fixed effects estimator is used to capture unobserved country specific effects and it also produces consistent estimates (Chuang and Wang, 2009). In fact, the panel data analysis with country fixed effects approach allows us to distinguish more systematically between the effects of tourism agglomeration and other variables on FREI over time as well as across countries.

Given the earlier discussion, the following fixed effects panel data model is fitted to guide the rest of the analysis.

$$\ln FREI_{it} = \beta_0 + \beta_1 \ln TOUR_{it-1} + \beta_2 \ln INFRAS_{it} + \beta_3 \ln GDP_{it} + \beta_4 \ln PRIC_{it} + \beta_5 TRANS_{it} + e_{it}, \qquad (1)$$

where: $FREI_{it}$ stands for FDI inflows to real estate sector for country i in period t; β_0 is the country-specific fixed-effect; $TOUR_{it-1}$ denotes the number of international tourists (lagged one period) for country i in period t; $INFRAS_{it}$ denotes the infrastructure for country i in period t; GDP_{it} represents the market size for country i in period t; $PRIC_{it}$ stands for the real estate price for country i in period t; $TRANS_{it}$ stands for the transparency in real estate market for country i in period t and e_{it} is an error term.

As in most studies in the empirical literature on FDI flows, the logarithm for investment flows and the independent variables is used except for transparency (whose values ranges from 1 to 10: higher values indicate more transparent ratings).

The results are shown in Table 3. Since we use fixed effects estimation, the results thus indicate how changes in explanatory variables within countries, affect FREI. The overall fit of the panel model is reasonable, taking the diversity of the country sample into account. The results show that tourism agglomeration measured by $TOUR_{t-1}$ is positively associated with FREI, indicated by an estimated coefficient (0.2108) that is significant at the 10% level. It means that tourism agglomeration contributes positively to the expansion of foreign real estate investment in a host country. Figure 2 shows the scatter plot of tourism agglomeration and FREI. The positive slope of the trend line confirms our findings. Our result is consistent with time-series studies (Gholipour et al., 2010; Rodríguez and Bustillo, 2008). In addition, as the Table 3 indicates, higher level of GDP (market size) is associated with more FREI, concurring with other similar studies (e.g. Anop, 2010; Ramasamy and Yeung, 2010). On the other hand, other factors do not have a significant association with FREI.

Table 3. Regression results of fixed effects estimation

Independent Variables	Dependent Variable: lnREIT
$\ln TOUR_{t-1}$	0.2108* (3.3575)
$\ln INFRAS_t$	−0.0332 (−0.6966)
$\ln GDP_t$	0.1662* (0.1932)
$\ln PRIC_t$	0.2396 (0.5714)
$TRANS_t$	−0.0167 (−0.0977)
Constant	4.4827* (1.7237)
R^2	0.8996
S.E. of Reg.	0.7345
D-W stat	1.9907

Note: Figure in ( ) denotes t-value. Asterisks * denote significant at 10%.

In particular, although the coefficient for PRIC has positive signs, meaning that an increase in this factor is positively associated with higher FREI, but is not significant. This result is not consistent with Rodríguez and Bustillo (2008) and He et al. (2009) who found that real estate price is one of the significant determinants of FREI. Similarly, the results suggest that there is no significant relationship between level of infrastructure and transparency and FREI at 1%, 5% and even at 10%. These findings do not provide support for previous studies (e.g. Ramasamy and Yeung, 2010; Anop, 2010; Chin et al., 2006; Eichholtz et al., 2010; Falkenbach, 2009).
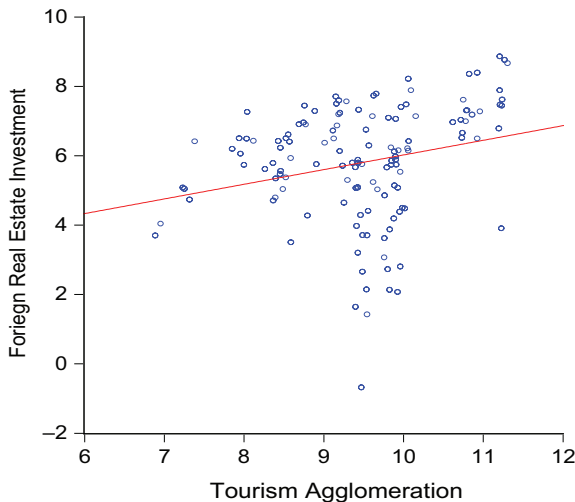
Figure 2. The association between tourism agglomeration (ln of number of people - 000 people in) and foreign real estate investment (ln of millions of US dollars)

6. CONCLUSION

This paper empirically investigates the relationship between tourism agglomeration and foreign real estate investment (FREI) for selected OECD countries over the period of 1999-2008, with the fixed effects panel data approach. The obtained results suggest that

there is a positive and significant association between tourism agglomeration and FREI. This finding is important for policymakers in that it indicates that the development of international tourism and consequently tourism agglomeration has positive effects on FREI. Therefore, policymakers need to pay particular attention to their tourism sectors and attempt to attract more international tourists in order to develop and recover their real estate sectors which were hit in recent financial crisis.

Ultimately, the results of the study should be considered in light of its limitations, which also point to some issues for future research. The number of 19 OECD countries in our sample is one of the study's limitations. Given the data constraints, results should be viewed with caution and hence data from more countries is needed to fully investigate this relationship and to improve our understanding. Additionally, the present study only considered the aggregate FREI for analysis. For future research, it may be useful to examine the relationship between tourism agglomeration and FREI by using disaggregate data from various types of real estate such as residential and commercial real estate.

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SANTRAUKA

TURIZMO AGLOMERACIJOS POVEIKIS UŽSIENIO INVESTICIJOMS Į NEKILNOJAMĄJĮ TURTĄ: ĮRODYMAI IŠ ATRINKTŲ EBPO ŠALIŲ

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Šio tyrimo tikslas – išnagrinėti turizmo aglomeracijos poveikį užsienio investicijoms į nekilnojamąjį turtą (UINT). Pasirinkus 19 EBPO šalių imtį, stebimą 10 metų (1999–2008 m.), ir kontroliuojant kai kuriuos atitinkamus veiksnius, ekonometrinė analizė rodo, kad turizmo aglomeracija daro reikšmingą įtaką UINT. Rezultatai iš dalies reikšmingi politikos strategams, kurie siekia atgaivinti nekilnojamojo turto sektorius, paveiktus neseniai praūžusios finansų krizės.

APPENDIX A. Country sample

Japan, South Korea, Czech Republic, Hungary, Poland, Slovakia, Mexico, USA, Austria, Denmark, Finland, France, Germany, Greece, Netherlands, Spain, Sweden, Turkey, United Kingdom