

A Panel Data Analysis of Foreign Direct Investment in the Hospitality Industry

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Abstract

This paper investigates the determinants of FDI activity in the hospitality industry using a gravity model. It draws on a new and unique database of 2,420 FDI projects carried out by 50 parent countries in 104 host countries from 2005 to 2011. Results obtained from the fixed-effects negative binomial regression model show that FDI inflows in the hotel industry significantly decreases with higher levels of business regulations, total tax rates, and wages, and increases with market size. Geographical distance and socioeconomic factors e.g. prevalence of HIV/AIDS, meanwhile, are not relevant. Comparing the number of predicted FDI projects with those actually carried out, we find that the United Kingdom, India, and Mexico received a higher number of FDI projects than predicted by the model, whereas Russia, Germany, and the United States hosted a much fewer.

Keywords: Foreign direct investment, accommodation industry, international hotel chains, negative binomial fixed-effects estimator, business regulations

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Introduction

The hotel industry is the most internationalised tourism industry, as is evidenced by its high FDI inflows and outflows and the dominance of international hotel chains (UNCTAD, 2007). According to the fDi Markets database, the largest investors include Accor, Marriott International, IHG, Starwood, Hilton, Dubai Holding, Rezidor Hotel Group, Carlson, and Shangri-La (see table 3 in the appendix). Traditionally, Europe has exhibited relatively strong FDI inflows in the hotel industry. In recent years, however, the attractiveness of EU countries as destinations for hotel-related FDI has decreased significantly. At the same time, international hotel chains are increasingly investing in emerging countries such as the China, UAE, India, Russia and Mexico, Vietnam, and Morocco, which were the top five up-and-coming destinations in terms of number of FDI projects in the accommodation industry between 2003 and 2011. Note that in this context, FDI is defined as the establishment of new foreign hotels and expansions of existing foreign investments in hotels; it does not include mergers or acquisitions.

The simultaneous occurrence of increases in FDI in emerging economies and decreases in FDI inflows into mature markets raises the question as to what the determinants of FDI inflows are in the hotel industry. Given that FDI is an important factor attracting foreign tourism flows and expenditures in the destination (Dwyer & Forsyth, 1994), it is important to investigate the main factors that draw investments to certain foreign countries.

The aim of this study is to provide new empirical analysis of the determinants of FDI flows in the hotel industry using a unique database. The empirical model is based on a FDI gravity model, which is estimated by panel count data estimators. The basic FDI gravity model is augmented by a large number of policy and non-policy factors (e.g. market size, distance, cultural factors, international tourist arrivals relative to population, corporate taxes and minimum hourly wages, and business regulation indicators and factors), factor endowments (e.g. skills and broadband penetration), and other socioeconomic factors (land surface area, prevalence of HIV/AIDS, etc).

Despite the growing interest in the determinants of FDI activity in the hotel industry, few studies have investigated the country-specific location factors in play (see, for example, Johnson & Vanetti, 2005). The literature on hotel location analysis has mainly examined destinations chosen within regions or metropolitan areas and/or across regions (Yang, Luo, & Law, 2014). Studies based on internationally comparable data on a wide range of countries

are not available. Song et al. (2012) accordingly suggest that there is a lack of comprehensive data and research in the area of foreign direct investment in the hospitality industry.

The structure of this paper is as follows: Section 2 presents the theoretical background and empirical model. Summary statistics are presented in section 3, and section 4 offers a range of empirical results. Section 5 contains some concluding remarks.

Theoretical background and empirical model

The theoretical background of the empirical model is the OLI framework developed by Dunning and McQueen (1981). The OLI framework states that FDI activity in the hotel industry can be explained by ownership, location, and internalization (OLI) advantages. Ownership advantages are those particular to the investing company. They may include superior productivity, size, innovation activities, firm specific human capital and international experience. Location advantages consist of country-specific factors such as market size and growth, cost-based considerations, FDI regulation, and other business regulation. Internalization advantages refer to the positive effects of having foreign production managed by a parent firm rather than contracting it out to a local company. While ownership and internalization advantages are firm-specific, location advantages are particular to the host country or region in question. Since parent-company characteristics cannot be accounted for, this study focuses on country-specific factors.

There are a number of studies that investigate the country-specific determinants of locations chosen for hotels. Kundu and Contractor (1999) introduce four main factors in the hotel sector: (i) market size (GDP, population), (ii) internationalisation of the host economy, (iii) the host country's business environment (political/economic/financial risk indicators), and (iv) tourism-specific factors (tourism revenues). Endo (2006) suggests that the determinants of FDI in tourism are no different from those in other industries. These determinants include cultural, historical, and geographical distance; political and/or economic risks; level of economic development; socioeconomic environment; industry privatisation and regulation of FDI regimes; cost-based factors (taxation, labour costs); investment incentives; and availability and quality of hard and soft infrastructures (e.g. electricity and water supply, transport facilities). Johnson and Vanetti (2005) suggest that home-country proximity, infrastructure and tourist attractions, market size and growth, government incentives to attract FDI, and a reputation as an attractive business destination are the main location factors for

FDI in emerging markets (in this case, in Eastern Europe). Based on a survey of international hotel groups, UNCTAD (2007) has identified a number of host-country determinants of FDI in the hotel industry. According to the survey, the most important determinants are tourism demand from developed countries, market size, and economic growth, while FDI-related regulation, FDI incentives, and geographical and cultural proximity are rated as least important. Snyman and Saayman (2009), meanwhile, list 42 host-country characteristics that may affect FDI in the tourism industry. These include political stability, infrastructure (airports, roads), health and safety (crime, malaria, HIV/AIDS), cost factors and skills, market size (international tourism demand, GDP). The same authors find that decisions of where to invest depend on the number of international tourists in the destination country. Other factors consist of tourism-specific assets (e.g. beaches, natural environment, culture). Crime and HIV/AIDS can also have a negative effect on international investment in the tourism sector: For instance, a high prevalence of AIDS and/or crime makes a country less attractive to foreign visitors (Asiedu et al., 2011; Cossens & Gin, 1995). Using data on FDI flows in the hotel sector for 67 host countries, Kundu and Contractor (1999) find that market size – measured as GDP and tourism revenues– has the most influence on choices of locations. Zhang et al. (2012) examine data on choices of hotel locations in the Chinese provinces and find that total inbound tourists, average inbound tourist spending, GDP per capita, and “mega-events” (the Olympic Games, for example) are significant factors. Other studies employ time series for a single destination country (Novak, Petrić & Pranić 2011; Steiner, 2011). For instance, using time-series data on Egypt, Steiner (2011) suggests that tourism FDI is more influenced by business regulations and host-market growth than by violent political unrest.

The origins of our empirical model – the FDI gravity model (Zwinkels & Beugelsdijk, 2010; Fratianni, Marchionne, & Oh, 2011) – lie in the physical theory of gravity. Newton’s law of universal gravitation states that the gravitational attraction between two objects is proportional to the product of their masses and inversely proportional to the square of the distance between them. In the present context, this translates into the expectation that larger economies should be home to greater FDI activity, while greater geographical distance should be associated with less FDI activity. The related literature finds that the traditional gravity factors are among the most robust determinants of FDI flows and stocks in general (Blonigen & Piger, 2011). Specifically, FDI activity decreases with the geographical distance

between host and source countries and increases with host- and source-country GDP. However, advances in ICT can moderate the role of geographical distance (Tang and Trevino, 2010). Ghemawat (2001), meanwhile, suggests that distance exists not only in geographical, but also in administrative, cultural, and economic dimensions. In particular, cultural proximity and a common language lead to lower communication and transaction costs of doing business, thereby increasing FDI flows.

Besides the gravity-related factors, the GDP per capita of host and source countries is also considered a determinant of FDI activity. FDI activity is expected to increase with both variables, reflecting the fact that FDI in the hotel industry mainly occurs between countries with a similar level of wealth and factor endowment (UNCTAD, 2007; Dunning & McQueen, 1982).

Low labour costs and corporate taxes in the host country have traditionally been a key factor in hotel groups' cross-border investments. Since the costs of setting up a completely new business often exceed the costs of acquiring an existing company, new cross border investments may be more sensitive to the cost-saving motivations than cross-border M&As (Hennart & Park, 2003). Besides cost based factors, FDI barriers in the host country are likely to discourage inward FDI because they lead to higher investment costs. FDI restrictions have many dimensions, such as legal, legislative, and regulatory frameworks; strength of investor protection; foreign ownership restrictions; and bureaucracy (Kalinova, Palerm & Thomsen, 2010). Azémar and Desbordes (2010) suggest that product market regulations in the host country may also lead to additional costs for businesses and barriers to FDI entry. Another potential FDI determinant involves property rights protection. Lee and Mansfield (1996) find that weak intellectual property protection in a given target country has a negative impact on FDI flows from the United States to that country. Likewise, Globerman and Shapiro (2003) find that countries with more transparent legal systems and better protection of property rights tend to attract more FDI from multinational US firms.

The empirical specification of the FDI gravity equation takes into consideration a wide range of potentially relevant host-country determinants of FDI. As outlined above, these variables include market size, GDP per capita, business regulation, cost-based factors (such as labour costs and corporate taxes), and FDI restrictions. The FDI gravity equation with fixed effects is specified as follows:

$$E[FDI_{ijt} | X_{ijt}] = \exp(\delta_{ij} + X_{ijt}\beta + \varepsilon_{ijt}),$$

where β represents the parameters and X_{ijt} contains the vector of independent variables:

$$X_{ijt} = \left(\ln GDPHOME_{it-1}, \ln GDPHOST_{jt-1}, \ln DIST_{ij}, \ln GDPCAPHOME_{it-1}, \ln GDPCAPHOST_{jt-1}, Z_{1jt-1}, Z_{2ij}, \lambda_t, \alpha_{ij} \right)$$

Here, i is the home country, j is the host country, t refers to the year, and \ln is the natural logarithm. α_{ij} denotes the fixed parent host country effects and λ_t the time dummy variables.

The variables are defined as follows:

FDI_{ijt} is the number of bilateral FDI projects in the hotel sector;

$GDPHOME_{it-1}$ and $GDPHOST_{jt-1}$ represent home- and host-country GDP in constant USD;

$DIST_{ij}$ is the geographical distance between the capital cities of the investing and host countries;

$GDPCAPHOME_{it-1}$ and $GDPCAPHOST_{jt-1}$ represent home- and host-country GDP in constant USD;

Z_{1jt-1} represents a set of time-varying variables for the respective host countries, including:

- Statutory tax rates (alternatively, the total tax rate on businesses as a percentage of profits)
- Minimum hourly wages
- Business regulation indicators such as time and cost to import, time and cost to start a business as a percentage of income per capita, and time and cost to enforce contracts
- FDI regulatory restrictiveness index
- Strength of legal rights index and strength of investor protection index
- Fixed broadband internet subscribers
- Other safety-, risk-, and health-related factors (life expectancy, AIDS/HIV prevalence, etc)

Z_{2ij} represents the time-invariant control variables:

- Contiguity
- Sharing a common language
- Sharing an historical colonial link.

The dependent variable – the number of FDI projects in the hotel industry – is a count variable. The distribution of the number of FDI projects is strongly skewed to the right, with an accumulation of observations at zero and a significant degree of overdispersion (i.e. the variance considerably exceeds the mean). The most common estimators used for count variables are the Poisson regression and the negative binomial models, the latter being an extension of the former (Cameron & Trivedi, 1998). The negative binomial model is commonly suggested as the preferred estimator because it is less restrictive than the Poisson model. This holds particularly true when the data exhibits a high degree of overdispersion. In our case, more than 95 per cent of the observations are at zero. We use the conditional fixed-effects negative binomial estimator for panel data, which is used in most of the patent literature on overdispersed count data (Hausman, Hall & Griliches, 1984). Note that this estimator makes it possible to include time-invariant variables, such as distance and sharing a common language. As Allison and Waterman (2002) show, however, the fixed-effects negative binomial estimator is not a true fixed-effects estimator because it does not necessarily control for all unit-specific effects (unlike the standard linear fixed-effects model).

Dataset and descriptive statistics

The investment data is derived from the fDi Markets database, which contains a register of some 120,000 investment projects around the world for the period 2003-2012. The fDi Markets database is used by UNCTAD in its World Investment Report and also widely cited in the related academic literature (Hahn, Bunyaratavej & Doh 2011; Di Minin & Zhang, 2010). In particular, the fDi Markets database defines FDI activity as the establishment of a new foreign enterprise or the expansion of an existing foreign investment. However, cross-border mergers and acquisitions are not covered. The FDI project information is derived from media sources and can be interpreted as investment commitments. The database also contains information on the types of FDI projects, categorised by function, cluster, parent company name and national origin, destination country, number of jobs generated, and amount of capital flow. Since the amounts FDI flows involve and the corresponding number of jobs they generate are based on crude estimates, we use the number of FDI projects as our dependent variable.

In our analysis, we include data on 2,417 FDI projects in the hotel industry. Following aggregation across source-destination pairs, we end up with bilateral FDI data for 104 host countries and 50 parent countries. The data refers to the period 2003-2011 for the descriptive statistics and 2005-2011 for the regression model. Figures 1 to 3 in the appendix document the patterns of international investment in the hospitality industry across the host and home countries. Figure 1 shows the number of foreign direct investment projects in the accommodation industry by country for the top 20 destination countries based on the aforementioned 2,147 projects. One can see that China, the United Kingdom, the United Arab Emirates, India, and Russia are the top five locations for international investment in the hospitality industry, accounting for almost one-third of investment projects worldwide. It is interesting to note that emerging countries receive a large portion of international investment in the hotel industry, as UNCTAD (2007) suggests that FDI in hotel and accommodation is concentrated in the developed countries. At the city level, one can see that Dubai received the largest number of FDI projects in the hotel industry, followed by Shanghai, London, Beijing, Berlin, Hong Kong, and Singapore (figure 2 in the appendix). Turning to the source countries, one can see that the United States is the largest investor, with about 25 per cent of all FDI projects in the accommodation industry (figure 3 in the appendix). This confirms several previous findings (UNCTAD, 2007; Dunning & McQueen, 1982). Table 2 in the appendix lists the hotel groups with the largest number of FDI projects. Of the top 20 investing hotel chains, 16 are located in Western high-income countries. Exceptions include Dubai Holding, Rotana Hotels (both United Arab Emirates), Shangri-La (Hong Kong) and Banyan Tree (Singapore). Table 5 in the appendix provides descriptive statistics for the explanatory variables.

Research findings

Table 1 shows the results of the fixed-effects negative binomial estimator, where the fixed effects are parent-host country pairs.¹ The results are based on between 2,500 and 4,000 observations for around 520 such pairs for the period 2005-2011. The table also includes the marginal effects, assuming that the fixed effect is zero. Four specifications are provided: (i)

¹ We use the `xtnbreg` command in STATA with the `fe` and `re` option to fit our data to the conditional fixed-effects negative binomial model.

includes host- and home-country GDP per capita, along with gravity factors, total tax rate, and the cost of enforcing contracts as an indicator of business regulation; (ii) excludes GDP per capita; (iii) includes minimum hourly wages; and (iv) uses the time required to enforce contracts as an alternative indicator of business regulation.

Note that a number of host-country factors are excluded from the final specification because they are not significant at conventional levels (see table 4 in the appendix). In particular, AIDS/HIV prevalence, life expectancy, corporate taxes, and strength of legal rights in obtaining credit are each not significantly different from zero.

The results show that a common language, the log of host- and parent-country GDP, business regulation (measured either as the time required to start a business or the cost of enforcing contracts), and hourly wage costs (measured as the minimum wage) play a significant role in determining the number of cross-border investment projects in the hospitality industry. Furthermore, the time dummies are significant for the years 2008 and 2011. One can see that the number of FDI projects in the accommodation industry peaked in 2008 at a level between 40 and 50 per cent higher than the reference year (2005). In 2011, however, the number of hospitality-related FDI projects declined significantly, turning out 15 to 20 per cent lower than the reference year.

Minimum hourly wages in the host country also have a considerable impact. Surprisingly, the corporate tax rate in the host country does not have an impact and is therefore not included in the final specification. This stands in contrast to the literature (see the recent meta-analysis by Feld & Heckemeyer, 2011). When taxes are measured as the total taxes (relative to profits) there is a significant and negative impact.

One of this study's key findings, meanwhile, is the significance of business regulation indicators: We find that the time associated with enforcing contracts and their costs have a strong influence on FDI inflows into the hospitality industry. The more time is needed to enforce a contract in a given host country, the lower the level of FDI activity in that country's hospitality industry will be. Note that the time and cost of enforcing contracts differ widely across countries, ranging from very low levels in Anglo-American, Scandinavian countries, and Asian countries (Hong Kong and Singapore) to relatively high levels in some South American and African countries. Our other main conclusion is that FDI activity in the hotel sector exhibits a significant and negative dependence on the ratio of total taxes to profits.

The marginal effects show that a 10-percentage-point increase in the cost of enforcing contracts will lead to three fewer FDI projects. An increase in the minimum hourly wage by 10 per cent, meanwhile, will reduce the expected number of FDI projects by 1.3. Finally, a rise in tax rates by one percentage point will lead to a decline of the number of FDI projects by 1.8 percentage points.

Table 1: Fixed-effects negative binomial regression model of the determinants of the FDI projects in the hotel sector

| | (i) | | | | (ii) | | | |
|--|------------|-------|-----------|-------|------------|-------|-----------|-------|
| | coef. | z | m.e. | Z | coef. | z | m.e. | z |
| ln geographical distance | -0.08 | -0.46 | -0.07 | -0.47 | -0.04 | -0.27 | -0.04 | -0.28 |
| common language | 0.97 ** | 2.27 | 1.18 | 1.55 | 1.01 ** | 2.42 | 1.30 | 1.64 |
| host ln GDP (cons 2000 US\$) | 0.15 | 1.32 | 0.14 | 1.42 | 0.17 | 1.61 | 0.16 * | 1.74 |
| parent ln host GDP (co 2000 US\$) | 0.32 *** | 2.63 | 0.30 ** | 2.39 | 0.33 *** | 2.76 | 0.32 ** | 2.51 |
| host ln GDP per cap. (const int US\$) | -0.08 | -0.37 | -0.07 | -0.38 | | | | |
| parent ln GDP per cap. (co int US\$) | 0.39 | 1.00 | 0.36 | 0.99 | | | | |
| host cost of enforcing contracts in % | -3.24 ** | -2.17 | -2.97 ** | -1.96 | -2.97 ** | -2.08 | -2.84 * | -1.87 |
| host taxes in % of profits | -1.97 ** | -2.17 | -1.80 ** | -2.00 | -1.88 ** | -2.37 | -1.80 ** | -2.07 |
| year dummy 2008 (ref 2007) | 0.49 *** | 5.08 | 0.52 ** | 3.18 | 0.50 *** | 5.16 | 0.56 *** | 3.24 |
| year dummy 2009 | 0.07 | 0.63 | 0.06 | 0.61 | 0.07 | 0.63 | 0.06 | 0.61 |
| year dummy 2010 | -0.10 | -0.93 | -0.09 | -0.95 | -0.12 | -1.06 | -0.11 | -1.08 |
| year dummy 2011 | -0.59 *** | -4.62 | -0.46 | -3.86 | -0.60 *** | -4.79 | -0.49 *** | -3.96 |
| Constant | -14.03 *** | -2.91 | | | -11.69 *** | -3.05 | | |
| # of observations | 2547 | | | | 2552 | | | |
| # of parent-host country groups | 515 | | | | 516 | | | |
| Log likelihood | -1320 | | | | -1324 | | | |
| | (iii) | | | | (iv) | | | |
| | coef | z | m.e. | z | coef | z | m.e. | z |
| ln geographical distance | -0.28 ** | -2.16 | -0.14 ** | -2.21 | -0.05 | -0.41 | -0.03 | -0.41 |
| common language | 0.69 *** | 2.62 | 0.42 ** | 2.10 | 0.48 * | 1.85 | 0.36 | 1.59 |
| host ln GDP (cons 2000 US\$) | 0.22 *** | 3.22 | 0.11 *** | 3.41 | 0.16 *** | 2.63 | 0.11 *** | 2.79 |
| parent ln host GDP (const 2000 US\$) | 0.31 *** | 3.94 | 0.15 *** | 4.01 | 0.24 *** | 3.10 | 0.16 *** | 3.11 |
| host cost of enforcing contracts in % | -3.98 *** | -3.39 | -1.95 *** | -3.18 | | | | |
| host ln time of enforcement of contracts | | | | | -0.50 ** | -2.08 | -0.33 * | -1.95 |
| hourly minimum wages | -0.26 ** | -2.32 | -0.13 ** | -2.33 | | | | |
| year dummy 2006 (ref 2005) | 0.00 | -0.02 | 0.00 | -0.02 | 0.02 | 0.20 | 0.02 | 0.20 |
| year dummy 2007 | 0.19 | 1.57 | 0.10 | 1.44 | 0.19 * | 1.66 | 0.13 | 1.52 |
| year dummy 2008 | 0.66 *** | 5.92 | 0.42 *** | 3.88 | 0.66 *** | 6.20 | 0.56 *** | 4.08 |
| year dummy 2009 | 0.25 *** | 2.07 | 0.13 * | 1.82 | 0.24 ** | 2.16 | 0.18 * | 1.91 |
| year dummy 2010 | 0.03 | 0.23 | 0.01 | 0.22 | 0.08 | 0.68 | 0.05 | 0.66 |
| year dummy 2011 | -0.34 ** | -2.47 | -0.15 *** | -2.67 | -0.37 *** | -2.84 | -0.21 *** | -3.05 |
| Constant | -11.75 *** | -4.68 | | | -7.65 *** | -2.87 | | |
| # of observations | 3736 | | | | 4218 | | | |
| # of parent-host country groups | 547 | | | | 617 | | | |
| Log likelihood | -1835 | | | | -2097 | | | |

Notes: Significance levels: *** is .01, ** is .05, and * is .10. The underlying dependent variable is the number of FDI projects from parent I to host country j in the hospitality industry for the period 2005-2011.

While business regulation, the total tax rate, and the minimum wage are significant, it is difficult to compare their marginal effects directly because the variables are scaled differently (logs or shares). To get a better sense of the magnitudes at hand, we also calculate the marginal effects of a one-standard-deviation increase in right-hand variables. Unreported results show that business regulations have the greatest impact, followed by total tax rate.

Regarding the gravity factors, one can see that host country GDP exhibit the expected sign (based on specifications (iii) and (iv) with a larger amount of observations). This indicates that market size is significant factor of attracting FDI in the hospitality industry. However, the magnitude of the market size is rather small, as indicated by the marginal effect. The coefficient of the logarithm of source-country GDP is also positive and significant, indicating that the level of a given source country's international investment in hotel projects in one of the 104 host countries increases with the source country's size. The coefficient of the log GDP per capita of the host and home countries is not significantly different from zero at conventional levels. This indicates that FDI activity in the hospitality industry is not concentrated in richer countries. The coefficient of geographical distance is negative, but not significantly different from zero. While bilateral investments are higher when two countries share the same language, related cultural factors such as sharing a border and having an historical colonial link do not have an impact.

The estimates can be used to compare the predicted and actual numbers of FDI projects in the hotel industry, with the predicted number indicating FDI potential. One can see, for example, that the United Kingdom received a larger number of FDI projects than predicted by the model. While this may be related to the effect of the 2012 Olympics, the number of FDI projects in India is much higher than predicted by the gravity model. Conversely, the number of projects in highly developed countries is much lower than predicted by the count data model. In particular, United Kingdom, India, and Mexico received a higher number of FDI projects than predicted by the model, whereas Russia, Germany, and the United States hosted a much fewer.

Table 2: Comparison of predict and actual FDI projects, 2005-2011

| | predicted | actual | | predicted | actual | | predicted | actual |
|-----|-----------|--------|-----|-----------|--------|-----|-----------|--------|
| CHN | 223 | 161 | AUS | 28 | 9 | URY | 8 | 2 |
| RUS | 163 | 86 | SAU | 25 | 34 | LUX | 7 | 2 |
| DEU | 150 | 60 | NGA | 24 | 7 | PAN | 6 | 15 |
| USA | 128 | 45 | JPN | 24 | 7 | MDA | 5 | 1 |
| GBR | 116 | 184 | CRI | 22 | 11 | LCA | 5 | 2 |
| MAR | 74 | 49 | CZE | 21 | 17 | DNK | 5 | 3 |
| FRA | 73 | 28 | PAK | 21 | 5 | AZE | 5 | 2 |
| IND | 71 | 102 | GRC | 20 | 10 | LTU | 5 | 4 |
| BEL | 63 | 7 | NLD | 19 | 8 | CHL | 5 | 2 |
| CHE | 51 | 15 | UKR | 17 | 24 | WSM | 4 | 1 |
| ESP | 51 | 38 | SYR | 15 | 11 | ATG | 4 | 1 |
| HUN | 50 | 26 | SVK | 14 | 5 | MKD | 4 | 3 |
| THA | 49 | 29 | GEO | 13 | 7 | SEN | 4 | 4 |
| POL | 49 | 21 | LBN | 13 | 12 | LAO | 4 | 2 |
| VNM | 47 | 42 | JOR | 12 | 13 | TJK | 3 | 1 |
| HRV | 47 | 15 | LKA | 12 | 6 | HND | 3 | 2 |
| ITA | 47 | 36 | LVA | 12 | 12 | SVN | 3 | 1 |
| CAN | 45 | 21 | KOR | 11 | 2 | AGO | 3 | 3 |
| BRA | 44 | 18 | KAZ | 11 | 4 | ARM | 3 | 1 |
| PHL | 40 | 7 | NZL | 11 | 4 | ZMB | 3 | 2 |
| NOR | 39 | 9 | EST | 11 | 6 | SDN | 3 | 1 |
| MEX | 39 | 60 | DOM | 11 | 13 | BHS | 2 | 2 |
| OMN | 39 | 27 | COL | 10 | 12 | ALB | 2 | 2 |
| HKG | 37 | 10 | BLR | 10 | 4 | VEN | 2 | 1 |
| ROM | 35 | 20 | ARG | 10 | 6 | BIH | 2 | 1 |
| TUR | 34 | 32 | IRQ | 10 | 3 | MLI | 2 | 1 |
| TUN | 34 | 12 | SWE | 9 | 5 | TCD | 1 | 1 |
| DZA | 33 | 11 | QAT | 9 | 12 | MRT | 1 | 1 |
| IRL | 32 | 27 | MUS | 9 | 2 | PRY | 1 | 1 |
| TZA | 31 | 5 | BHR | 9 | 6 | CYP | 1 | 1 |
| PRT | 30 | 18 | GTM | 9 | 2 | UGA | 1 | 2 |
| MYS | 30 | 14 | ISR | 9 | 1 | MNG | 1 | 1 |
| BGR | 30 | 30 | PER | 9 | 8 | IDN | 0 | 12 |
| ZAF | 29 | 14 | NIC | 8 | 2 | KHM | 0 | 1 |
| KWT | 28 | 7 | KEN | 8 | 2 | MOZ | 0 | 2 |

Notes: The predicted number of FDI projects in the hotel industry is based on the fixed effects negative binomial estimates of specification.

Conclusions and implications

In this paper, we investigate the determinants of FDI activity in the hospitality industry using a new and unique database of 2,420 FDI projects around the world. The empirical model is based on the FDI gravity model and estimated by the fixed-effects negative binomial regression model. The results show that bilateral FDI activity in the accommodation industry is significantly and positively related to the size of the home and source countries, and also significantly higher between countries that share a common language. A key finding of the study is that business regulations and the total tax to profits ratio have a strong negative impact on bilateral FDI activity in the hotel industry. Furthermore, hourly wages play a significant role in influencing international investment projects in new hotels. The

geographical distance between host and parent countries, however, does not affect FDI activity in the hotel sector. Other factors such as international tourism revenues (relative to GDP) and socioeconomic factors such as prevalence of HIV and life expectancy do not play a role. Overall, the results on the determinants of FDI activity in the hospitality industry do not differ much from those obtained for total FDI flows. However, a new empirical finding is that geographical distance is not a factor determining FDI flows in the hospitality industry unlike for total FDI flows.

The results of this study have important implications for tourism policy makers. Given that the degree of business regulation and total tax rates play a significant role in attracting FDI in the accommodation industry, reducing the regulatory burden on new businesses and avoiding tax increases should be a key goal. This holds particularly true for some African and South American countries that are characterised by a high degree of business regulations and tax rates.

This paper is subject to several limitations. First, it focuses solely on equity investment, while the major mode of entry is non-equity participation – franchising, management contracts, and leasing, for example, which are not covered in the FDI statistics (Dunning & McQueen, 1982; Barrowclough, 2007). Given that equity participation is the predominant entry mode in developed countries, international hotel chains' true level of activity in developing and emerging countries is underestimated. Second, FDI projects are defined as new investments and expansions of existing ones, which does not include cross-border mergers and acquisitions.

With regard to possible future work, the count data model could be re-estimated for different subsamples (distinguishing between industrialised and emerging host and/or parent countries). Another avenue could involve estimating location choice models at the firm level. In particular, logit or nested logit models of hotel location choices can be used. However, this would require additional data on parent companies (read: hotel chains), such as size, age, and previous performance. In principle, the fDi Markets data can be matched with a commercial databases such as Orbis.

Literature

- Allison, P. D., & Waterman, R. P. (2002). Fixed-effects negative binomial regression models. *Sociological Methodology*, 32, 247–265.
- Asiedu, E., Jin, Y., & Kanyama, I. (2011). *The Impact of HIV/AIDS on Foreign Direct Investment in Developing Countries*, University of Kansas, mimeo.
- Azemar, C., & Desbordes, R. (2010). Short-run Strategies for Attracting Foreign Direct Investment. *The World Economy*, 33(7), 928–957.
- Barrowclough, D. (2007). Foreign investment in tourism and small island developing states. *Tourism Economics*, 13(4), 615–638.
- Blonigen, B.A., & Piger, J. (2011). *Determinants of Foreign Direct Investment*. NBER Working Papers 16704, National Bureau of Economic Research.
- Cameron, A.C., & P.K. Trivedi (1998). *Regression Analysis of Count Data*, New York: Cambridge University Press
- Cossens, J., & Gin, S. (1995). Tourism and AIDS: The perceived risk of HIV infection on destination choice. *Journal of Travel & Tourism Marketing*, 3(4), 1–20.
- Di Minin, A., & Zhang, J. (2010). An Exploratory Study on International R&D Strategies of Chinese Companies in Europe. *Review of Policy Research*, 27, 433–455.
- Dunning, J. H., & Kundu, S. K. (1995). The internationalization of the hotel industry: some new findings from a field study. *MIR: Management International Review*, 101–133.
- Dunning, J. H., & McQueen, M. (1981). The eclectic theory of international production: a case study of the international hotel industry. *Managerial and Decision Economics*, 2(4), 197–210.
- Dunning, J.H., & McQueen M. (1982). Multinational corporations in the international hotel industry. *Annals of Tourism Research* 9(1), 69–90.
- Dwyer, L., & Forsyth, P. (1994). Foreign tourism investment: motivation and impact. *Annals of Tourism Research*, 21(3), 512–537.
- Endo, K. (2006). Foreign direct investment in tourism—flows and volumes, *Tourism Management* 27, 600–614.
- Feld, L., & Heckemeyer, J.H. (2011). FDI and Taxation: A Meta-Study. *Journal of Economic Surveys*, 25, 233–272.
- Fratianni, M., Marchionne, F., & Oh, C. H. (2011). Commentary on the gravity equation in international business. *Multinational Business Review*, 19, 36–46.
- Ghemawat, P. (2001). Distance Still Matters: The Hard Reality of Global Expansion. *Harvard Business Review* 79(8), 137–147.
- Globerman, S., & Shapiro, D. (2003). Governance infrastructure and US foreign direct investment. *Journal of International Business Studies*, 34, 19–39.
- Hahn, E.D., Bunyaratavej, K. & Doh, J.P. (2011). Impacts of risk and service type on nearshore and offshore investment location decisions: An empirical approach. *Management International Review*, 51(3), 357–380.
- Hausman, J.A., Hall B.H., & Griliches, Z. (1984). Econometric models for count data with an application to the patents-R&D relationship. *Econometrica*, 52(4), 909–938.
- Hennart JF, & Park YR. (1993). Greenfield vs. acquisition: the strategy of Japanese investors in the United States. *Management Science*, 39, 1054–1070.
- Johnson, C. & Vanetti M. (2005). Locational strategies of international hotel chains. *Annals of Tourism Research*, 32(4), 1077–1099.
- Kalinova, B., Palerm, A., & Thomsen, S. (2010). *OECD's FDI Restrictiveness Index: 2010 Update*. OECD Working Papers on International Investment, No. 2010/3.
- Kundu, S. K., & Contractor, F. J. (1999). Country location choices of service multinationals: An empirical study of the international hotel sector. *Journal of International Management*, 5(4), 299–317.
- Lee, J. Y. & Mansfield E. (1996). Intellectual Property Rights Protection and U.S. Foreign Direct Investment. *Review of Economics and Statistics*, 79, 181–186.

- Novak, M., Petrić, L., & Pranić, L. (2011). The effects of selected macroeconomic variables on the presence of foreign hotels in Croatia. *Tourism and Hospitality Management*, 17(1), 45-65.
- Snyman, J. A., & Saayman, M. (2009). Key factors influencing foreign direct investment in the tourism industry in South Africa. *Tourism Review*, 64(3), 49-58.
- Song, H., Dwyer, L., Li, G., & Cao, Z. (2012). Tourism economics research: A review and assessment. *Annals of Tourism Research*, 39(3), 1653–1682.
- Steiner, C. (2010). An overestimated relationship? Violent political unrest and tourism foreign direct investment in the Middle East. *International Journal of Tourism Research*, 12(6), 726-738.
- Tang, L., & Trevino, L.J. (2010). ICT development and the regional vs. global strategies of MNEs. *Multinational Business Review*, 18(4), 51–70.
- United Nations Conference on Trade and Development (UNCTAD). (2007). *Fdi in Tourism: The Development Dimension*. UN.
- Yang, Y., Luo, H., & Law, R. (2014). Theoretical, empirical, and operational models in hotel location research. *International Journal of Hospitality Management*, 36, 209-220.
- Zhang, H.Q, Guillet B.D, & Gao W. (2012). What determines multinational hotel groups' locational investment choice in China?, *International Journal of Hospitality Management*, 31, 2, 350-359.
- Zwinkels, R.C.J., & Beugelsdijk, S. (2010). Gravity Equations: Workhorse or Trojan Horse In Explaining Trade and FDI Patterns Across Time and Space? *International Business Review*, 19(1), 482–497.

Appendix

The set of host countries include: AGO, ALB, ARG, ARM, ATG, AUS, AUT, AZE, BEL, BGR, BIH, BLR, BRA, CAN, CHE, CHL, CHN, COL, CPV, CRI, CZE, DEU, DNK, DOM, DZA, EGY, ESP, EST, FIN, FJI, FRA, GBR, GEO, GRC, GTM, HKG, HND, HRV, HUN, IDN, IND, IRL, IRQ, ISR, ITA, JOR, JPN, KAZ, KEN, KHM, KOR, KWT, LAO, LBN, LKA, LTU, LVA, MAR, MDA, MDV, MEX, MKD, MLI, MOZ, MUS, MYS, NGA, NIC, NLD, NOR, NZL, OMN, PAK, PAN, PER, PHL, POL, PRT, ROM, RUS, RWA, SAU, SDN, SEN, SGP, SVK, SVN, SWE, SYC, SYR, THA, TUN, TUR, TZA, UGA, UKR, URY, USA, VEN, VNM, WSM, YEM, ZAF and ZMB.

The set of parent countries include: ARE, AUS, AUT, BEL, BRA, CAN, CHE, CHN, COL, CZE, DEU, EGY, ESP, EST, FIN, FRA, GBR, GRC, HKG, HUN, IDN, IND, IRL, ISR, ITA, JOR, JPN, KOR, KWT, LTU, LUX, MEX, MLT, MYS, NLD, NOR, NZL, PRT, QAT, RUS, SAU, SGP, SWE, THA, TUR, UKR, USA, VEN, VNM and ZAF.

Table 3: Number of FDI projects in the hospitality industry by parent company 2003-2011

| | country | # of FDI projects | | country | # of FDI projects |
|-------------------------------------|---------|-------------------|---------------------------------------|---------|-------------------|
| Accor | FR | 217 | Four Seasons Hotels & Resorts | CA | 38 |
| Marriott International | US | 133 | Hyatt International | US | 35 |
| InterContinental Hotels Group (IHG) | US | 130 | Melia Hotels International | ES | 32 |
| Starwood Hotels & Resorts | US | 123 | Fairmont Raffles Hotels International | CA | 31 |
| Hilton Hotels (Hilton Worldwide) | US | 105 | Grupo Iberostar | ES | 31 |
| Dubai Holding | UA | 99 | Hotusa | ES | 28 |
| Rezidor Hotel Group | BE | 99 | Banyan Tree | SG | 25 |
| Carlson Companies | US | 88 | Kempinski Hotels & Resorts | CH | 24 |
| Shangri-La Hotels and Resorts | HK | 47 | Movenpick Group (Moevenpick) | CH | 23 |
| NH Hotels (NH Hoteles) | ES | 45 | Rotana Hotels | UA | 22 |

Source: FDImarkets data.

Table 4: Fixed-effects negative binomial regression model of the determinants of the FDI projects in the hotel sector

| | ln dist. | comm language | ln host GDP | ln home GDP | enforcing contracts | International tourism receipts % GDP | Constant | # of obs | # of groups |
|-------|----------|---------------|-------------|-------------|---------------------|--------------------------------------|----------|----------|-------------|
| coef. | -0.01 | 0.47 | 0.17 | 0.24 | -3.58 | 1.72 | -10.76 | 4183 | 608 |
| Z | -0.12 | 1.80 | 2.34 | 3.12 | -3.49 | 1.16 | -4.16 | | |
| | ln dist. | comm language | ln host GDP | ln home GDP | enforcing contracts | broadband per 100 people | Constant | | |
| coef. | 0.12 | 0.50 | 0.14 | 0.24 | -4.03 | -5.45 | -9.55 | 4146 | 612 |
| Z | 0.80 | 1.92 | 2.19 | 3.06 | -3.63 | -0.84 | -4.04 | | |
| | ln dist. | comm language | ln host GDP | ln home GDP | enforcing contracts | corporate taxes | Constant | | |
| coef. | -0.03 | 0.55 | 0.17 | 0.23 | -3.44 | -0.89 | -10.24 | 3887 | 586 |
| Z | -0.22 | 2.02 | 2.31 | 2.95 | -3.23 | -0.89 | -4.02 | | |
| | ln dist. | comm language | ln host GDP | ln home GDP | enforcing contracts | ln cost to import | Constant | | |
| coef. | -0.06 | 0.87 | 0.06 | 0.32 | -3.67 | 0.04 | -9.99 | 2554 | 517 |
| Z | -0.37 | 2.23 | 0.62 | 2.65 | -2.27 | 0.15 | -2.55 | | |
| | ln dist. | comm language | ln host GDP | ln home GDP | enforcing contracts | prevalence of HIV % of population | Constant | | |
| coef. | -0.12 | 0.67 | 0.15 | 0.18 | -2.77 | -6.88 | -7.69 | 3227 | 470 |
| Z | -0.91 | 2.10 | 2.08 | 1.99 | -2.54 | -1.20 | -2.87 | | |
| | ln dist. | comm language | ln host GDP | ln home GDP | enforcing contracts | ln life expectancy | Constant | | |
| coef. | -0.03 | 0.52 | 0.14 | 0.24 | -4.03 | -1.25 | -4.19 | 4213 | 616 |
| Z | -0.27 | 2.00 | 2.12 | 3.14 | -3.60 | -0.74 | -0.57 | | |

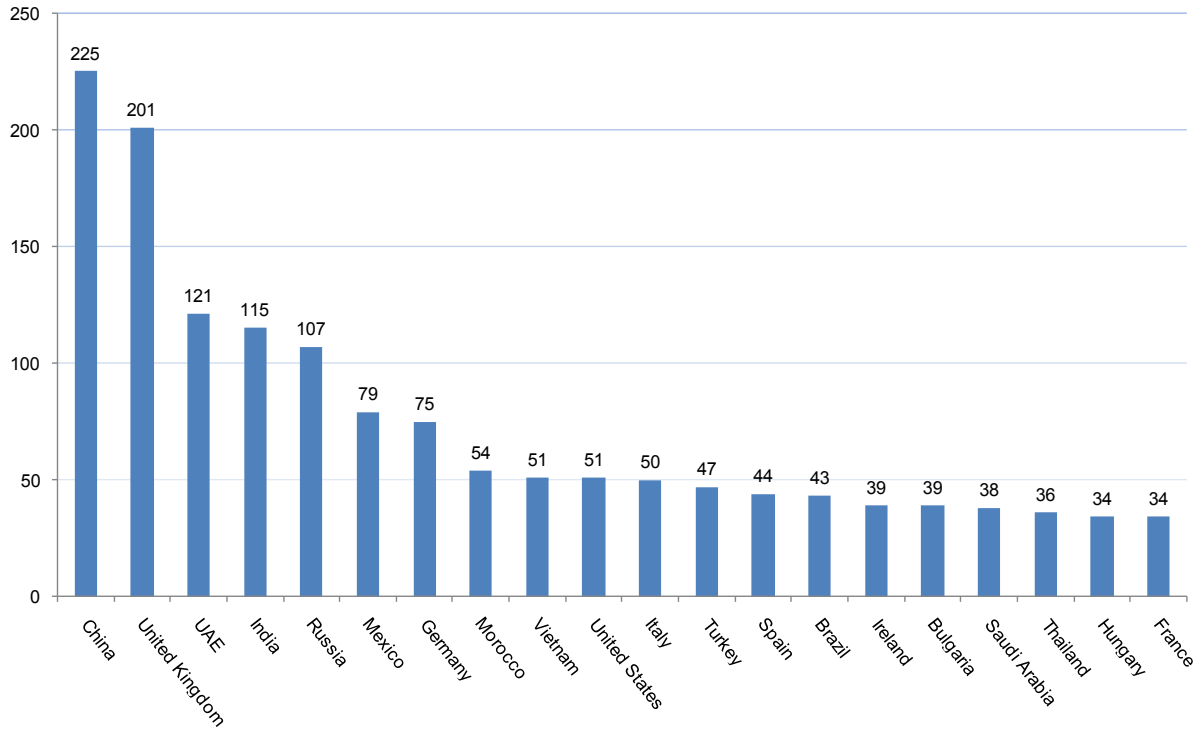
Notes: Significance levels: *** is .01, ** is .05, and * is .10.

Table 5: Descriptive statistics

| | mean | st. Dev | min | max |
|--|--------|---------|-------|----------|
| ln geographical distance | 5083 | 4141 | 60 | 19264 |
| common language | 0.23 | | | |
| host ln GDP (cons 2000 US\$) | 610000 | 1620000 | 314 | 11700000 |
| GDP per capita in international \$ | 18465 | 15256 | 670 | 77987 |
| international tourism receipts % GDP | 5.4 | 9.8 | 0.1 | 94.8 |
| international arrivals per population in % | 0.8 | 2.4 | 0.1 | 17.3 |
| broadband per 100 people | 10.2 | 10.4 | 0.0 | 40.0 |
| life expectancy in years | 73.7 | 6.8 | 44.4 | 85.2 |
| hourly min wages in US-\$ | 3.1 | 4.0 | 0.0 | 19.0 |
| corporate tax rate in % | 24.4 | 9.5 | 0.0 | 55.0 |
| prevalence of HIV % of population 15-49 | 0.8 | 2.4 | 0.1 | 17.3 |
| time of enforcement of contracts in days | 555.3 | 263.6 | 120.0 | 1459.0 |
| cost of enforcing contracts in % | 25.7 | 17.7 | 8.8 | 142.5 |
| time to register property in days | 56.7 | 83.5 | 1.0 | 956.0 |
| getting credit strength of legal rights index (0-10) | 5.8 | 2.5 | 0.0 | 10.0 |
| time to import in days | 20.3 | 14.0 | 4.0 | 102.0 |
| costs of importing in \$ | 1151.5 | 609.7 | 317.0 | 6345.0 |
| time to start a business in days | 28.2 | 25.4 | 1.0 | 153.0 |
| costs of starting a business in % of income | 21.3 | 46.1 | 0.0 | 910.0 |

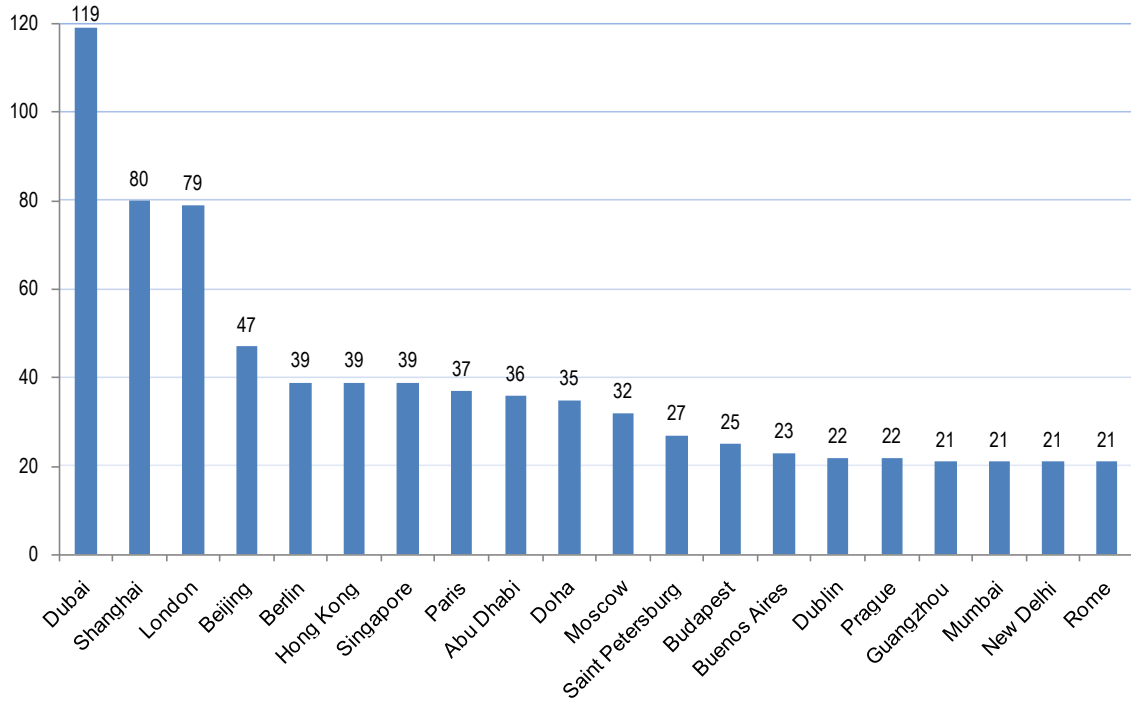
Source: World Bank development indicators, Doing a business indicators.

Figure 1: Number of FDI projects in the hotel industry by host countries 2003-2011



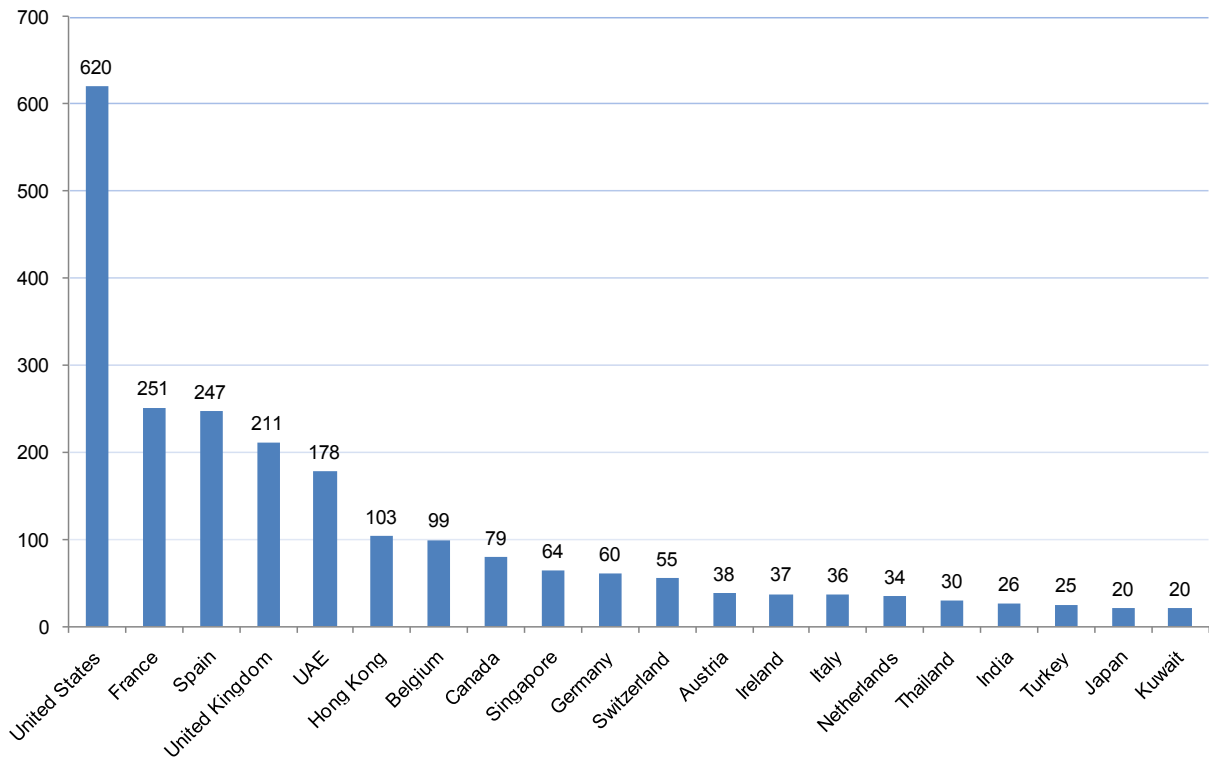
Source: FDImarkets data.

Figure 2 Number of FDI projects the accommodation industry by host cities 2003-2011



Source: FDImarkets data.

Figure 3 Number of FDI projects in the hospitality industry by source countries 2003-2011



Source: FDImarkets data.