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**Corruption, institutional setting and FDI: does the use
of distinct proxies matter?**

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Abstract

Foreign direct investment (FDI) has a critical role, especially in the developing economies. The role and the impact of institutional quality, in general, and corruption, in particular, on FDI inflows has been reasonably studied by several authors, with the most common conclusion being that corruption impacts significantly and negatively on FDI. In this work, we review the relevant literature on FDI determinants, highlighting the issue of corruption and institutional quality. Most of the existing studies test corruption and institutional quality in isolation and, in the majority of cases use a single proxy for corruption and institutional quality. It is acknowledged, however, that the use of distinct proxies might result on distinct coefficients of the estimates (both in magnitude and statistical significance).

Given that corruption and institutional quality can be proxied by a myriad of different indicators (Corruption Perception Index, Bribery Index, Risk Index, to name but a few), this dissertation's main goals are twofold: 1) to assess the extent to which the use of distinct corruption proxies provides different evidence regarding the relation between this latter variable and FDI; and 2) to assess the extent to which the use of a given proxy for corruption, controlling for other indicators of institutional quality, reveals the usual negative relation between corruption and FDI.

In order to accomplish these goals we resort to the estimation of multivariate econometric models using a broad sample of over a hundred countries in the period 2000-2010.

Results convey that the use of distinct proxies for corruption does yield to distinct results on the impact of this latter variable on countries' FDI flows, with Bribery index emerging statistically significant related to FDI whereas Corruption Perception Index (CPI) and Global Corruption Barometer (GCB) not. Moreover, in contrast of using Corruption Perception Index (CPI) in isolation, when we control for other indicators of institutional quality (e.g., Human Development Index, Economic Freedom Index, Business Freedom Index, Ease Doing Business), that corruption proxy becomes statistically significant.

Keywords: Foreign direct investment (FDI); Corruption; Institutional Quality; Proxies

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Acronyms

BERD	Business Expenditure on Research and Development
BPI	Bribery Payers Index
CPI	Corruption Perception Index
DB	Doing Business
FDI	Foreign Direct Investment
GCB	Global Corruption Barometer
GDP	Gross Domestic Product
GDP PH	Gross Domestic Product per Head
ILO	International Labor Organization
OECD	Organization for Economic Cooperation and Development
R&D	Research and Development
TI	Transparency International
UN	United Nations
WB	World Bank

Introduction

Foreign direct investment (FDI) plays a key role, in the global economy in general, and in the economic development of the recipient countries in particular (Habib and Zurawicki, 2001; Blonigen, 2005). The FDI inflows, measured by indicators such as Gross Domestic Product (GDP), development rates, balance of payments, etc., contributes positively and in a crucial way to economic performance, especially in the less developed countries (Habib and Zurawicki, 2001).

The literature traditionally refers to several factors, namely market size and dynamics, human capital, innovation capabilities, economic stability, and the quality of institutions (incl. corruption) (Habib and Zurawicki, 2001; Blonigan, 2005; Wu, 2006; Faeth, 2009) as important determinants of FDI inflows. Studies on FDI that includes corruption and/or countries' institutional 'quality' are relatively scarce albeit being on growing.

Although in a general way, the authors agree that high indexes of corruption (low institutional quality) would increase risk and economic uncertainty and, therefore, decrease FDI inflows (e.g., Habib and Zurawicki, 2001; Bitzenis *et al.*, 2009; Uhlenbruck *et al.*, 2006), it is important to underline that findings in these studies are not consensual regarding the impact of corruption on FDI. For instance, recent studies that link FDI with corruption which focus on BRICs (Brazil, Russia, India and China) or some other focusing less developed countries, such as Thailand, Argentina, or Poland, demonstrate that although corruption in these countries are relatively high, they are still attracting huge amounts of FDI (Habib and Zurawicki, 2001; Blonigen, 2005; Cuervo-Cazurra, 2008). Moreover, although sparse, there are some empirical research that fails to encounter a statistical significant relation between corruption and FDI. Specifically, Wheeler and Mody (1992) failed to find a significant correlation between risk and foreign investment by US firms. In the same line, Hines (1995) (in Cuervo-Cazurra 2008), found that, with the exception of the FDI that comes from the US, corruption in the host country does not appear to affect the growth of inward FDI. Indeed, this author found that high-growth corrupt countries had higher levels of growth of inward FDI than other countries.

Although the sampling might explain, in part, such awkward results,¹ we argue that it is relevant to assess whether the use of distinct indicators of corruption influence the results regarding the relation between FDI and corruption. Additionally, we conjecture that the control for other indicators of institutional quality (such Human Development Index; Economic Freedom Index; International Country Risk Guide indicator; Business International Index) might potentially influence the relation between FDI and corruption.

In order to measure corruption and countries' institutional quality, authors have used a myriad of indicators. For instance, Uhlenbruck *et al.* (2006) (cited in Cuervo-Cazurra, 2008), measure corruption using the variable country's risk factor, which includes host country corruption (which ranges from 0, low, to 10, high corruption), country pervasive corruption and arbitrary corruption.² Using a broader indicator, which underline the institutional quality of a country, Drabek and Payne (2001) tested the effect of non-transparency on foreign investors using a non-transparency index which includes, beside corruption, other indicators of institutional quality, such as unstable economic policies, weak and poorly enforced property rights, and inefficient government institutions that increase the risk and uncertainty associated with business.

Most studies use indexes that aggregate both corruption indicators and institutional quality (Drabek and Payne, 2001; Habib and Zurawicki, 2001; Blonigen, 2005; Cuervo-Cazurra, 2008). There is a possibility that when analyzed as a separate variable, but used simultaneously in the same regression, the outcome might be different from the existing studies' result. In the present work, we will try to do precisely that, analyzing the two dimensions, corruption and institutional quality, as separate variables, and in the case of corruption, testing for distinct proxies (controlling and not controlling for the impact of the institutional quality variable).

Thus, it is critical in the present study to assess to what extent the use of distinct indicators for corruption and/or institutional quality provokes divergent impacts of

¹ The existence and attractiveness of natural resources might explain the failure to find out the significant and negative relation between FDI and corruption indexes.

² Cuervo-Cazurra (2008) distinguishes two types of corruption, pervasive corruption – corruption that is certain and widespread –, and arbitrary corruption – corruption that is uncertain. The first one is a deterrent for FDI, because it creates an additional but known cost that could even act as grease in facilitating transitions, while in the second case, arbitrary corruption has a negative effect because it creates higher uncertainty in the investment.

corruption on FDI inflows. In order to properly assess such issue, we use the set of 127 countries to estimate an econometric, multivariate, model that, controlling for other relevant variables that are likely to affect FDI inflows (e.g., GDP, industrial structure, FDI attractiveness programs, education, labor markets, etc.), link corruption and institutional quality to FDI inflows, using several distinct indicators or proxies for corruption (both controlling and not controlling for the effect of other institutional quality indicators). This would permit to better rationalize (potential) non consensual results regarding the impact of corruption and institutional quality on FDI influxes.

This sample of 127 countries is an adequate group to consider at this level given that it is composed of quite distinct countries regarding both the institutional setting, namely in what regards the perceptions of corruption or Corruption Perception Index (Habib and Zurawicki, 2001; Transparency International, 2009), and FDI performance.

The present dissertation is structured as follows. In Chapter 1 we review the relevant literature on the issue in analysis. Then, in Chapter 2 we detail the methodological considerations, and in Chapter 3, we present the empirical results of the work. In Conclusions, we summarized the main outcomes of the present study and highlight its limitation and paths for future research.

Chapter 1. Corruption, institutional setting and FDI. A review of the literature

1.1. Initial considerations

In this chapter, we analyse the several existing theories about FDI and its main determinants that explain the degree of attractiveness of the recipient countries. Then, we analyse some corruption and institutional quality definitions and their possible proxies, as well as their measurement units. Finally, we analyse what the empirical evidence tell us about the impact of corruption and institutional quality on FDI.

1.2. Determinants of FDI

According to the IMF (1993: 86, in Bitzenis *et al.*, 2009) “direct investment is the category of international investment that reflects the objective of a resident entity in one economy obtaining a lasting interest in an enterprise resident in another economy ... The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the investor on the management of the enterprise. Direct investment comprises not only the initial transaction establishing the relationship between the investor and the enterprise but also all subsequent transactions between them and among affiliated enterprises, both incorporated and unincorporated.”

In 1999, OECD classifies and determines that, to be considered as FDI, the minimum equity stake for an investment should be 10%. Still in 1993, the IMF stipulates that the FDI should include equity capital, reinvested earnings and other capital, what could turn difficult to compare the indicators of different countries. According to Bitzenis (2006), the most important characteristics of FDI are the acquisition or the operation of taking the ownership or control of a foreign company or asset. Nevertheless, the practices in defining FDI vary greatly across the different countries, as well as the management requirements of companies. The understanding of economic globalization phenomenon, forces to look carefully to the MNEs FDI influxes (Blonigen, 2005; Bitzenis *et al.*, 2009). In addition, it is possible to catalogue the theoretical models that define FDI in micro and macroeconomic models. The first one, the microeconomic model, focus on motivations of the company to invest abroad, and even to became a MNE himself, such

as growing needs, and search for markets. The macroeconomic model focuses on the level of FDI flows and aspects such as the exchange rates and taxes on trade (Blonigen, 2005; Bitzenis, 2006; Faeth, 2009).

Most of the early studies on FDI determinants (e.g., Robinson, 1961; Behrman, 1962; Basi, 1966; Kolde, 1968; Wilkins, 1970; Forsyth, 1972, cited in Faeth, 2009), looked to a variety of factors, such as trade barriers, costs factors and investment incentives and opportunities. All these studies agree that factors such as market size, growing need and market share, classified as marketing factors, are key determinants of FDI. Moreover, the availability of labor and labor costs, production costs and raw materials availability are also relevant for FDI attraction. According to Basi (1966) (cited in Faeth, 2009), political stability, foreign exchange stability, and receptivity to foreign investment were the most important determinants of FDI.

In the early theoretical models, and according to the neoclassical trade theory of Heckscher-Ohlin, the FDI was seen as a part of the international capital trade (Subasat, 2003). This model was based on the equilibrated framework of two countries (home and foreign), two production factors (capital and labor) and two goods. Assuming perfectly competitive goods and factor markets, and identical constant returns, also the MacDougall–Kemp model – based on theoretical models by Hobson (1914), Jasay (1960), MacDougall (1960) and Kemp (1964) (cited in Faeth 2009) - advocate that capital was expected to move to the country with higher capital returns (i.e. the capital-scarce country). However, there was the possibility to manipulate these capital movements, imposing taxes on international capital mobility. This neoclassical model, that explains international capital trade due to differences in returns on capital, has a problem of consistency, due to its assumption of perfect competition, which is deeply improbably to verify (Santis and Vicarelli, 2000).

Davidson (1980), using survey data of US MNEs, showed that FDI by countries such as Canada, the UK and Australia was positively affected by host country characteristics, namely, market size and geographical proximity, cultural similarity and firms' level of experience. Other studies (e.g., Habib and Zurawicki, 2001; Bitzenis *et al.*, 2005; Blonigen, 2005; Faeth, 2009) showed that market size, market growth and trade barriers

could potentially be important determinants of FDI, so they should be incorporated into the theoretical models about FDI (Drabek and Payne, 2009).

In the MNE theory, the FDI had been based on the OLI advantages, that is, Ownership (O), the Location (L), and the Internalization advantages (I). The Eclectic paradigm or OLI framework of Dunning, explains the option of the MNE's for FDI with the conjugation of these three advantages (Sanctis and Vicarelli, 2001; Faeth 2009). With this OLI framework (Dunning, 1977, in Tallman, 2004) aimed at explaining and synthesizing the reasons for firms to operate internationally (advantages) and the mode of entry (FDI, export and licensing). The framework permits not only to determine the mode of entry of a MNE in a foreign country, but also the volumes of FDI inflows (Blonigen, 2005; Bitzenis *et al.*, 2009). Markusen, (1998), combines ownership and location advantages with technology and country characteristics, and explains both horizontal and vertical FDI,³ developing another model of analysis, which is the knowledge-capital model, and it is applied for the two types of FDI.

According to Santis and Vicarelli (2000), and in alignment with what is said before, when trying to find FDI determinants common to several European countries (Italy, France, Germany, UK, Netherlands), the results reveal a positive relation between FDI inflows and the ratio of per capita GDP of both countries, the investor and respective host. It is also visible that the flows among the countries vary according to market seeking motives, and that political and social stability (together with a government that regulates the market but do not interfere), fiscal policy and statutory corporate tax rates, R&D, human capital, technological innovation are very important FDI attraction determinants.

According to the effect of natural resources as determinant of FDI attraction, that relation is so strong as the need of the investing companies in explore that particular resource, once a given resource is unique and specific of a particular place, the companies will invest in that market (Hill, 2007)

Referring specifically to the main obstacles to FDI, Bitzenis *et al.* (2009) argue that those include several items, namely corruption and other institutional quality indicators

³ Vertical FDI takes place when the multinational fragments the production process internationally, locating each stage of production in the country where it can be done at the least cost. Horizontal FDI occurs when the multinational undertakes the same production activities in multiple countries (Markusen, 1998).

(e.g., bureaucracy, the tax system, the labor market structure, the legal framework, the lack of infrastructures and technological development, the macroeconomic instability, and the political violence).

Corruption and other variables reflecting poor institutional quality have been associated to many developing countries, and have a direct negative impact in FDI influxes due to the image of social instability, inequality, and bad use of the public moneys and malfunctioning of institutions (Kaufman *et all*, 2005). Economies that are viewed or are associated with high levels of corruption usually have greater economic and social instability, low public investment in education and health care, and by consequence, poor economic development (Myint, 2000; Jain, 2001; Tanzi, 2002).

Summarizing, cf. Table 1, the major FDI determinants, can be grouped into four main factors: Market, Social, Political and Institutional Quality (which includes Corruption).

Table 1: Key determinants of FDI according to the OLI framework

Determinants	Variables	Expected impact on FDI	Studies
Market	Market Dimension	+	Markusen, 1998; Santis and Vicarelli, 2000; Habib and Zurawicki, 2001; Subasat, 2003; Tallman, 2004; Blonigen, 2005; Bitzenis <i>et al.</i> , 2009; Drabek and Payne, 2009; Faeth, 2009
	GDP	+	
	Geografic location	+	
	Acessebilitiy	+	
Social	Natural resources	+	
	Education/literacy	+	
	R&D	+	
	Labor costs	-	
	Labor laws flexibility	+	
Politics	Quality work force	+	
	Incentives to IDE attraction	+	
	Taxes	-	
	Currency (exchange rates)	+/-	
Institutional Quality	Political situation	+	
	Corruption Perception Index (TI) [the higher the CPI the higher the level of transparency]	+	
	Corruption Bribe Payer's Index [the higher the BPI the lower the propensity for bribes]	+	
	Global Corruption Barometer	-	
	Other Institutional Quality indicators	+	
	Human Development Index	+	
	Economic Freedom Index	+	
International Country Risk Guide indicator	+		
Business International Index	+		

Overall, we can say that for dimensions Market, Social and Politics, the impact and variation of FDI inflows is positive. In other words, as determinants of FDI, when these variables have high values and a positive direction, the effect of attraction of FDI increases. For instance, a large market, good accessibilities, high level of literacy, and

better quality workforce, increases the capacity of a country to attract FDI. On the other hand, a weak institutional quality, which includes high levels of corruption, bureaucracy, risk and low levels of human development, economic freedom or business development, have a negative impact on FDI.

1.3. Corruption and institutional quality: definitions and measurement

As referred earlier, institutional quality aggregates several indicators, some of which have illegal character, namely corruption and bribery, and others that are not illegal, such as bureaucracy and inefficiency of institutions (Drabek and Payne, 2001), with both of them having a key role in the attractiveness of the country regarding FDI (Wheeler and Mody, 1992; Drabek, and Payne, 2001; Cuervo-Cazurra, 2008; Bitzenis *et al.*, 2009; Demirbag *et al.*, 2010).

Another term frequently used in order to address institutional quality is “non-transparency” (Wheeler and Moody, 1992; Sanyal and Samantha, 2008). This term includes not only economic policies, but also a set of practices, usually, governmental and institutional that are not corruption but increase the risk and uncertainty, contributing negatively to the country attractiveness, and consequently has a negative impact on FDI inflows (Baughn *et al.*, 2010). These practices include, for instance, weak laws on property rights, inefficiency of the courts, and judiciary and bureaucracy (Habib and Zurawicki, 2002; Javorcik, 2009; Baughn *et al.*, 2010).

Also an important aspect of non-transparency arises in the property rights and the lack of copyright protection, and in the existence of patent security and lack of enforcement of contracts. This is a critical issue to the companies that are investing large amount of money in R&D and new patents (Drabek and Payne, 2001). Another two aspects of non-transparency, that can impose severe barriers to business, and specifically to FDI, are the level of bureaucratic inefficiency within the government, and the poor enforcement of the law. At last, the conduct of economic policies *per se*, and the predictability of the policies and government behavior are also determinant, in the way that they are indicators of how legal institutions work (Drabek and Payne, 2001).

Focusing now on a particular dimension of institutional quality, corruption, the World Bank defines it based on the issue of abuse of public power for private benefits (Tanzi, 1998, in Habib and Zurawicki, 2001). In the same line, corruption has been defined by

other authors (Busse *et al.*, 1996, cited in Habib and Zurawicki, 2001) as the use of power by governments and similar or close institutional entities, to profit or obtain benefits in their own profit. Stressing the illegal and improper behaviors, Warren and Laufer (2010) refer that corruption is an act of improbity (cf. Table 2).

Table 2: Definitions of corruption

Definition	Studies
The abuse of public power for private benefits	Tanzi (1998)
The use of power by governments and institutional entities, to obtain benefits in their own profit	Busse <i>et al.</i> (1996)
The act of improbity, which includes illegal and improper behaviors	Warren and Laufer (2010)
The abuse of entrusted power for private gain	
Facilitation payments, where a bribe is paid to receive preferential treatment for something that the bribe receiver is required to do by law	Transparency International

In general, corruption includes bribery, bureaucracy, and inefficiency, involving both to the public and private sectors (Baughn *et al.*, 2010). It is documented (Wu, 2006; Cuervo-Cazurra, 2008; Baughn *et al.*, 2010) that the huge growth of international trade over the past five decades has been accompanied by an increase in bribery. The World Bank estimated that 5% of the exports to developing countries go to corrupt officials (Moss, 1997, cited in Sanyal and Samantha, 2008). By definition, bribery is an illicit and secret payment, somewhere along the business process (Drabek and Payne, 2001). According to OECD Observer (2000, cited in Sanyal and Samantha, 2008: 125), bribery is defined as “the offering, promising or giving something in order to influence a public official in the execution of his/her official duties” and it could take the form of money or any other pecuniary or non pecuniary benefits or advantages.

The most common indicators used to measure corruption (cf. Table 3) are: the Corruption Perception Index (CPI), the Bribe Payer’s Index, and the Global Corruption Barometer (GCB), all of them managed by Transparency International. The CPI reports the perceived level of corruption in 146 countries. The classification ranges between 10, which represents a ‘very clean’ country, to 0, which reflects a highly corrupt country. The Bribe Payer’s Index assesses the supply side of corruption and ranks corruption by source country and industry sector. It also uses the scale 0 to 10, where 10 is very low propensity to pay bribes and 0 is very high propensity to pay bribes. Finally, the GCB is

the only worldwide public opinion survey on views and experiences of corruption that assesses the general public's perception and experience of corruption in more than 60 countries. It differs from Corruption Perception Index, because the CPI assesses experts' perceptions of levels of public sector corruption across countries, while the Global Corruption Barometer is concerned with attitudes toward and experiences of corruption among the general public. It inquires the people to tell in what measure they perceive corruption in public institutions, in a scale from 1 (not at all corrupt) to 5 (extremely corrupt).

Table 3: Proxies for corruption and institutional quality

	Proxy	Name	Scale
Corruption	CPI	Corruption Perception Index (TI)	
	BPI	Bribe Payer's Index	Best: 10 →Worse: 0
	GCB	Global Corruption Barometer (GCB)	Best: 1 →Worse: 5
Institutional Quality IQ)	HDI	Human Development Index	Best: 1 →Worse: 0
	EFI	Economic Freedom Index	Best: 100 →Worse: 0
	ICRG	International Country Risk Guide indicator	Low risk: 100 →High risk: 0
	BII	Business International Index	Best: 100 →Worse: 0
Corruption + IQ	CRF	Country Risk Factors	Barometer
	NT	Non Transparency	Best: 10 →Worse: 0

Several recent studies (Drabek and Payne, 2001; Busse and Groizard, 2008; Andreula *et al.*, 2009) have emphasized the importance Institutional Quality as one of the most important means to attract FDI. The Institutional Quality is defined in several different ways, and not necessarily including corruption. Institutional Quality is based in an institutional framework, composed by three basic institutions, which are private property rights, the law of contract and a strong government (Kostevc, Redek and Sušjan 2007).

Other authors define Institutional Quality as one set of practices and characteristics of the legal environment of the countries such as weak laws on property rights, inefficiency of the courts, and judiciary and bureaucracy (Habib and Zurawicki, 2002; Javorcik, 2009; Baughn *et al.*, 2010), and lack of copyright protection and in the existence of patent security and lack of enforcement of contracts (Drabek and Payne, 2001). It could also be characterized by the relationship between institutions and transparency (Andreula *et al.*, 2009). Knack and Keefer (1995) use two measures of institutional quality, which represent the security of property rights and contract rights, namely, risk of expropriation and the rule of law. They use the International Country

Risk Guide (ICRG) as the source for these two proxies. Also Busse and Groizard (2008), refer to Institutional Quality, and suggest that governments have, in the first place, to improve the regulatory quality in the home country before the benefit from openness to foreign capital (i.e. in the form of FDI) can be derived. They utilize the data provided by Doing Business namely concerned to issues such as starting a business, labor market regulations, contract regulations, creditor rights and insolvency regulations.

In relation to Institutional Quality (other than not corruption-related factors), the most well known indicators are: the Human Development Index (HDI), Economic Freedom Index (EFI), International Country Risk Guide indicator (ICRG) and Business International Index (BII) (Knack and Keefer, 1995; Wei, 2000; Drabek and Payne, 2001; Bitzenis *et al.*, 2009; Demirbag *et al.*, 2010).

The Human Development Index is a summary measure of human development that is published by the United Nations, which measures the average achievements in a country in three basic dimensions of human development: expectancy at birth; adult literacy rate; GDP per capita. It ranges between 1 (high development) to 0 (very low development).

The Economic Freedom Index (EFI) measures ten components of economic freedom (business; trade; fiscal; government spending; monetary; investment; financial; property rights; corruption; labor), assigning a grade in each using a scale from 0 to 100, where 100 represents the maximum freedom.

The International Country Risk Guide (ICRG)⁴ composite indicator provides annual averages of political, financial and economic risk indicators for 140 countries in a scale of 0 to 100, where 100 represents the lowest risk.

Finally, the Business International Index is provided by the Economist Intelligence Unit, an independent entity that provides important economic and business research,

⁴ Composite indicator of: **Political Factors:** Government Stability; Socioeconomic Conditions; Investment Profile; Internal Conflict; External Conflict; Corruption; Military in Politics; Religious Tensions; Law and Order; Ethnic Tensions; Democratic Accountability; Bureaucracy Quality; **Economic Factors:** GDP Per Capita; Real Annual GDP Growth as Annual % Change; Annual Inflation Rate as Annual % Change; Budget Balance as % of GDP; Current Account as % of GDP; **Economic Factors:** GDP Per Capita; Real Annual GDP Growth as Annual % Change; Annual Inflation Rate as Annual % Change; Budget Balance as % of GDP; Current Account as % of GDP)

forecasting and analysis, over 180 countries, comparing and ranking key indicators such as GDP growth, inflation, exchange rates and balance of payments. Values range between 0 (worst) and 100 (best).

It is important to refer that there are some composite indicators which includes, simultaneously, corruption and other institutional quality indicators. In concrete, we might point the Country Risk Factor (CRF) and Non Transparency. The former includes corruption and twelve other indicators (Wheeler and Moody, 1992),⁵ whereas the latter (the Non Transparency), includes corruption, political instability, inefficient public institutions, and poor property rights (Drabek and Payne, 2001).

1.4. The impact of corruption and institutional quality on FDI. What does the empirical evidence tell us?

There are several authors and empirical studies that address the theme of corruption relating it with FDI influxes and MNEs location decisions (e.g., Habib and Zurawicki, 2001; Blonigen, 2005; Bitzenis *et al.*, 2005; Uhlenbruck *et al.*, 2006).

Corporate boardrooms and the popular business press suggested that corruption has a negative effect on the investment in foreign countries (Wu, 2006). According to Habib and Zurawicki (2001), the negative effect of corruption on investments is clear; at the same time, political stability and economy openness have positive effects on the FDI influxes.

Corruption usually affects negatively the influxes of FDI because the companies and the home land headquarters, find it increasingly difficult to perform business, working as an 'arbitrary tax' (Tanzi, 1998, in Habib and Zurawicki, 2001). Wei (2000), instead, finds a consistently negative relation between corruption and FDI, using both the Business International index and the Transparency Index (although still negative, results were smaller for TI index).

However, some studies show a different perspective. For instance, Kaufmann (1997) and Wei (2000) (cited in Habib and Zurawicki, 2001) evidence that, from a firm perspective, sometimes bribery can compensate on large business deals.

⁵ Namely, attitude of opposition groups towards FDI; government support for private business activity; and overall living environment for expatriates.

Wu (2006) expects cross-border FDI to decline with corruption distance (difference of the CPI value between the investor country and the receptor). As most OECD countries have lower levels of corruption than do non-OECD countries, these latter, should reduce their corruption levels in order to attract more FDI from OECD countries. In the same line of argumentation Drabek and Payne's (2001) empirical analysis shows that the degree of non-transparency is an important factor in a country's attractiveness to FDI. Specifically, they show that high levels of non-transparency decrease FDI inflows. In the same way, increasing transparency levels will have a positive effect on FDI.

Using data from Transparency International's Corruption Perception Index and its first (1999) Bribe Payer's Index Sanyal and Samanta (2004) test two hypotheses: "US FDI to a country is likely to be affected by that country's level of corruption" and "US FDI is likely to be lower in countries where the perceived level of corruption is high". The study confirms a direct correlation between CPI and BPI. Countries ranked high on the CPI are also high on the BPI. This study also uses Gross Domestic Product (GDP), as a determinant of FDI, and the final result indicates that both GDP and CPI in the host countries are significantly important for FDI flows (from the USA in this case). Larrain and Tavares (2004) controls FDI inflows, import intensity and per capita income levels, as well as corruption levels, measured in accordance with the International Country Risk Guide indicator, and find that not only the high corruption levels deter FDI, but also high inflows of FDI, deter corruption.

Warren and Laufer (2010) empirical test about the effect of corruption rankings (CPI) on investment desirability, finds that unfavorable rankings reduce investment desirability, while favorable corruption rankings boost investment desirability.

Finally, Habib and Zurawicki's (2001) study also supports the earlier observed negative effects of corruption on FDI. However, it also shows that the degree of international openness and the political stability of the receptor market moderate the influence of corruption in the FDI inflows.

From the empirical studies summarized in Table 4, three main conclusions can be drawn:

1) regardless the indicators, in isolation (Wei, 2000; Drabek and Payne, 2001; Wu, 2006; Baughn *et al.*, 2010), or combined with other institutional quality indicators

(Habib and Zurawicki, 2001; Larrain and Tavares, 2004; Cleeve, 2008; Sanyal and Samanta, 2008; Warren and Laufer, 2010), corruption evidence always a negative relation with FDI;

2) when in combination with other institutional quality indicators (Habib and Zurawicki, 2001; Larrain and Tavares, 2004; Cleeve, 2008; Sanyal and Samanta, 2008; Warren and Laufer, 2010), these latter fail to be statistically significant for explaining FDI inflows. The only exception is Warren and Laufer, (2010), when controlling the variable Country Desirability;

3) the sample size and diversity is quite disparate preventing to assess whether the use of distinct indicators of corruption (in isolation or jointly with IQ indicators) would bring dissimilar results in terms of impact on FDI inflows.

Table 4: Empirical studies on the impact of Corruption (C) and Institutional Quality (IQ) on FDI

Studies	Sample	Dependent Var./ Proxy FDI	Proxy IQ	Proxy C	Impact		Estimation method
					IQ	C	
Baughn <i>et al.</i> (2010)	30 Leading Exporting Countries	FDI Inflows		Bribery Payers Index (BPI)		+	Regression analyses
Wei (2000)	14 source countries 45 host countries	Bilateral FDI Inflows		Business Internatl .Index(BI)		-	Linear Regression analyses (OLS estimation)
Wu (2006)	(24 OECD source countries) 52 host countries	FDI Inflows		Corruption Distance (CD)		-	Regression analyses
Drabek and Payne (2001)	162 Countries	FDI Inflows (FDI/GDP)	Transparency Index(TI-ICRG)		+	+	Regression analyses
Cleeve (2008)	16 Sub-Saharan Africa Countries	FDI Inflows	(Political Freedom + Civil liberty)/2	Corruption Perception Index (CPI)	0	-	Multivariate Regression
Sanyal and Samanta (2008)	USA and other 42 countries (inflows)	Outward US FDI	GDP	Corruption Perception Index (CPI)	0	-	Multiple regression analysis
Larrain and Tavares (2004)	20 countries (leading economies)	FDI Inflows (FDI/GDP)	Degree of Country Openness	Level of Corruption (ICRG)	0	-	Multiple regression analysis
Warren and Laufer (2010)	12 Countries	Country desirability (investment attraction)	TI Ranking	Corruption Perception Index (CPI)	-	-	Panel Data (inquiries)
Habib and Zurawicki (2001)	111 countries	FDI Inflows	POLRISK	Corruption Perception Index CPI	0	-	OLS Multiple Regression analyses

Legend: (CPI) Corruption Perception Index; (TI) Transparency International; (BPI) Bribe Payer's Index; (HDI) Human Development Index; (EFI) Economic Freedom Index; (GDP) Gross Domestic Product; (ICRG) International Country Risk Guide indicator; (BI) Business International Index; (CD) Corruption Distance (Δ CPI ab); (POLRISK) Political Risk/Instability index (PRS Yearbook)

Chapter 2. Corruption, institutional setting and FDI. Methodological considerations

2.1. Initial considerations

As referred earlier, the present study aims to test whether the use of distinct proxies for corruption, in isolation and controlled for other institutional quality factors impacts differently on FDI (controlling in every case for other factors - Market, Social and Political - which traditionally are taken into account in the study of FDI flows). In the present chapter we detail the data set used, the proxies for each variable of the model, and the methodology used to estimate that model. Thus, in the next section (Section 2.2), we explain the research questions and present the ‘theoretical model’. In Section 2.3 we describe the data sources used and the proxies of the variables of the model.

2.2. Research question and the ‘theoretical model’

The aim of the present study is twofold:

- 1) To assess, for the same set of countries (in our case, 127 countries), and controlling for ‘traditional’ determinants of FDI, whether the use in of distinct indicators of corruption influence the results regarding the relation between FDI and Corruption.
- 2) To assess, for the same set of countries (in our case, 127 countries), and controlling for ‘traditional’ determinants of FDI, whether the signal of the variable corruption is robust when we control for other indicators of institutional quality such as Human Development Index (HDI), the Economic Freedom Index (EFI), the Business Freedom Index (BFI), and the Ease of Doing Business (EDB)

Thus, in accordance of the literature review performed (cf. Chapter 1), our ‘theoretical models’ are:

$$FDI \text{ Inflows} = f \left(\underbrace{Market; Social; Politics; Corruption \text{ Indicator } k}_{\text{Traditional determinants}} \right)$$

$$FDI \text{ Inflows} = f \left(\underbrace{Market; Social; Politics; Corruption \text{ Indicator } k; Other \text{ Institutional Quality Indicator}}_{\text{Traditional determinants}} \right)$$

Where, k = Corruption Perception Index (CPI); Bribe Payer's Index (BPI); Global Corruption Barometer (GCB), which represents the distinct proxies for the 'Corruption' variable.

The 'Other Institutional Quality Indicator' are proxied, cf. Table 3, by the Human Development Index (HDI), the Economic Freedom Index (EFI), the International Country Risk Guide indicator (ICRG), and the Business International Index (BII)

2.3. Variables proxies and data sources

The data in which our work is based encompasses 127 countries with the relevant variables reported to the period spanning between 2000 and 2010.⁶

Starting with our dependent variable the FDI inflows, its proxy is presented as an average (2007-2010) ratio of FDI net influx in GDP. The source used is the World Bank database.

Passing now to the independent or explanatory variables, they are grouped into four major dimensions (cf. Table 5): Market factors, Social factors, Politic factors and Institutional Quality related factors (which includes Corruption and other Institutional Quality indicators). Given that the impact of the independent variables on FDI flows might take time, and to avoid possible mutual causality between dependent and independent variable, we compute all the proxies for the independent variables as an average for an earlier period to that of the dependent variable (2007-2010). Thus, the majority of independent variables are computed and averages for the period 2005-2007.

Regarding the 'Market factors', we have the 'Market Dimension' whose proxies are, in line of the studies by Santis and Vicarelli (2000) and Blonigen (2005), the total GDP and the GDP per capita.⁷ Both variables are provided by the World Bank Database, and are measured in USD, at constant prices, constant PPPs and with reference year 2000.

⁶ Initially, our database encompassed only the 34 OECD countries reported to the period 2004-2009. However, the estimations of the model based on this set of countries produced weak results due to the low heterogeneity of the countries regarding the FDI determinants, in particular those of corruption and institutional quality. We decided therefore to enlarge both the set of countries considered and the period in analysis, this latter in order to permit to have a period gap between the dependent variable (FDI inflows) and the explanatory ones – the FDI inflows is computed for the most recent period (2007/2010) whereas the determinant variables are computed in the beginning of the period (2000/2007).

⁷ GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

Following Faeth (2009) and Bitzenis *et al.* (2009), ‘Market dynamics’ is proxied by GDP Growth, i.e., the annual percentage growth rate of GDP at market prices based on constant local currency. The variable ‘Geographic location’ is proxied by dummy which assumes the value 1 in the case the country is located in Europe and 0 otherwise. ‘Accessibility’ is proxied by the percentage of telephone lines (including wireless subscribers) per 100 people (Santis and Vicarelli, 2000). The last variable in this group is ‘Natural resources’. This variable intends to provide information about the country’s natural wealth (Hill, 2007). However, due to the lack of information we chose the proxy exports of fuel in total exports, used by authors such as Hill (2007), which reflects the country’s exports of oil derivatives or refined products in percentage of the total of merchandise exports. The last two proxies are provided by the World Bank database.

The Social factors group encompasses measures of human capital, technological competencies, and labour cost and quality. The variable Education/Literacy is proxied, following Santis and Vicarelli (2000), by the Literacy Rate, which measures the percentage of people aged 15 and above that can read and write. The data source is the CIA World Fact Book. The technological competencies indicator, Business Research and Development (BERD) in GDP, gives us the private research and development as a percentage of GDP (Santis and Vicarelli, 2000), and the source is the OECD Statistics and the World Bank database from UNESCO Institute for Statistics.

The variable Labour Costs is proxied by the minimum wages in PPP USD, in the reference year of 2007 (Faeth, 2009). The source for this data was ILO Global Wage Report.

The last variable in this group or dimension of the Social factors is the Quality of the Work Force, whose proxy is the Labour Force with Tertiary Education, where the measure, in line of Faeth (2009), is the proportion of labour force that has a tertiary education, as a percentage of the total labour force. This information comes from the WD database.⁸

⁸ In the first attempt to estimate the model, with the OECD sample, we also used another variable that was the Labour Laws flexibility which the proxy is the Labour Freedom index from The Heritage Foundation, that measures the mobility and protection of the workers. There was no data available for a large number of countries in the new sample, reason why the indicator was not considered.

Table 5: Variables, proxies and data sources

Determinants	Variables	Indicator/proxy	Data source	
Dependent variable	FDI inflows	FDI/GDP (average 2007-2010)		
Market	Market Dimension	Total GDP (average 2000-2007)	World Bank	
		GDP per capita (average 2005-2007)	World Bank	
	Geographic location	Europe 1/ Others 0		
	Accessibility	Telephone lines per 100 inhabitants (average 2005-2007)	World Bank	
	Natural resources	Exports fuel / total exports (average 2005-2007)	World Bank	
	Education/literacy	Literacy ratio (average 2001-2006)	CIA World Fact Book	
	R&D	Business Expenditure in Research & Development in GDP(average 2005-2007)	World Bank	
Social	Labour costs	Unit labour cost in manufacturing (index OECD base year 2005=100) (average 2005-2007)	International Labour Organization	
		Labour laws flexibility	Labour Freedom Index(average 2005-2007)	Heritage Foundation
	Quality work force	Labour force with secondary education (average 2005-2007)	World Bank	
	Strength of legal rights	Strength of legal rights index (0=weak to 10=strong) (average 2005-2007)	World Bank	
Politics	Taxes	Taxes on income, profits and capital gains (% of revenue) (average 2005-2007)	World Bank	
	Currency (exchange rates)	Dummy-variable where it assumes the value 1 if currency is the Euro (0 otherwise)		
	Corruption Perception Index (TI)	CPI (average 2005-2007)	Transparency International	
Institutional Quality	Corruption	Bribe Payer's Index	BPI (2008)	Transparency International
		Global Corruption Barometer	GCB (average 2006-2009)	Transparency International
	Other Institutional Quality indicators	Human Development Index	Human Development Index 0/1 (average 2000-2010)	United Nations
		Business Freedom	Business Freedom Index(average 2005-2007)	Heritage Foundation
	Ease of Doing Business Rank	Doing Business (average 2005-2007)	World Bank	

Regarding the Political group of indicators we start with the fiscal burden which is proxied by Taxes on Income, Profits and Capital Gains, (percentage of total taxes) (Blonigen, 2005; Bitzenis, 2006; Faeth, 2009) and is provided by the World Bank and

the International Monetary Fund. The uncertainty associated to countries' exchange systems (Faeth, 2009) is proxied by the variable 'Currency Risk', which is a dummy, where the "non euro" countries are classified with 0 and the euro countries have the value 1. Additionally, we considered the variable 'Customs', whose proxy is Burden of Customs Procedure, which measures business executives' perceptions of their country's efficiency of customs procedures. The rating ranges from 1 to 7, with a higher score indicating greater efficiency. The source for this data is the Global Competiveness Report and data files from the World Economic Forum.

In what respects the Institutional Quality group, and starting by the Corruption indicators, we included three indicators, all of them provided by the Transparency International organization: the Corruption Perception Index (CPI), the Bribe Payer's Index (BPI), and the Global Corruption Barometer (GCB). In the case of the two first indicators the value 0 corresponds to very corrupt classification, and the 10 value the less corrupt (very transparent). The CPI score relates to perceptions of the degree of corruption as seen by business people and country analysts whereas the BPI reflects the propensity of exporting companies to pay bribes in exporting markets. As we said above, the score 10, represents the lowest possible propensity to pay bribes.

In the third one, the Global Corruption Barometer (GCB), which is a composite index (average of other eleven indicators⁹), the classification is obtained through the answer of the question "To what extent do you perceive the following institutions in this country to be affected by corruption?", where the value 1 is not at all corrupt, and the values 5 is extremely corrupt.¹⁰

All these three indicators are provided by the Transparency International Organization. Because the BPI indicator only includes information for 43 countries, we add a new corruption indicator called 'Bribes' which measures the amount of Irregular Payments and Bribes. This indicator represents the average score across the five components of the following Executive Opinion Survey question: In your country, how common is it

⁹ Political Parties; Parliament/Legislator; Police; Business/Private Sector; Media; Public Officials/Civil Servants; Judiciary; NGOs; Religious Bodies; Military; Education System.

¹⁰ Due to extreme difficulties and despite the huge effort in finding information, we could not get information for Belgium, Estonia, Slovak Republic and Sweden for the Bribery Payers Index and for the Global Corruption Barometer. In order to overcome that gap, we use a proportional rule, having Switzerland as a reference.

for firms to make undocumented extra payments or bribes connected with (a) imports and exports; (b) public utilities; (c) annual tax payments; (d) awarding of public contracts and licenses; (e) obtaining favorable judicial decisions. The answer to each question ranges from 1 (very common) to 7 (never occurs), and the result we will consider is the weighted average. The source is The Global Competitiveness Report, from the World Economic Forum.

In the other Institutional Quality indicators we have the Human Development Index, provided by the United Nations. This index measures development by combining indicators of life expectancy, educational attainment and income into a composite human development index. It serves as a frame of reference for both social and economic development and it is expressed as a value between 0 and 1.

The Economic Freedom Index is an indicator that reflects the right of every human to control his own labour and property. It measure ten components¹¹ of economic freedom, assigning a grade in each using a scale from 0 to 100, where 100 represents the maximum freedom. The ten component scores are then averaged to give an overall economic freedom score for each country. For this variable, we used the Heritage Foundation reports as source.

The last variable/proxy in this group is the Business International Index. The Business freedom is a quantitative measure of the ability to start, operate, and close a business that represents the overall burden of regulation as well as the efficiency of government in the regulatory process (Drabek, and Payne, 2001; Bitzenis *et al.*, 2009). It scores for each country is a number between 0 and 100, with 100 equalling the freest business environment. The score is based on 10 factors,¹² all weighted equally, using data from the World Bank's Doing Business study.

¹¹ Business, Trade, Fiscal, Monetary, Investment, Financial, Labor Freedom; Government Spending; Property Rights; Freedom from Corruption.

¹² Starting a Business (# procedures; # days; cost in percentage of income per capita; minimum capital need in percentage of income per capita); Obtaining a license (#procedures; # days; cost in percentage of income per capita); Closing a business (# years; cost in percentage of estate; recovery rate in cents of dollar).

Table 6: Variables, proxies and data sources (final framework)

Determinants	Variables	Indicator/proxy	Source	
<i>Dependent variable</i>	<i>FDI inflows</i>	<i>FDI/GDP</i>	<i>World Bank</i>	
Market	Economy Growth	GDP growth	World Bank	
	Market Dimension	GDP per capita	World Bank	
	Accessibility	Telephone lines per 100 inhabitants	World Bank	
	Natural resources	Fuel Exports (% merchandise exports)	United Nations Statistics Division	
Social	Education/literacy	literacy rate	CIA World Fact Book	
	R&D	Business Expenditure in Research & Development (BERD in GDP)	UNESCO	
	Labor costs	Minimum Wages	ILO (LABORSTA) Labour Statistics Database / Global Wage Report	
	Quality work force	Labor force with tertiary education (% total labor force)	World Bank	
Politics	Taxes	Taxes on income, profits and capital gains WB (% of revenue)	World Bank / IMF	
	Currency (exchange rates)	Dummy (Euro/other)		
Institutional Quality	Corruption	Corruption Perception Index	Corruption Perception Index (CPI)	Transparency International
		Bribes	Irregular Payments and Bribes	World Economic Forum
		Global Corruption Barometer	Global Corruption Barometer	Transparency International
	Other Institutional Quality indicators	Human Development Index	Human Development Index	United Nations
		Economic Freedom Index	Economic Freedom Index	Heritage Foundation
		Business International Index	Business Freedom	Heritage Foundation
	Ease	Ease Doing Business	Doing Business WB	

Finally, the variable ‘Ease’, proxied by the Ease of Doing Business index, ranks the economies from 1 to 183. A high ranking on this index means the regulatory environment is more conducive to the starting and operation of a local firm. It averages the country's percentile rankings on 9 topics,¹³ made up of a variety of indicators, giving equal weight to each topic. The source used is the Doing Business organization from the World Bank.¹⁴

¹³ Starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing a business.

¹⁴ We also analysed four additional proxies in the Institutional Quality group: Protecting Investors Strength (index ranges from 0 to 10, with higher values indicating more investor protection), and Time to Starting Business (in number of days) and Procedures to Starting Business (where the measure is the number of procedures). The source for all was the Doing Business organization from the World Bank. Nevertheless, give the high correlation with the overall ‘Ease’ index we decided to dropped these latter variables.

2.4. Econometric model specification

Our ‘dependent’ variable, FDI flow above the average, is a dummy which assumes the value 1 in the case the country has FDI flows above the average and 0 otherwise (below or at the average). Given the nature of the dependent variable (binary), the empirical assessment of FDI flow above the average ‘propensity’ is based on the estimation of the general logistic regression, which in turn is based on the existing literature on the determinants of entry modes, surveyed in Chapter 1.

In order to have a more straightforward interpretation of the logistic coefficients, it is convenient to consider a rearrangement of the equation for the logistic model, in which it is rewritten in terms of the odds of an event occurring. Writing the logistic model in terms of the log odds, we obtain the logit model:

$$\text{Log}\left(\frac{\text{Prob}(\text{FDI}_{-}\text{above}_{-}\text{average})}{\text{Prob}(\text{FDI}_{-}\text{at}_{-}\text{below}_{-}\text{average})}\right) = \beta_0 + \underbrace{\beta_1\text{Market}_{-}\text{growth} + \beta_1\text{Market}_{-}\text{dimension} + \beta_2\text{Accessibility} + \beta_3\text{natural}_{-}\text{resources}}_{\text{Market}} +$$

$$+ \underbrace{\beta_4\text{Education} + \beta_5\text{RD} + \beta_6\text{Labor}_{-}\text{cost} + \beta_7\text{Labor}_{-}\text{quality}}_{\text{Social}} + \underbrace{\beta_7\text{Taxes} + \beta_8\text{Currency}}_{\text{Political}} + \underbrace{\beta_9\text{Corruption}}_{\text{Inst}_{-}\text{Quality}} +$$

$$\left[\underbrace{\beta_{10}\text{HDI} + \beta_{11}\text{BFI} + \beta_{12}\text{BII} + \beta_{13}\text{Ease}}_{\text{Other}_{-}\text{Inst}_{-}\text{Quality}} \right] + \varepsilon_i$$

Then,

$$\frac{\text{Prob}(\text{FDI}_{-}\text{above}_{-}\text{average})}{\text{Prob}(\text{FDI}_{-}\text{at}_{-}\text{below}_{-}\text{average})} = e^{\beta_0 + \underbrace{\beta_1\text{Market}_{-}\text{growth} + \beta_1\text{Market}_{-}\text{dimension} + \beta_2\text{Accessibility} + \beta_3\text{natural}_{-}\text{resources}}_{\text{Market}} +$$

$$+ \underbrace{\beta_4\text{Education} + \beta_5\text{RD} + \beta_6\text{Labor}_{-}\text{cost} + \beta_7\text{Labor}_{-}\text{quality}}_{\text{Social}} + \underbrace{\beta_7\text{Taxes} + \beta_8\text{Currency}}_{\text{Political}} + \underbrace{\beta_9\text{Corruption}}_{\text{Inst}_{-}\text{Quality}} +$$

$$\left[\underbrace{\beta_{10}\text{HDI} + \beta_{11}\text{BFI} + \beta_{12}\text{BII} + \beta_{13}\text{Ease}}_{\text{Other}_{-}\text{Inst}_{-}\text{Quality}} \right] + \varepsilon_i}$$

The logistic coefficient can be interpreted as the change in the log odds associated with a one unit change in the independent variable. Then, e raised to the power β_i is the factor by which the odds change when the i^{th} independent variable increases by one unit. If β_i is positive, this factor will be greater than 1, which means that the odds are increased; if β_i is negative, the factor will be less than one, which means that the odds are decreased. When β_i is 0, the factor equals 1, which leaves the odds unchanged.

In the case where the estimate of β_9 emerges as negative and significant for the conventional levels of statistical significance (that is, 1%, 5% or 10%), this means that, on average, all other factors remaining constant, the FDI above the average countries are associated with lower levels of corruption.

Chapter 3. Corruption, institutional setting and FDI. Empirical results

3.1. Initial considerations

In this chapter we describe in detail, the results of the estimation of the econometric regression used to infer the influence of the different indicators of corruption and institutional quality, in the behaviour of FDI influxes, controlling for other traditional determinants of FDI. Thus, in the next section (Section 3.2), we expose the descriptive results, namely the estimates of the correlations between the variables and the analyses of differences in mean values, resulting from the non parametric test of differences in means of Kruskal-Wallis. In the last section (Section 3.3) we present and discuss the results of the estimation of the econometric regression.

3.2. Descriptive results

3.2.1. Differences in means

In order to better know our data, we will analyze it using the Kruskal-Wallis¹⁵ test and observe the differences in means.

Our dependent variable, is presented in a logistic form, where the FDI in GDP assumes only two values, above the mean and otherwise (cf. Table 7).

As we can see in Table 7, according to the test, the only statistically significant (p-value <0.05) differences occurred in only two dimensions/variables, Politics/Taxes and Institutional Quality/Economic Freedom Index.

In the variable Taxes (p-value =0.006), we can observe that the average total tax in the countries that are below the average (FDI/GDP) is about 40%. On the contrary, the average tax in the countries above the average (FDI/GDP) does not reach 30%. Considering this, we can conclude that this could be a relevant determinant in FDI attraction.

¹⁵ The non parametric test of Kruskal-Wallis is based on the null hypothesis and tests if the sample comes from populations with the same distribution. It serves to assess whether there is evidence of statistically significant differences in the mean values of the observed variables (Maroco, 2010).

Table 7: Differences in means (Non parametric test Kruskal Wallis)

Determinants	Variables	Indicator/proxy	Means			Kruskal-Wallis test [p-value]
			All Countries	FDI_GDP below the average	FDI_GDP above the average	
Market	Economy Growth	GDP growth	0.0577	0.0563	0.0601	0.130
	Market Dimension	GDP per capita	7894.58	7610.28	8378.51	0.960
	Accessibility	Telephone lines per 100 inhabitants	20.69434	19.4849	22.75296	0.322
	Natural resources	Fuel Exports (% merchandise exports)	0.16645	0.19311	0.12106	0.158
Social	Education/literacy	literacy rate	0.8235	0.8026	0.8591	0.164
	R&D	Business Expenditure in Research & Development (BERD in GDP)	0.87242	0.92857	0.77712	0.668
	Labor costs	Minimum Wages	402.8837	416.8305	372.4074	0.836
	Quality work force	Labor force with tertiary education (% total labor force)	0.18484	0.19105	0.17353	0.164
Politics	Taxes	Taxes on income, profits and capital gains WB (% of revenue)	0.3622	0.4006	0.2968	0.006
	Currency (exchange rates)	Dummy (Euro/other)	0.12	0.13	0.11	0.755
Institutional Quality	Corruption	Corruption Perception Index	4.2072	4.0716	4.4381	0.273
		Irregular Payments and Bribes	4.212	4.096	4.412	0.261
		Global Corruption Barometer	3.2828	3.2922	3.2661	0.950
		Human Development Index	219495.85	320690.46	46019.38	0.541
	Other Institutional Quality indicators	Economic Freedom Index	0.6	0.5857	0.6243	0.028
		Business International Index	0.6348	0.6359	0.633	0.988
	Ease	Ease Doing Business	5.2953	5.0438	5.7234	0.084

In the other relevant variable, the Economic Freedom Index (p-value =0.028), we can observe that the group of countries that are below the average (FDI/GDP), the value of this variable is 0.58. In the other group of countries, above the average (FDI/GDP), the

value of the variable is 0.62. With the indicator ranging between 0 and 1, where the high value represents the maximum freedom, according to the right of every human to control his own labour and property, the conclusion that countries with a higher level of Economic Freedom, attracts more FDI, makes sense.

3.2.2. Correlations between variables

Starting with the dependent variable, we present it not only as a logistic model, where the FDI in GDP assumes only two values, above the mean and otherwise, but also in the form of logarithm. As we will use the logistic regression, we also keep the dependent variable in its logistic form (cf. Table 8).

The dependent variable, measured either as a dummy (above the average or otherwise) or logarithm of the ratio (estimated by the traditional model of the least squares) is related to the market, human capital, taxes, corruption and institutional quality (cf. Chapter 1).

Through the Pearson coefficient estimates, there is a significant positive relation of the dependent variable (FDI/PIB) and the variables GDP growth (0.182), in the Market dimension, Literacy Rate (0.206) in the social dimension, Taxes (0.215) in the Politics dimension, and the Economic Freedom Index (0.062) in the Institutional Quality dimension. They are all significant at 10%, except the Economic Freedom Index, which is significant at 5%. This observation means that, in a bivariate perspective, and on average, countries with high rates of market growth, high literacy, taxes and EFI (more transparent) above the average, attract more FDI. In contrast, the currency risk (-0.199) in the Politics dimension, and the Global Corruption Barometer (-0.272) in Institutional Quality dimension, reveal also a significant correlation at 5% and 10%, respectively, but negative, which suggests that the non euro and the less corrupt countries, on average, attract more FDI.

Passing now to the independent variables, we can start saying that we will not consider the variables/proxies that are highly correlated ($\rho > 0.60$) between each other, because it could signify that the variables are measuring the same factor, and multicollinearity problems may arise (Maroco, 2010). That is the case of the variables GDP Per Capita and Accessibility (Telephone Lines), reason why we will exclude them.

Also, in almost all proxies of corruption and Institutional Quality, with the exception of the Global Corruption Barometer, we can observe very high correlation levels between themselves. However, in this particular case, it does not constitute a problem because in the model they will be estimated separately.

Another important remark is the fact that, due to the necessity to keep the number of observations as highest as possible, we had to calculate the matrix without tree variables, the R&D (BERD in GDP), the Labor Costs (minimum wages) and the Global Corruption Barometer. These tree variables were calculated separately and then included in the global correlation matrix.

Analyzing in detail the correlations between the independent variables, and again through the Pearson coefficient estimates, there is a significant negative relation between the 'GDP Growth' and the 'GDP per capita' and 'Accessibility' (that will be excluded) and also with the variables 'Literacy rate' (-0.182), 'R&D' (-0.359), 'Labor Costs' (-0.479), 'Currency risk' (-0.296). These values are explained by extent literature, and suggests that, on average, high literacy rates, R&D expenditures, labor costs and non euro currencies, raise the risk of business and the cost of production, so, they attract less FDI. The other three variables, CPI (-0.331), Bribes (-0.251), and Business Freedom index (-0.245), tells us that, on average, countries that are more transparent/less corrupts, more resistant's to bribery and more transparent, attracts more FDI.

The proxy 'fuel exports', for the variable 'Natural Resources', has a significant negative relation with the proxies 'Literacy Rate' (-0.200), 'Labor costs' (-0.262), 'Taxes' (-0.308), 'CPI' (-0.259), 'Bribes' (-0.231), 'EFI' (-0.297) and 'Freedom index' (-0.204), and has a significant positive relation with the proxies 'Currency risk' (0.188) and 'Ease of Doing Business' (0.193).

Also, the variable 'Literacy' is significant related with other 10 variables, as well as the 'R&D', the 'Labor costs', the 'Quality work force', the 'Taxes' and the 'currency risk'. All of this variables present significant, both positive and negative correlations, between each other. Although some of these correlations are strong, these are not high enough to create any problems for the estimation of the model.

Table 8: Correlation Matrix

Determinants	Variables	Indicator/proxy	Mean	1.a	1.b	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Dependent variable	FDI inflows	1.a. FDI/GDP (dummy)	,3444	1	0,678***	0,182*	0,004	0,114	-0,164	0,206*	0,059	0,069	-0,017	0,215**	-0,199*	0,13	0,129	-0,272*	0,062	0,222**	-0,008	-0,041	
		1.b. FDI/GDP (ln)	-3,3273		1	0,166	0,073	0,141	-0,246**	0,162	0,033	0,142	0,096	0,214**	-0,052	0,202*	0,186*	-0,294*	0,122	0,296***	0,111	-0,149	
Market	Economy Growth	2. GDP growth	,0548			1	-0,304***	-0,254**	-0,005	-0,182*	-0,359**	-0,479***	-0,048	-0,012	-0,296***	-0,331***	-0,251**	-0,026	-0,162	-0,025	-0,245**	0,146	
	Market Dimension	3. GDP per capita (ln)	8,2761				1	0,869***	-0,107	0,639***	0,722***	0,856***	0,496***	0,302***	0,393***	0,879***	0,782***	-0,313**	0,889***	0,721***	0,814***	-0,698***	
	Accessibility	4. Telephone lines per 100 inhabitants (ln)	2,8454					1	-0,113	0,761***	0,650***	0,738***	0,516***	0,271**	0,192*	0,722***	0,614***	-0,225	0,902***	0,551***	0,666***	-0,578***	
	Natural resources	5. Fuel Exports in total merchandise exports	,1263						1	-0,200*	-0,147	-0,262*	0,044	-0,308***	0,188*	-0,259**	-0,231**	0,235	-0,151	-0,297***	-0,204*	0,193*	
	Education/literacy	6. Literacy rate	,8886							1	0,450***	0,531***	0,408***	0,325***	0,039	0,492***	0,426***	-0,279*	0,753***	0,429***	0,452***	-0,452***	
Social	R&D	7. Business Expenditure in Research & Development (BERD in GDP)	,0087							1	0,603***	0,524***	0,300*	0,380**	0,670***	0,626***	-0,205	0,639***	0,546***	0,609***	-0,566***		
	Labor costs	8. Minimum Wages	5,5952								1	0,408***	0,193	0,403**	0,791***	0,727***	-0,323**	0,783***	0,608***	0,707***	-0,595***		
	Quality work force	9. Labor force with tertiary education (% total labor force)	,18866									1	0,294***	0,197*	0,425***	0,362***	0,064	0,528***	0,39***	0,462***	-0,44***		
Politics	Taxes	10. Taxes on income, profits and capital gains WB (% of revenue)	1,8428										1	0,214**	0,409***	0,349***	-0,327**	0,305***	0,428***	0,404***	-0,538***		
	Currency (exchange rates)	11. Dummy (Euro/other)	,3068											1	0,385***	0,379***	0,011	0,235**	0,292***	0,349***	-0,405***		
Institutional Quality	Corruption	12. Corruption Perception Index (CPI)	1,6834												1	0,907***	-0,423***	0,748***	0,796***	0,858***	-0,777***		
	Bribes	13. Irregular Payments and Bribes	1,6675													1	-0,425***	0,611***	0,688***	0,777***	-0,752***		
	Global Corruption Barometer	14. Global Corruption Barometer	1,4454														1	-0,295*	-0,338**	-0,299*	0,285*		
	Human Development Index	15. Human Development Index	,5146															1	0,676***	0,722***	-0,623***		
	Other Institutional Quality indicators	16. Economic Freedom Index	,4839																	1	0,799***	-0,765***	
	17. Business International Index	,5167																			1	-0,866***	
	Ease Doing Business	18. Ease Doing Business	3,8876																				1

Legend: *** (**)[*] statistically significant at 1%(5%)[10%]; grey cells means that multicollinearity problems may arise.

The problematic correlations are signed in grey color in the correlation matrix. The high correlations observed between the proxies of corruption and institutional quality, are not problematic because they will be used singly in each model. However, the results evidence the similarity between the dimensions that they are measuring.

3.3. Econometric results

We now estimate the models in order to answer to our research questions:

Q1. To assess, for the same set of countries, and controlling for ‘traditional’ determinants of FDI, whether the use of distinct indicators of corruption, such as Corruption Perception Index (CPI), Irregular Payments and Bribes (Bribes) and Global Corruption Barometer (GCB), influence the results regarding the relation between FDI and Corruption.

Q2. To assess, for the same set of countries, and controlling for ‘traditional’ determinants of FDI, whether the signal of the variable corruption is robust when we control for other indicators of institutional quality such as Human Development Index (HDI), the Economic Freedom Index (EFI), the Business Freedom Index (BFI), and the Ease of Doing Business (EDB)

In order to do this, we estimate six models (cf. Table 9). The models I, III and V, for the three indicators of corruption, and the models II, IV and VI, for each of the variables of corruption but this time controlling for the other variables of institutional quality.

According to the Hosmer and Lameshow test (p-value) and the percentage of observations corrected, we can conclude about the goodness of fit of the estimated models. When we accept the null hypothesis (p-value>0.10) of the Hosmer and Lameshow test then we can say that the model represents the reality well.

In this case, we reject at 10% significance (but not at 5%) the null hypothesis for the first model (p-value = 0.085), concluding that the model is not very good. But for all the remaining models we accept the null hypothesis that they represent the reality well.

In the first model only one variable is statistically significant (p-value<0.10), the variable Taxes (-4.214). In this case, on average, ceteris paribus, we can conclude that

the higher the taxes the lower is the FDI attraction. Being the only significant variable in this model, is the only one that could justify FDI.

The model II, similar to the previous one, but including the four variables of institutional quality, present a better fit with several variables - literacy rate (5.948), taxes (-5.095), CPI (3.461), and tree of the IQ variables HDI (-11.255), EFI (29.032) and BF (-28.374) – being statistically significant. Specifically, on average, all the remaining factors being constant, there is enough statistical evidence to argue that countries with high quality of human capital and lower taxes tend to attract more FDI. Moreover, more transparent (high CPI) countries tend to present above the average FDI flows. It is important to highlight the fact that the proxy for corruption (CPI) turns significant when the Institutional Quality variables are included in the model.

In model III and IV, the proxy for corruption is ‘Bribes’. In the model III we have three variables that are significant at 10%: education, taxes and bribes. So, compared to Model I, where we used CPI as proxy for corruption and the estimate coefficient failed to be significant, in the case of ‘bribes’ the estimate is significant and positive, meaning that, on average, all the remaining factor being constant, countries that present a lower level of bribes tend to attract higher FDI flows. Controlling for the institutional quality variables maintains these results with high levels of coefficients’ significance. Summing up, distinct proxies for corruption yield distinct results concerning the impact that corruption potentially has on FDI.

In the last two models (V and VI), the proxy for corruption is ‘Global Corruption Barometer’ (GCB). Similarly to Model I, in Model V (without controlling for other Institutional Quality factors) the variable GCB is not significant. Moreover, when controlling for other Institutional Quality factors the corruption proxy continues to fail in being statistically significant. Beside ‘Natural Resources’ and ‘Taxes’, which emerge as significant ($p\text{-value} < 0.05$), and negatively related to FDI, ‘Economic Freedom Index’ (EFI) emerges as the only institutional related variable which is robust and positively significant at 5%, reflecting that, on average, countries which are characterized by higher levels of economic freedom tend to attract higher amounts of FDI.

Table 9: Models Logistic Estimation

Determinants	Variables	Indicator/proxy	Model I	Model II	Model III	Model IV	Model V	Model VI
Market	Economy Growth	2. GDP growth	7.024	4.798	7.795	3.859	4.117	-8.543
	Natural resources	Fuel Exports in total merchandise exports	-2.318	-0.466	-2.167	-0.252	-12.916**	-10.631*
Social	Education/literacy	Literacy rate	.818	5.948**	4.408*	11.019**	2.518	5.736
	Quality work force	labor force with tertiary education (% total labor force)	-2.327	0.093	-2.206	0.198	-2.390	-4.047
Politics	Taxes	Taxes on income, profits and capital gains WB (% of revenue)	-4.214*	-5.095**	-4.497*	-5.342**	-6.923**	-13.036***
	Currency (exchange rates)	Dummy (Euro/other)	-0.633	0.220	-0.699	0.251	-0.633	0.134
Institutional Quality	Corruption Perception Index	Corruption Perception Index (CPI)	1.452	3.461*				
	Bribes	Irregular Payments and Bribes			2.479*	4.536**		
	Global Corruption Barometer	Global Corruption Barometer					-2.034	1.369
	Human Development Index	Human Development Index		-11.255**		-12.676**		-9.047
Other Institutional Quality indicators	Economic Freedom Index	Economic Freedom Index		29.032***		37.658***		33.853**
	Business Freedom Index	Business Freedom Index		-28.374***		-23.682**		-6.967
	Ease Doing Business	Ease Doing Business		-0.203		0.259		-0.055
	Constant		-2.132	3.491	-7.154	-17.594	3.399	-10.043
	N		96	96	92	92	74	74
	FDI/GDP above the average		34	34	31	31	25	25
	Otherwise		62	62	61	61	49	49
<i>Goodness of fit</i>								
	Hosmer and Lameshow test (p-value)		0.085	0.304	0.341	0.685	0.456	0.237
	% corrected		67.7	78.1	75.0	78.3	73.0	79.7

Legend: *** (**)[*] statistically significant at 1%(5%)[10%]; grey cells are used to highlight significant estimates.

Conclusions

Although there are numerous studies on the issue of corruption and institutional quality, the majority of the existing studies used only one single proxy for corruption and other institutional quality indicators, often in isolation. Moreover, the statistical tests were performed in general on the basis of rather small and very specific samples.

Using a large sample of countries, receptors of FDI, we aimed to tackle two issues.

The first issue was to evaluating the robustness of the variable corruption, when using different proxies. This issue was endorsed in the estimation of the models I, III and V. We realize that although corruption variable did not emerge statistically significant when we used the proxy CPI (Model I) or GCB (Model V), when we used the proxy Bribes (Model III), it emerged positive and significantly related to FDI flows (i.e., countries less prone to bribery tend, on average, to attract more FDI). So, the answer to our first research question is yes.

The second issue concerned in evaluating the robustness of the proxy of corruption, when we introduce into/controlled for the models, variables of institutional quality (e.g., Human Development Index, Economic Freedom Index, Business Freedom Index, or Ease Doing Business). This issue was endorsed by the estimation of the models II, IV and VI. In the Models II and IV, both proxies for corruption, CPI and Bribes, became positive and significantly related to FDI flows (although in the case of GCB - Model VI – the estimate of the corresponding coefficient remained non significant). According to this result, we have reasonable evidence that the answer to our second research question is also positive.

Despite the encouraging results, the present study is not absent from limitations, which might constitute a path for future research. Specifically, panel data estimation techniques might be the most adequate for testing the above mentioned research questions.

References

- Andreula, N.; Chong, A.; Guillén, J. (2009), “Institutional quality and fiscal transparency”, Inter-American Development Bank. Research Department IV. Title. V. Series. IDB working paper series 125
- Baughn, C.; Bodie, N.; Buchanan, M.; Bixby, M. (2010) “Bribery in international business transactions”, *Journal of Business Ethics* 92 (1):15-32.
- Bitzenis, A.; Tsitouras, A.; Vlachos, V.A. (2009), “Decisive FDI obstacles as an explanatory reason for limited FDI inflows in an EMU member state: The case of Greece”, *The Journal of Socio-Economics* 38 (4): 691–704.
- Bitzenis, A. (2006) “Decisive barriers that affect multinationals business in a transition Country”, *Global Business & Economics Review*, 8 (1–2): 87–118.
- Blonigen, B.A. (2005), “A Review of the empirical literature on FDI determinants”, National Bureau of Economic Research, NBER Working Paper No. 11299.
- Busse, M.; Groizard, J.L. (2008), “Foreign Direct Investment, Regulations and Growth”. *The World Economy*, 31 (7), 861-886.
- Cuervo-Cazurra, A. (2008), “Better the devil you don't know: Types of corruption and FDI in transition economies”, *The Journal of International Management* 14 (1): 12–27.
- Davidson, W.H. (1980) “The location of foreign direct investment activity: Country characteristics and experience effects”, *Journal of International Business Studies* 11(2): 9–22.
- Demirbag, M.; McGuinness, M.; Altay, H. (2010) “Perceptions of institutional environment and entry mode: FDI from an emerging country”, *Management International Review* 50 (1): 207–240.
- Drabek, Z.; Payne, W. (2001). “The impact of transparency on foreign direct investment” Staff Working Paper ERAD-99-02. Geneva: World Trade Organization.

- Faeth, I. (2009), “Determinants of foreign direct investment – a tale of nine theoretical models”, *Journal of Economic Surveys*, 23 (1): 165–196.
- Habib, M.; Zurawicki, L. (2001), “Country-level investments and the effect of corruption - some empirical evidence”, *International Business Review* 10 (6): 687–700.
- Habib, M.; Zurawicki, L.; (2002) “Corruption and foreign direct investment”, *Journal of International Business Studies* 33 (2): 291–307.
- Hill, C. (2007), “Foreign Direct Investment”, in Charles Hill (org.), *International Business: Competing in the global marketplace*, McGraw-Hill, pp. 236-261.
- Jain, A. (2001), “Corruption: A Review.” *Journal of Economic Surveys*, 15, 1, pp. 71-121.
- Javorcik B.S.; Wei, S.-J. (2009), “Corruption and cross-border investment in emerging markets: Firm-level evidence”, *Journal of International Money and Finance* 28 (2): 605–624.
- Kaufmann, D.; Kraay, A.; Mastruzzi, M.; (2005): *Governance Matters IV: Governance Indicators for 1996-2004*. The World Bank.
- Knack, S.; Keefer, P.; (1995) “Institutions and economic performance: Cross-country tests using alternative institutional measures”. *Economics and Politics*, 7 (3): 207-227.
- Maroco, J. (2010), *Análise estatística com utilização do SPSS*, Lisboa: Edições Sílabo.
- Markusen, J.; Venables, A.J. (1998), “Multinational firms and the new trade theory”, *Journal of International Economics* 46 (2): 183–203.
- Myint, U. (2000), “Corruption: Causes, Consequences and Cures.” *Asian-Pacific Development Journal*, 7 (2): 33
- Sanyal, R.; Samanta, S.; (2010) “Effect of perception of corruption on outward US Foreign Direct Investment”, *Global Business and Economics Review*, 10 (1): 123-139.

- Santis, R.; Vicarelli, C.; “The Determinants of FDI Inflows in Europe: The role of the institutional context and Italy’s relative position” home page, in http://works.bepress.com/cgi/viewcontent.cgi?article=1008&context=roberta_d_e_santis accessed on November 7, 2010.
- Subasat, T. (2003), “What does the Heckscher-Ohlin model contribute to international trade theory? A critical assessment”, *Review of Radical Political Economics*, 35 (2): 148-165.
- Transparency International. (1999). *Internet corruption perception index — home page*, in http://www.transparency.org/policy_research/surveys_indices/cpi/2009/cpi_2009_table accessed on October 12, 2010.
- Uhlenbruck, K.; Rodriguez, P.; Doh, J.; Eden, L. (2006), “The impact of corruption on entry strategy: evidence from telecommunication projects in emerging economies”, *Organization Science*, 17 (3): 402-414.
- Warren, D.; Laufer, W.; (2009), “Are corruption indices a self-fulfilling prophecy? A social labeling perspective of corruption”, *Journal of Business Ethics*, 88 (4): 841–849.
- Wei, S. (2000), “How taxing is corruption on international investors?”, *The Review of Economics and Statistics*, 82(4), 1–12.
- Wheeler, D., Mody, A., (1992). “International investment location decisions: the case of U.S. firms”, *Journal of International Economics*, 33 (1/2): 57–76.
- Wu, S. (2006), “Corruption and cross-border investment by multinational firms”, *The Journal of Comparative-Economics*, 34 (4): 839–856.

Netgraphy

http://doingbusiness.org/	Doing Business Organization
http://www.theodora.com/	Economic Information
http://www.eiu.com/public/	Economist intelligence Unit
http://www.nationmaster.com/cat/economy&all=1	
http://epp.eurostat.ec.europa.eu/	Economy Statistics
http://www.ilo.org/	Eurostat
http://www.imf.org/external/data.htm	International Labour Organization
http://www.global-production.com/	International Monetary Fund
http://www.oecd.org/	Labour Costs statistical information
	OECD
http://www.prsgroup.com/ICRG.aspx	Political Risk Services - International
http://www.heritage.org/index/	Country Risk Guide
https://www.cia.gov/library/publications/the-world-factbook/	The Heritage Foudation
http://www.transparency.org/	The World Factbook
http://www.beta.undp.org/undp/en/home.html	Transparency International
http://unstats.un.org/unsd/	UN Development Program
http://www.unctad.org/	UN Statistics
http://unctadstat.unctad.org/	UNCTAD
	UNCTAD Reports
http://hdr.undp.org/	United Nations Human Development reports
http://data.worldbank.org/	World Bank
http://www.wto.org/	World Trade Organization

Appendix: List of countries

Albania	Ecuador	Latvia	Russian Federation
Algeria	Egypt, Arab Rep.	Lebanon	Rwanda
Angola	El Salvador	Lesotho	Saudi Arabia
Argentina	Estonia	Lithuania	Senegal
Armenia	Ethiopia	Luxembourg	Serbia
Australia	Finland	Macedonia, FYR	Sierra Leone
Austria	France	Madagascar	Singapore
Azerbaijan	Georgia	Malawi	Slovak Republic
Bangladesh	Germany	Malaysia	Slovenia
Belarus	Ghana	Mali	South Africa
Belgium	Greece	Mexico	Spain
Benin	Guatemala	Moldova	Sri Lanka
Bolivia	Guinea	Mongolia	Sweden
Bosnia and Herzegovina	Haiti	Morocco	Switzerland
Botswana	Honduras	Mozambique	Syrian Arab Republic
Brazil	Hong Kong SAR, China	Nepal	Tanzania
Bulgaria	Hungary	Netherlands	Thailand
Burkina Faso	Iceland	New Zealand	Togo
Cameroon	India	Nicaragua	Tunisia
Canada	Indonesia	Niger	Turkey
Central African Republic	Iran, Islamic Rep.	Nigeria	Uganda
Chad	Ireland	Norway	Ukraine
Chile	Israel	Oman	United Kingdom
China	Italy	Pakistan	United States
Colombia	Japan	Panama	Uruguay
Congo, Dem. Rep.	Jordan	Papua New Guinea	Uzbekistan
Costa Rica	Kazakhstan	Paraguay	Venezuela, RB
Cote d'Ivoire	Kenya	Peru	Vietnam
Croatia	Korea, Rep.	Philippines	Yemen, Rep.
Czech Republic	Kuwait	Poland	Zambia
Denmark	Kyrgyz Republic	Portugal	Zimbabwe
Dominican Republic	Lao PDR	Romania	