
AN ANALYSIS OF FDI DRIVERS IN SMALL STATES

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Biographic note

Cristiana Neves was born in Porto, in 1996. She completed her Bachelor's degree in Business Administration in 2016, at the Faculty of Economics of the University of Porto (FEP-UP).

Passionate about international markets, intercultural differences and similarities and the business world, Cristiana enrolled in the Master's in International Business at FEP and had a semester abroad at the Amsterdam Business School, in the Netherlands. She also started working during her Master as a Finance Associate in an international retail real estate company, dedicated to serve the investors' needs. Currently, she had the opportunity to embrace another position as analyst of the corporate control department of the same company.

Her course is consistent with her personal characteristics and ambitions. Cristiana is a proactive, resilient and curious person, always ready to learn and grow in every field of her life.

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“It always seems impossible until it’s done”.

Nelson Mandela

Abstract

Changes in the world economy are encouraging research focused on better perceiving investment patterns in a worldwide basis. Literature in the area is trying to explain the determinants of FDI and the factors that influence the investment location decision. Research of this type is important so as to understand which countries' features might attract foreign investors. In line with this trend, the purpose of this research is to identify the drivers of FDI in small states, which have been neglected. Small states have particular features that justify the need for a more rigorous analysis since they heavily depend on international finance to sustain their economic development and financial stability. This research examines the determinants of FDI in small states by studying the relationship between potential location advantages and FDI using data for 40 small states between 2005 and 2015. Results indicate the importance of the fiscal policy on the attraction of foreign investors and point out the degree of openness of small states as well as the degree of human capital development as the strongest drivers of FDI in small states.

Resumo

A investigação científica tem vindo a ser influenciada pelas constantes mudanças na economia mundial que despertam o interesse de melhor conhecer e perceber os padrões de investimento, à escala mundial. A literatura nesta área tem procurado explicar os determinantes do IDE bem como os fatores que influenciam os investidores na tomada de decisão acerca da localização do investimento. Este tipo de pesquisa é fundamental para perceber quais as características dos países passíveis de influenciar e atrair investidores estrangeiros. Em linha com esta tendência, o propósito deste trabalho é identificar os determinantes do IDE em pequenas economias, que têm vindo a ser negligenciadas. Este tipo de países têm características particulares que justificam a necessidade de uma análise mais rigorosa uma vez que dependem do investimento internacional para sustentar o seu desenvolvimento económico e estabilidade financeira. Este trabalho estuda os determinantes do IDE em pequenas economias ao estudar a relação entre potenciais vantagens de localização e o IDE, utilizando dados de 40 pequenas economias entre 2005 e 2015. Os resultados empíricos evidenciam a importância da política fiscal na atração de investidores estrangeiros e apontam o grau de abertura e o nível de desenvolvimento do capital humano como os determinantes mais fortes do IDE nestas economias.

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1. Introduction

Foreign Direct Investment (FDI) has been growing in terms of relevance and importance while the world is continually changing and the markets are more open. As it is highlighted in the literature, changes in the world economy have encouraged investigation focused on better perceiving the fluctuations in trade and investment patterns, and the restructuring of production in a worldwide basis (Helpman, 2006).

FDI has been subject of greater attention and the nations are currently putting more efforts in attracting foreign investors since it has been argued that FDI can lead to positive direct effects and spillovers that will positively affect economic diversification, economic growth and, on the long run, contribute to a potential and stable source of financing for future development needs (Gorg & Greenaway, 2004). Over the past years, developing countries have been changing their development strategies while opening their markets which will allow them to reap the benefits from FDI (Kobrin, 2005). Being successful in attracting FDI is crucial for the performance of any economy, in particularly for developing economies and small nations (World Bank, 2016).

According to the World Bank (2016), small states are nations that have a population of 1.5 million or less, or countries that are member of the small states forum, and typically have a limited land area and limited human capital although they are quite diverse in land area, location, levels of income, and economy. With regard to international trade, some small states are “commodity exporters, while others are service- and tourism-based economies and they are located in all regions, although most are located in the Pacific, Caribbean, and Africa/Indian Ocean” (World Bank, 2016, p. 4).

As stated by the World Bank (2016), small states face two major restrictions in terms of labor market since they have a small workforce and in terms of capacity since it is also limited and insufficient for local production or export at scale. Taking into account these characteristics and in line with developing economies’ history and progress, small states rely on international finance and international investment to supplement their fiscal envelopes and economic and social development (World Bank, 2016). Nevertheless, the specifications of small states turn them less attractive to investors and it makes it difficult to reach prosperity. In fact, there are few success stories of small states as it is the case of Bahrain, Brunei, Estonia, Malta and Qatar, that have achieved high incomes and higher levels of FDI (World Bank, 2016). Taking

the rare success stories, small states usually reach lower levels of FDI and even the success stories' achievements are insignificant and residual when compared to developed countries in Europe, the USA and the BRIC countries, for instance (see Figure A1 in Annexes). According to World Bank (2016), small states attracted just 4.4 percent of total FDI into developing economies from 2005 to 2014. "Nevertheless, FDI plays a major role in small states, where domestic resource mobilization is limited. FDI averaged 8.4 percent of GDP in small states, but 3.1 percent in all developing economies over the same period of 2005–2014" (World Bank, 2016, p.21). Hence, the relevance of FDI and the divergent performances of small states in attracting it justify and motivate targeted research to better understand these differences and the drivers of FDI in these countries.

The determinants of FDI in certain locations have been studied for the past decades and there are many studies about this subject on several countries, especially for the most attracting economies in terms of economic development, economic potential and market size (e.g. Elfakhani & Macjie, 2015; Galan, Gonzalez-Benito & Zuniga-Vincente, 2017 and Romano & Gamboa, 2013). Nonetheless, to the best of our knowledge, little emphasis has been given to the small states and there is in the literature a gap about FDI drivers in these states. Investigating this matter is of particular relevance since it can bring insights to the governments of small states about how to manage the FDI incentives agenda. "A country that strives to attract more inward FDI may consider focusing on those country-specific incentives that it is weak in" (Elfakhani & Mackie, 2015, p.99) and that the foreign investors value in order to be able to improve its inflows of FDI. Furthermore, understanding what drives firms to invest in a precise location can be of value to small states' public and private institutions since it will be possible to know in which strengths to rely on. Therefore, the goal of this research is to understand which small states' features may or may not attract foreign investors since it is clear that they do not compete in terms of market size, for instance. The main research question is: what drivers are likely to influence FDI into small states? In order to answer this question, this research will focus on 40 small states between 2005 and 2015 and it will follow a quantitative approach by estimating an econometric model with panel data. This work is organized as follows. The following chapter (chapter 2) will aim to introduce the key literature on FDI and its location determinants. Chapter 3 will explain the methodology adopted in this research and chapter 4 will present the model estimation, followed by the conclusion (chapter 5).

2. Literature review on FDI and its location determinants

This chapter consists of four sections. The first section (2.1) introduces the concepts related to FDI. Thus, the next section (2.2) analyses the key literature on FDI location determinants. The following section (2.3) consists of a review of empirical studies focusing on small states and developing economies. The main goal of the latter section (2.4) is to relate FDI common drivers with the features of the small states and their potential location advantages.

2.1. Concepts

By definition, FDI is “a category of investment that reflects the objective of establishing a lasting interest by a resident enterprise in one economy (direct investor) in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor” (OECD, 2008, p.234). Hence, FDI is performed to obtain a lasting interest in foreign enterprises. By creating links between countries, FDI is considered to be a contributory factor for economic integration. Moreover, FDI can be able to provide economic stability, encourage economic growth and enhance the countries’ welfare (OECD, 2008). As so, in several countries, FDI is seen as a key driver for economic development and a primary source of economic stability and, therefore, political strategies are designed so as to look attractive to investors (Crespo & Fontoura, 2007).

When performing FDI, an enterprise must choose the degree of control over the foreign company (Brouthers, 2002). Depending on the degree of control required or desired by the company, it can choose a wholly-owned subsidiary or a joint venture. A joint venture implies the sharing of capital and the creation of a new legal entity in the host country and is a combination of efforts and resources between partners. On the other hand, a wholly-owned subsidiary implies a higher level of integration and is fully performed by the investing company (Brouthers & Hennart, 2007). The reason behind this choice is also influenced by the countries’ location advantages since, for instance, the stronger the institutional framework the more likely a wholly-owned subsidiary and the less likely a joint venture since stronger institutional framework lower the costs of doing business (Meyer, Estrin, Bhaumik, & Peng, 2009). In fact, institutions matter when choosing an investment location because they are seen as “the rules of the game”, especially in emerging markets (Meyer et al., 2009, p.61).

Furthermore, when an enterprise chooses to enter a foreign market through FDI rather than exports or contractual forms, it is compromising a greater number of resources (Anderson & Gatignon, 1986). FDI requires investment in the company's capital and there are two modes of establishment. An enterprise can decide to perform a greenfield project or an acquisition. A greenfield is an investment made from the ground and there is a net addition to the capital stock of the target economy. On the other side, an acquisition of existing capital on the host country implies a change in the ownership of an already existing company (Harzing, 2002).

2.2. Literature review on FDI location determinants

The increasing importance of FDI and its incentives agenda have inspired research designed to better understand the direction of FDI and its drivers and the literature is trying to explain why and how firms go abroad and where do they perform the investment. Nonetheless, the present work will focus on the location of the investment, which means that it will aim at explaining where firms perform the investment.

Although there are many theories regarding FDI (see Faeth, 2009 for a review), the focus will be on the rationale of Dunning (1977) given that it is a broader theory that allows to focus on FDI location. The eclectic paradigm or the OLI paradigm (Dunning, 1977) suggest three types of factors that influence and determine FDI. These factors are the ownership (O) advantages of a company, the location (L) advantages of a particular market when compared to the home country, and the internalization (I) advantages of maintaining and integrating operations within the multinational enterprise. Therefore, the eclectic paradigm helps to resume the questions to consider upon internationalizing. This paradigm merge factor-cost explanation in which location advantages exploit differences between countries and ownership and internalization advantages that are related with firm-level strategy decisions (Franco, Rentocchini & Vitucci Marzzeti, 2008). Therefore, this theory combines country-specific comparative advantages with firm-specific competitive advantages (Franco et al., 2008).

The OLI paradigm states that a firm will invest in a certain location if it recognizes ownership, location and internalization benefits. According to Dunning (1977), the ownership advantages can be divided into asset and transactional advantages that are related

to tangible and intangible assets and the strengths in managing a network of geographically dispersed subsidiaries. Theories using firm-level as the core unit of analysis state that FDI is a “firm-level strategy rather than a capital-market financial decision” (Rugman & Verbeke, 2008, p. 158), and a firm performs FDI to have a degree of managerial control over a foreign location. At this level, the emphasis is on the ability of the multinational to create and control firm-specific advantages which is required but not enough for FDI to take place. The possession of firm-specific advantages will allow to overcome the liability of foreignness that are “all additional costs a firm operating in a market overseas incurs that a local firm would not incur” (Zaheer, 1995, p. 342). Additionally, the internalization advantages are related with the advantages of creating and exploiting firm-specific advantages within the firm as an alternative of celebrating contracts with other companies when the transaction costs are too high (Rugman & Verbeke, 2008). As so, this advantage consists in the benefits of controlling the asset’s exploitation instead of contracting it to an independent foreign firm. FDI and multinationals exist when firms are capable to use internal transaction (within the firm) when market transactions across borders are not feasible due to high transaction costs (Rugman & Verbeke, 2008). Lastly, the location advantages reflect the foreign country comparative advantages, e.g. natural resources, demand conditions, cultural or institutional factors (Faeth, 2009). FDI is probable to happen if the country has location-specific assets as markets or resources that the firm hopes to acquire. Therefore, this can explain the investment in small states if the firm recognizes advantages in these regions which it does not recognize in its home country and in other potential host countries.

Actually, it is possible to discuss host-country attractiveness (location advantages) using FDI types. Dunning (1993; 1998), based on an earlier taxonomy developed by Behrman (1972), identified four major types of FDI motivations that are resource seeking, market seeking, efficiency seeking and strategic asset seeking. In the category of resource seeking the key driver of the company when performing FDI is the desire or need to acquire resources that are not available in the home country or that are cheaper in the host country (Franco et al., 2008). In the group of market seeking the main driver of FDI is the search for greater dimensions or particular features of some markets (Franco et al., 2008). A firm can choose to invest in a market if it recognizes a need to extend its operating market or if it desires to follow its suppliers or customers, for instance. In the category of efficiency seeking, a firm will invest in a foreign market if it recognizes a possible optimization in production costs or

investment incentives (Franco et al., 2008). Lastly, the strategic asset seeking motive is related with opportunities for exchange of localized tacit knowledge or access to different cultures, organizations and structures (Dunning, 1998). To sum up, depending on the motives, firms will choose different locations. Table 1 lists FDI types and the corresponding countries' location advantages.

Table 1 - Types of FDI and countries' location advantages

FDI type	Location advantages
Resource seeking	Availability, price and quality of (natural) resources; Availability and quality of infrastructures; Government incentives (political resources) on FDI; Availability of local partners.
Market seeking	Large and growing markets; Real wage low costs; Material low costs; Transport low costs and low trade barriers; Privileged access to import licenses; Availability and price of skilled and professional labour; Presence and competitiveness of related firms.
Efficiency seeking	Low production costs; Freedom to engage in trade; Presence of agglomerative economies; Investment incentives; Availability of specialized spatial clusters.
Strategic asset seeking	Availability of knowledge-related assets and markets that will enhance firm-specific advantages; Institutional and other variables influencing ease or difficulty at which such assets can be acquired by foreign firms.

Source: adapted from Dunning (1998, p.53).

Small states have, by definition, a small domestic market and limited domestic resources that can become a constraint to some types of FDI (e.g. market seeking) and that must be overcome with other advantages (Read, 2008).

With regard to location advantages, empirical literature organizes them into three major categories of variables that drive a firm to invest abroad, that are financial/economic conditions, social and political variables (Elfakhani & Mackie, 2015). Economic determinants are usually related to market size, market growth, availability of infrastructures and may also include country risk, economic instability, financial performance and the availability of

natural resources. These determinants are, typically, intrinsically related to market seeking FDI. Additionally, social determinants are naturally related with the degree of human capital development and the level of schooling and they are mainly associated with resource seeking FDI (Dunning, 1998). Political determinants are usually studied by analysing the countries' level of openness and the fiscal policies. These determinants might influence efficiency seeking and strategic asset seeking. Nevertheless, these variables will be explored in the next section.

2.3. Empirical evidence on FDI location determinants in developing countries

Since the studies about small states are relatively rare, this literature review is based on articles that focus on FDI determinants in developing economies given the fact that small states are typically developing countries (World Bank, 2016)¹. Developing countries have tried to attract FDI to compensate for their absence of capital for supporting their economic activity (Romano & Gamboa, 2013) and there are in the literature several studies about the determinants of FDI in developing economies.

Using Scopus and Web of Science (WoS) databases, it was only possible to find two articles focused on FDI location determinants in small states² (Read, 2008 and Singh, McDavid, Birch & Wright, 2008). In order to complete this review, the same databases were used to find articles that study FDI location determinants in developing countries. It was possible to find eight articles (Barthel, Busse, & Osei, 2011; Castiglione, Gorbunova, Infante, & Smirnova, 2012; Elfakhani & Mackie, 2015; Kersan-Skabic, 2013; Obwona, 2001; Okafor, Piesse, & Webster, 2017; Rjoub, Aga, Abu Alrub, & Bein, 2017 and Romano & Gamboa, 2013).³ Additionally, Google scholar database was used to diversify this literature review and

¹ The exception is for Iceland which is a developed country, but which also has restrictions related to be an island with low population.

² Using Scopus database (accessed on 6th January 2018) with the key words "FDI determinants" or "determinants of FDI" and "small states", it was possible to find four articles but only two were relevant due to the focus on FDI location determinants. The same search was made using WoS database but no article was found.

³ Two different searches were made (on 17th January 2018). Firstly, using the key words "FDI drivers" in WoS database, it was possible to find four articles but only one was relevant for this work. In Scopus database with the same key words, it was possible to find three articles in which the one relevant was the same. With regard to the second search, the key words were "FDI determinants" and development and there was an output of

due to the lack of studies regarding political determinants. Therefore, three more articles were included in this review (Mathur & Singh, 2013; Nonnenberg & Mendonca, 2004 and Root & Ahmed, 1978).

This literature review is based on thirteen empirical studies and table 2 shows the overall of the results of the twelve quantitative studies in terms of countries analysed, period of study, methodology used and FDI determinants⁴. Table 2 also shows the variables used to measure the determinants and the respective impact on FDI and it presents the studies organized in chronological order.

Table 2 - Literature review of FDI determinants in developing economies

Author	Countries and period of study	Methodology	FDI determinant	Proxy (impact on FDI)
Root & Ahmed (1978)	70 developing countries 1966-1970	Quantitative research, panel data	Fiscal policy	Corporation tax as % of profit (-)
				Tax incentives (0)
Obwona (2001)	Uganda 1976-1991	Quantitative research, time series data	Market size	GDP (+)
			Market growth	GDP growth rate (+)
			Trade performance	Trade balance (-)
Nonnenberg & Mendonca (2004)	38 developing countries 1975-2000	Quantitative research, panel data	Market size	GDP (+)
			Market growth	GDP growth rate (+)
			Instability	Inflation rate (-)
			Country risk	Country's risks rating (-)
			Country's openness	Degree of openness to trade (+)
Human capital development	Level of schooling of the labour force (+)			
Read (2008)	53 SIDS 1999-2003	Quantitative research, cross-sectional data	Market size	Population (0)
			Country's openness	GDP per capita (+)
				Degree of openness to trade (+)
Singh et al. (2008)	29 small states 2002	Quantitative research, cross-sectional data	Infrastructures	Digital access (+)
			Market growth	GDP growth rate (+)
			Market size	Population (0)
			Size of tourism industry	Tourist arrivals (0)
			Country's openness	Degree of openness to trade (+)
Castiglione et al. (2012)	79 Russian regions 1996-2001	Quantitative research, panel data	Market size	GDP (+)
			Infrastructures	Population (+)
				Number of kilometres of railroad (+)
Human capital development	Level of schooling of the labour force (+)			
KersanSkabic (2013)	8 SEE countries 2001-2010	Quantitative research, panel data	Market size	GDP per capita (+)
			Instability	Inflation rate (-)
			Institutional framework	Economic freedom index (+)
			Cost of labour	Wages (-)

thirty articles in WoS database. Nevertheless, only seven articles focused on FDI location determinants in developing countries. In Scopus database, with the same key words, there was an output of thirty-six articles in which five were relevant and coincided with the articles found on WoS database.

⁴ Table 2 does not include the qualitative study of Barthel et al., 2011.

Table 2 - Literature review on FDI determinants in developing economies (cont.)

Mathur & Singh (2013)	29 developing countries 1980-2000	Quantitative research, panel data	Market size	GDP (+)
			Market growth	GDP growth rate (+)
			Degree of democracy	Democracy index (-)
Romano & Gamboa (2013)	32 states of Mexico 1994-2004	Quantitative research, panel data	Market size	GDP (+)
			Infrastructure	GDP per capita (+)
			Investment environment	Telephone line density (+)
			Human capital development	Delinquency rate (-)
			Cost of labour	Average years of schooling (+)
Elfakhani & Mackie (2015)	The BRIC countries 1989-2008	Quantitative research, panel data	Market size	Level of wages (-)
			Market growth	GDP (+)
			Instability	GDP growth rate (+)
			Infrastructures	Inflation rate (-)
			Degree of democracy	% GDP generated in services (+)
			Corruption	Democracy index (-)
			Institutional framework	Corruption perceived index (-)
			Country's openness	International property protection index and civil liberty index (+)
			Human capital development	Degree of openness to trade (+)
			Extent of urbanization	Literacy rate (+)
			Quality of life	Cities >500000 inhabitants (+)
			Okafor et al. (2017)	20 SSA and 11 MENA countries 2000-2010
Availability of natural resources	Life expectancy at birth (+)			
Country's openness	Population growth rate (+)			
Corruption	GDP growth rate (+)			
Human capital development	Crude oil proven reserves and gold production (0)			
	Degree of openness to trade (+)			
Rjoub et al. (2017)	13 SSA countries 1995-2013	Quantitative research, panel data	Availability of natural resources	Control of corruption index (+)
			Market size	% of population enrolled in vocational education (+)
			Country's openness	Crude oil, gold and diamonds endowment (+)
			Fiscal policy	GDP growth (+)
			Institutional framework	Degree of openness to trade (+)
	Corporate tax as a % of GDP (-)			
	Countries' political rights and freedom (+)			
	Secondary school enrolment (+)			

Legend:

SIDS: Small Islands Developing States; SEE: Southeast Europe countries; BRIC: Brazil, Russia, India and China; SSA: Sub-Saharan Africa; MENA: Middle East and North Africa; +: positive relation; -: negative relation; 0: non-significant.

Obwona (2001) used both qualitative and quantitative research to explain the determinants of FDI and their impact on economic growth in Uganda. The author used qualitative research to obtain insights regarding decision-making processes with structured questionnaires aimed at companies. Thus, the answers have shown macroeconomic and political stability to be much more important than incentives schemes for foreign investors. In fact, Root & Ahmed (1978), have already shown that firms decline tax incentives due to the uncertainty and complexity involved. On the other hand, the level of corporate taxation has a significant impact on attracting FDI (Root & Ahmed, 1978) since it is associated with stability. Additionally, Obwona (2001) used secondary data for estimating the drivers of FDI. With an annual time-series data from 1975 to 1991, the author found economic and political determinants to be significant drivers of FDI. In fact, market size and market growth were proved to positively affect FDI and the trade performance was proved to be negatively related with FDI. This is due to the fact that a country will bet on more attractive policies if the trade balance is performing badly. Hence, if the trade performance is bad, countries will aim to improve their policies in order to attract more FDI.

Nonnenberg & Mendonca (2004) used quantitative research with panel data over 38 developing countries between 1975 and 2000 to study the determinants of FDI in developing economies. The authors found that economic determinants such as the size of the economy, its growth rate and other economic variables, positively affect the likelihood of investing in a certain country. Nevertheless, country risk as an economic variable is likely to decrease FDI. The authors have shown that social variables such as the level of education might also positively affect FDI.

Read (2008) studied the inflows of FDI into 53 SIDS using cross-sectional data (inflows of FDI into 53 SIDS using average FDI inflow between 1999 and 2003). Contrarily to what happened with research on developing economies, this author did not find a significant relation between the market size (measured by the population) and the inflows of FDI to SIDS. Thus, the economic determinant that was proved to be significant was the wealth of a country that seems to have a positive relation with the inflows of FDI. By studying this determinant, the author made it clear it was not a measure for the size of the market itself but for the market wealth since it does not distinguish low level of population and low levels of development. Additionally, political determinants such as openness to trade was found to be the most important driver of FDI inflows and that compensate for the reduced market

size of SIDS.

Singh et al. (2008) used a linear cross-sectional model to test the drivers of FDI for a subset of 29 small states. They found that economic and political determinants (infrastructures, economic growth and openness to trade) promote the FDI to small states. Consistently with the previous study (Read, 2008) they also found that the country's market size is not significant and, therefore, it is not a main constraint for small states if they are able to overcome it with higher exporting-oriented markets and a competitive policy framework. Moreover, the authors also tested the significance of the size of tourism industry as a determinant of FDI since "tourism is not only one of the main engines of growth for most small nations states but also a major source of FDI inflow" (Singh et al., 2008, pp.88). Nonetheless, this variable was only significant at the 17% level.

Barthel et al. (2011) studied the determinants of FDI into Ghana. The authors used both quantitative and qualitative research although the quantitative method was only used to study the profile of multinationals investing in the country. With a case study analysis, the authors found the political environment to be the most important determinant of FDI into the country, followed by natural resources endowment. Additionally, even though market size will not be relevant for a country as Ghana, market potential might be a relevant factor due to the country's export-orientation. Thus, economic determinants such as natural resources were proved to be a key factor that influence a foreign firm's decision to locate in Ghana and political determinants such as political stability, protection of investors and investment incentives were the most important determinants of FDI.

Castiglione et al. (2012) examined 79 regions of Russia over the period 1996-2001 with quantitative research and using panel data. The authors found that economic determinants such as market size (both measured by the GDP or population) and the availability of infrastructures have a significant impact on FDI. In fact, holding everything else constant, improvements in the infrastructures increase FDI. Additionally, the authors did not find social determinants as significant since there was no significant relation between the level of schooling and the inflows of FDI. Nevertheless, the authors explained that it has to do with the fact that all Russian regions have high educational levels and small disparities do not impact foreign investors' decision.

Kersan-Skabic (2013) used quantitative research with panel data over 8 SEE countries

between 2001 and 2010. The author studied the determinants of FDI into Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Montenegro, Romania and Serbia. The author expected institutional indicators to be the stronger determinants of FDI. Nonetheless, he found that economic determinants such as market size (purchasing power) and economic instability were dominants. Purchasing power was found to have a positive impact on FDI while instability was found to negatively affect FDI. Additionally, the cost of the labour was found to have a negatively relation with FDI while the level of institutional development seems to have a positive impact.

Mathur & Sing (2013) studied the impact of corruption and the level of democracy on the inflows of FDI in developing countries. The authors used quantitative research with data of 29 developing countries between 1980 and 2000. The results of the research have demonstrated that economic factors (e.g. GDP and GDP growth rate) have a positive impact on the inflows of FDI. Additionally, political determinants such as the degree of democracy has a negative impact on FDI since it brings conflicting political interests with foreign investors. Real life cases such as China and Singapore demonstrate that although they have a bad performance on the democracy index, they perform well in terms of FDI inflows (Mathur & Singh, 2013). This happens mostly since the demand for democracy in developing countries does not go in line with the kind of economic reforms that foreign investors desire.

Romano & Gamboa (2013) used a panel data about FDI in Mexico states between 1994 and 2004. The results of this study suggested that social determinants, such as the level of education of the labour force and its costs/productivity are likely to influence FDI. The former was found to have a positive relation with FDI while the latter has a negative sign because higher productivity comes with higher levels of wages. They also found that economic determinants such as market features (measured by the GDP and GDP per capita) and political variables have a significant impact on FDI.

Elfakhani & Mackie (2015) examined the three possible groups of determinants (economic/financial, social and political variables) of FDI in The BRIC countries. To measure the economic variable the authors used market size and corruption. Social factors included the degree of human capital developments, quality of life, among others. Political variables are related to “host country’s level of restriction on capital repatriation” (Elfakhani & Mackie, 2015, p. 99). The authors used quantitative analysis over the period 1989-2008 for

the first analysis and then performed another analysis for the subset period covering the past 10 years (1999-2008). The main conclusions for the larger period were that social variables are responsible for 40 per cent of the net inward FDI, followed by political variables. Nevertheless, for the past ten years, economic and financial variables contributed the most to influence FDI.

Okafor et al. (2017) studied the determinants of FDI in twenty SSA countries and eleven MENA countries. To do so, the authors used quantitative research with panel data between 2000 and 2012. The authors found political determinants, such as country's openness and control of corruption, to have a positive and significant impact on FDI. Additionally, they found that economic determinants such as the availability of natural resources are not significant on the impact on FDI. Nonetheless to further investigate this result the authors performed an interaction between the availability of natural resources and political stability. This was justified with the fact that political stability can impact the exploitation and production of natural resources and, indeed, the interaction was significant.

Finally, Rjoub et al. (2017) analysed thirteen SSA countries between 1995 and 2013 using quantitative research. Economic and social determinants such as availability of natural resources, market size and level of human capital development were found to have a positive and significant impact on FDI in those countries. By studying the impact of political determinants, the authors found countries' openness and feasibility of policies as significant and positive determinants of FDI while the corporate tax seems to have a negative impact on FDI, meaning that the higher the level of the corporate tax the lower the inflows of FDI.

After analysing all this information, it is possible to look for trends and to do a better analysis of the determinants (see table 3). It is important to state that the main conclusions of the literature highlight the positive effect of the market size and market growth on FDI. Additionally, research on this area highlights the degree of openness as positively affecting FDI, as well as the level of human capital development. As so, each group of determinants (economic, political and social) seems to be empirically relevant on the attraction of FDI despite social determinants being slightly more neglected.

Table 3 - Main conclusions of the empirical literature

Category of determinant	Variable	Proxies	Impact on FDI			
			+	-	0	Total
Economic	Market size	GDP, population, GDP per capita and GDP growth	11	0	2	13
	Market growth	GDP growth rate and population growth rate	7	0	0	7
	Instability	Inflation rate	0	3	0	3
	Infrastructures	Digital access, number of kilometres of railroad and % of GDP generated in services	4	0	0	4
	Availability of natural resources	Crude oil proven reserves and gold production and crude oil, gold and diamonds endowment and tourist arrivals	1	0	1	2
	Country risk	Country's risk rating	0	1	0	1
	Size of tourism industry	Tourist arrivals	0	0	1	1
Political	Degree of democracy	Democracy index	0	2	0	2
	Country's openness	Degree of openness to trade	6	0	0	6
	Fiscal policy (taxes)	Corporation tax, tax incentives	0	2	1	3
	Institutional framework	Countries' political rights and freedom, international property protection index, civil liberty index and economic freedom index	3	0	0	3
	Investment environment	Delinquency rate	0	1	0	1
	Trade performance	Trade balance	0	1	0	1
	Corruption	Control of corruption index and corruption perceived index	1	0	1	2
Social	Human capital development	Secondary school enrolment, % of population enrolled in vocational education, literacy rate, average years of schooling and degree of education of the labour force	5	0	1	6
	Quality of life	Energy consumption and life expectancy at birth	2	0	0	2
	Extent of urbanization	Cities >500000 inhabitants	1	0	0	1
	Cost of labour	Wages	0	0	2	2

Legend:

+: positive relation; -: negative relation; 0: non-significant.

These main conclusions can be discussed by analyzing the most frequent relations proved. Empirical evidence on economic determinants such as market size and market growth demonstrate that this type of determinants has significant impact on FDI and it is mainly

positively related with FDI which means that studies have shown that these variables positively affect FDI in developing countries. Nevertheless, when market size is measured by population it seems to have a non-significant impact on FDI. Market size was analyzed on the thirteen studies mentioned above and for eleven times it has been confirmed that it has a positive impact on FDI. Furthermore, all the empirical studies (seven) that have analyzed the impact of the market growth have confirmed its positive effect on FDI. This is related with market-seeking FDI in which foreign investors seek to invest in large and growing markets that offer higher sales potential (Dunning, 1998). On the other hand, the economic instability measured by the inflation rate negatively affects FDI since higher levels of inflation are associated with a poor financial performance that drives away FDI (Nonnenberg & Mendonca, 2004), which is confirmed by three of the empirical studies. With regard to the availability of infrastructures it seems to be true that it has a positive impact on FDI since it has been proved by four empirical studies.

Empirical evidence on political determinants shows that the degree of democracy is negatively related with FDI, while the degree of openness positively affects FDI. Out of the thirteen empirical studies, two have confirmed the negative impact of the degree of democracy on FDI and six have confirmed the positive effect of the degree of openness. In some cases (Read, 2008), the level of openness is found to be the most important driver of FDI. On the other hand, the negative impact of the degree of democracy is explained by the fact that “democratizing developing economies are often unable to push through the kind of economic reforms that investors desire due to the presence of conflicts of interests” (Mathur & Sing, 2013, p.991). Additionally, fiscal policies seem to be effective and may attract FDI when they are not offered just as an incentive scheme but as a stable measure (Root & Ahmed, 1978). Countries with poor incentives may suffer a competitive disadvantage although competitive tax incentives are not sufficient to attract FDI (Root & Ahmed, 1078). In fact, fiscal incentives and political frameworks and measures influence efficiency-seeking FDI since it directly impacts on the net income of the firms, as well as strategic-asset seeking FDI (Dunning, 1998). Two studies have confirmed the negative impact of the level of the fiscal policies (taxes) on the attraction of FDI and three studies have confirmed the positive impact of the institutional framework.

Empirical evidence on social determinants highlights the importance of the degree of the human capital development and the quality of life on the attraction of FDI. Social variables

are found to be, in fact, responsible for the larger part of the FDI inflow in some cases (e.g. Elfakhani & Mackie, 2015). Five out of the six empirical studies that included this determinant have shown that the degree of human capital development has a positive impact on FDI and two have confirmed the positive effect of the quality of life. In fact, resource-seeking FDI is stimulated by the availability, price and quality of host country's human resources.

2.4. FDI and small states

Small states have particular features that justify the need for a more rigorous analysis. Nevertheless, the study of FDI in these states has been neglected because of the small amount of capital involved and because of the low impact of small states (Read, 2008). Despite the little emphasis on the literature, small states rely on international finance and international investment to supplement their fiscal envelopes and economic and social development (World Bank, 2016) which justify the need to develop research in this area. Existing research argue that small states are at disadvantage when seeking to attract FDI due to their risk ratings (Collier and Dollar, 1999 *cit in* Singh et al., 2008) which is related with the economic conditions of the countries. Due to their characteristics, it is clear that small states do not compete in terms of market size so there must be other aspects that might attract investment. Small states seem to possess other features that might attract foreign investors such as tourism-related aspects that are, currently, a major source of FDI to small states as well as a main key determinant of growth (Singh et al., 2008).

Based on the rationale of Brouthers & Hennart (2007), the decision of investing abroad has long-term consequences for firms which makes it a decision that must be well considered. According to these authors (Brouthers & Hennart, 2007), this decision is weighted by the realization of asset specificity, host country environment and experience that will affect the perception of the investment, which is deeply influenced by the host country location advantages. Furthermore, theories involving a macroeconomic dimension highlight the market particular features (e.g. openness to trade, market size, market growth, availability of resources, economic stability and country risk) as the specifications that will determine FDI (Faeth, 2009). Additional literature about the impact of the host country environment on the investment decision suggest that market-supporting institutions also have impact on the business strategies since stronger financial institutions lower the costs of doing business

(Meyer et al., 2009). Small states are typically developing economies. A common characteristic of developing economies is the tendential weak or even missing support institutions and infrastructures which can be a constraint for FDI to take place (Castiglione et al., 2012, Elfakhani & Mackie, 2015, Romano & Gamboa, 2013 and Singh et al., 2008). Thus, the features of the markets are crucial as they should help mitigate the risks associated with investing overseas.

A firm is at disadvantage in the host country when compared to local entities because of cultural, administrative, geographic and economic distance (Ghemawat, 2001). Consequentially, it is common to conclude that a firm will go to a closer market to decrease the disadvantages of being foreign. In fact, due to the remoteness of small states (World Bank, 2016), it is common to think that firms will not consider them as attractive destinations. Nevertheless, there are other factors determining location choice that should be considered and distance may not be a constraint. As Benito & Gripsrud (1992) highlight, high distance may actually create new learning opportunities and the impact of the distance is likely to decrease over time due to information and communication technology. Hence, the location decision seems to vary according to the strategy of the firm. Firms will do different things if they seek different goals (Dunning, 1998).

So far, it has been argued that FDI location decisions are founded upon comparative advantages of potential host countries (e.g. low-cost product factors, quality of human capital, quality of infrastructures, competitiveness, government policies, political stability - in Read, 2008) and influenced by strategic decisions (Dunning, 1998). The traditional sources of location advantages seem to be unlikely to apply to small states. Which implies that small states must have any other location advantage similarly stronger that will allow them to compete with other potential host countries (Read, 2008). Therefore, it is possible to relate the FDI types explained in the section 2.2. with the small states location advantages.

Resource seeking motives are mostly driven by the availability of particular resources which includes natural resources and specific skills (Read, 2008). The majority of small states are small islands that possess natural resources that can offer potential for tourism (Read, 2008). Some small states also have privileged access to some valuable raw materials such as petroleum (e.g. Qatar). Additionally, many small islands “in the Pacific possess sizeable Exclusive Economic Zones (EEZs) which gives them control over abundant renewable

natural marine resources” (Read, 2008, p. 509). Therefore, it is possible to recognize location advantages in small states that can lead a firm to invest abroad if it is looking for natural resources or for natural resources that can potentiate tourism activities development (e.g. hotel, resort, restaurant) (World Bank, 2016). Based on that, one can argue that the higher the availability of natural resources (e.g. valuable raw materials, nature tourist attractions, natural marine resources), the higher the FDI. In this way, the first hypothesis to be tested is the impact of the availability of natural resources on FDI as stated below.

H1: The availability of natural resources in small states is positively related with FDI

Efficiency seeking motives are mostly dependent on the host country competitiveness and these kind of location advantages, usually, tend to favor more large and populated developing countries (Read, 2008) because of larger scales and potential higher growth rates. It can be usual to think that small states are not able to provide foreign investors with these benefits due to their reduced size. Nonetheless, Easterly & Kraay (2000) clarify that small states do not have lower growth rates than other larger developing economies due to their openness to trade. Additionally, many small states host offshore finance centers and they are pure tax heavens (Hampton & Christensen, 2002) that might attract foreign investors that seek to lower their financial costs and taxes in order to improve their net return (Root & Ahmed, 1978). Hence, it seems logical that a firm will invest in a country that can offer attractive growth rates and favorable fiscal conditions. Therefore, the second hypothesis to be tested is the impact of the market growth rate of small states on the attraction of the FDI and the third hypothesis seeks to test the impact of the corporate tax level.

H2: Market growth rate of small states is positively related with FDI

H3: Corporate tax in small states is negatively related with FDI

Market seeking motives are related to the need for larger markets or the desire to be closer to suppliers and consumers (Read, 2008) which by definition is unlikely to happen in small states. In fact, this type of FDI seems to be improbable in small states due to their small size and the small size of their markets. Nevertheless, this might not be a constraint for FDI to take place if it is possible to overcome with the “creation of competitive policy framework, creation of domestic advantages that allow investors to compete successfully in international markets and actively promoting export-oriented investment” (Singh et al., 2008, p. 95) which

work along with small states' relative openness. Hence, the fourth hypothesis to be tested is related to the impact of the degree of openness on the FDI.

H4: The degree of openness of small states is positively related with FDI

Strategic asset seeking is driven by the global strategic objectives of the firm (Read, 2008). This can be the case of firms investing in small states for potential monopoly profits (Read, 2008). Strategic asset seeking can also be able to explain the reason why firms might think of investing in small states if they perceive investment incentives, privileged access to licenses or specialized factor inputs, for instance. Thus, it can also apply to access valuable and strategic natural resources that small states possess which reinforce the first idea expressed in H1.

Up until now, the rare available studies for small states (Singh et al., 2008; Read, 2008) suggest that although some traditional factors such as market size and proximity might not apply in the case of small states, there are other traditional factors such as economic growth rate and openness to trade that encourage FDI. Surprisingly, they also propose that market size is not a key restriction in attracting FDI (Singh et al., 2008) if this can be overcome with other competitive frameworks and incentives by “actively promoting the inflow of export or extractive oriented FDI” (Singh et al., 2008, p. 97). In fact, small states seem to possess some characteristics that can be drivers of FDI.

3. Methodology

In the present work, the main goal is to analyse which variables might influence the attraction of FDI in small states. This chapter will explain the methodology used to perform this study and it consists of two sections. The first section (3.1) introduces the specifications of the econometric model to be estimated, that is, this section outlines the model used to empirically test the FDI drivers in small states. The following section (3.2.) presents a first approach to the data.

3.1. Model specification

Similar to the studies in this area, this work will follow a quantitative research by estimating an econometric model with panel data for a subset of 40 small states between 2005 and 2015. The econometric model to be estimated is the following:

$$\begin{aligned} FDI_{it} = & \beta + \beta 1 Resources_{it} + \beta 2 Growth_{it} + \beta 3 Tax_{it} + \beta 4 Openness_{it} \\ & + \beta 5 Size_{it} + \beta 6 Human\ Capital_{it} + \beta 7 Infrastructures_{it} \\ & + \beta 8 Instability_{it} + \beta 9 Corruption_{it} + \varepsilon_{it} \end{aligned}$$

FDI is the dependent variable and resources, growth, tax, openness, size, human capital, infrastructures, instability and corruption are the explanatory variables, that is, the determinants of FDI. The first four variables are identified in the hypotheses stated on section 2.4. and the last five are control variables. As so, FDI will be a function of the availability of natural resources (resources), market growth (growth), level of corporate taxation (tax), degree of openness to trade (openness), market size (size), degree of human capital development (human capital), availability of infrastructures (infrastructures), economic instability (instability) and control of corruption (corruption).

Concerning the dependent variable, FDI will be measured by FDI stocks that measure the value of foreign investors' equity in the country (similar to Romano & Gamboa, 2013). A choice had to be made between whether to use net inflows or stocks to measure the foreign investment in small states and stocks were more reliable due to the volatility of the inflows and because some countries have FDI net inflows lower than zero due to divestment and a logarithmic transformation drops such observations (Romano & Gamboa, 2013). Additionally, the main goal is to analyze the impact of the independent variables on the FDI

attraction instead of understanding the dynamic of the inflows. Moreover, it is a common practice in the studies of the FDI drivers that FDI is normalized for GDP (Read, 2008).

Regarding the explanatory variables, this model will test the significance of economic determinants (market size, market growth, availability of natural resources, availability of infrastructures and economic instability), political determinants (degree of openness, level of corporate taxation and control of corruption) and social determinants (degree of human capital development) on the attraction of FDI. This model will focus on these nine explanatory variables that claim for suitable proxies to be able to estimate the model.

Regarding the availability of natural resource, one can study the availability of some rare and valuable resources such as petroleum or renewable natural marine resources (see Okafor et al., 2017 and Rjoub et al., 2017) or the availability of natural resources that can potentiate tourism activities (e.g. nature attractions). Since it is rare for many small states to have petroleum (only Brunei Darussalam, Gabon and Qatar have crude oil reserves, according to OPEC data in 2016) the proxy for availability of natural resource may be the tourist arrivals that will reflect the potential of natural resources for tourism activities. Another possibility is to consider the international tourism receipts (as a percentage of exports). In fact, small states economic features are mainly dependent on tourism revenues and the majority of small states are tourism-based economies (World Bank, 2016). Nevertheless, fuel exports will also be taken into account. In this way, there are three alternatives for measure the availability of natural resources. This determinant is expected to have a positive relation with FDI and it is expected to be one of the most important drivers since it seems to be one of the major sources of comparative advantages for small states.

Furthermore, the proxy for the market growth will be the GDP growth rate (similar to Elfakhani & Mackie, 2015; Mathur and Singh, 2013; Nonnenberg & Mendonca, 2004 and Obwona, 2001) and it is expected to have a positive impact on FDI, as explained on section 2.4.

The level of corporate taxation will be the annual tax of each country as a percentage of profit, similar to Root & Ahmed (1978). This variable is expected to have a negative relation with FDI, that is, the higher the taxation level, the lower the FDI (see Rjoub et al., 2017 and Root & Ahmed, 1978).

Similar to what have been done in the literature (e.g. Elfakhani & Mackie, 2015, Nonnenberg & Mendonca, 2004, Read, 2008 and Singh et al., 2008), the proxy for the degree of openness of each country will be the openness index that is equal to the exports plus the imports divided by the GDP. Similar to what have been proved in the literature, this variable is expected to be one of the most important drivers of FDI in small states, thus expecting a positive relation.

Concerning the control variables and starting with market size, as it is common in the studies of FDI determinants in small states (e.g. Read, 2008 and Singh et al., 2008), the proxy for it will be the population instead of GDP. This choice is based on the fact that GDP is likely to suffer high variations in small states due to its volatility driven by the instable economic environment of small states (World Bank, 2016). Nonetheless, in order to confirm this assumption, the model will also be tested with the proxy for market size being the GDP of each country, similar to Nonnenberg & Mendonca (2004), Obwona (2001), Elfakhani & Mackie (2015) and Castiglione et al. (2012). This variable is expected to have a positive relation with FDI.

Moreover, the degree of human capital development will be measured by the mean years of schooling as it is common to take into consideration the level of schooling (e.g. Nonnenberg & Mendonca (2004) and Romano & Gamboa, 2013). This determinant is expected to be positively related with FDI.

The proxy for the availability of infrastructures will be the digital access (similar to Singh et al., 2008) measured by the individuals using the internet as a percentage of the population. Infrastructures are a crucial support for economic development and it also “impacts on the ability of businesses to operate successfully from a small economy” (Singh et al., 2008, p.88). As so, this variable is expected to have a positive impact on FDI. Nevertheless, this variable will also be measured by the telephone line subscriptions per 100 inhabitants similar to Romano & Gamboa (2013).

Additionally, similar to what have been done in the literature (e.g. Nonnenberg & Mendonca, 2004, Kersan-Skabic, 2013 and Elfakhani & Mackie, 2015), the proxy for the economic instability will be the inflation rate and this variable is expected to have a negative relation with FDI, meaning that the more instable a small state is, the less likely is FDI in that country since instability discourage investments.

Finally, the proxy for corruption will be the control of corruption index (similar to Okafor et al., 2017) that highlights the control over the public power used for private gain in which the higher the index the less the corruption indicated. In this way, this variable is expected to have a positive impact on the FDI, i.e., the higher the control of corruption (the less the corruption in the country) the higher the foreign investment.

Table 4 lists the explanatory variables of the model, their proxies, the expected relation with FDI and the data sources.

Table 4 - Variables of the model

Group of determinants	Determinant	Proxy	Expected impact on FDI	Data source
Economic	Availability of natural resources (H1)	Tourist arrivals (thousands)	Positive	The World Bank Data https://data.worldbank.org/
		Tourism receipts (% of exports)		
		Fuel exports (% of merchandise exports)		
	Market growth (H2)	GDP growth rate (%)	Positive	The World Bank Data https://data.worldbank.org/
	Market size	Population (thousands) GDP (constant prices, millions USD)	Positive	The World Bank Data https://data.worldbank.org/
Availability of infrastructures	Digital access (% of population) Telephone subscriptions (% population)	Positive	The World Bank Data https://data.worldbank.org/ International Telecommunication Union https://www.itu.int/en/	
Economic instability	Inflation rate (%)	Negative	The World Bank Data https://data.worldbank.org/	
Political	Level of corporate taxation (H3)	Profit tax (% of profit)	Negative	Doing Business http://www.doingbusiness.org/
	Degree of openness (H4)	Openness index (%)	Positive	UNCTAD http://unctad.org/en/Pages/Home.aspx
	Corruption	Control of corruption index (%)	Positive	The World Bank Data https://data.worldbank.org/
Social	Degree of human capital development	Mean years of schooling (Years)	Positive	UNDP http://hdr.undp.org/en/data

3.2. Data and descriptive statistics

This section will explain and justify the data used to perform the analysis and will consist of an initial approach to the data. In this way, a brief analysis of the descriptive statistics will be done which will try to summarize the data and to demonstrate how the variables evolved over time.

As it was stated in the previous section, this work will follow a quantitative research by

estimating an econometric model with panel data for 40 small states between 2005 and 2015 (secondary data). The reason for this time horizon was related to data availability and quality.⁵ Concerning the number of countries, the list is presented in the Table A1 in Annexes and is justified with the World Bank's list of small states and data availability. Although the initial sample included 50 countries, after an initial analysis of missing values for the relevant variables the sample was adjusted to 40 small states between 2005 and 2015. The sample includes unbalanced panel data, i.e. there are some time periods missing from some units in the population of interest, as evidenced in table 5 that shows the descriptive statistics of each variable.

Table 5 - Descriptive statistics

	Obs.	Mean	Minimum	Maximum	Std. Deviation
FDI/GDP (%)	440	115.37	0.22	1817.35	241.19
FUEL_EXP (%)	337	14.18	0.00	97.82	27.12
TOURISTS (Thousands)	440	774.16	3.90	11952.00	1460.28
TOURISM_REC (%)	440	31.31	0.21	170.48	25.43
GROWTH (%)	440	4.21	-5.86	26.17	3.54
TAX (% of profit)	434	18.81	0.00	40.10	10.48
OPENNESS (%)	440	104.74	13.12	322.49	45.22
POP (Thousands)	440	797.00	48.61	2871.93	702.84
GDP (Constant prices, millions USD)	440	8771.49	148.27	166951.10	19896.10
SCHOOL (Years)	435	7.77	2.30	12.50	2.58
INFLATION (%)	429	4.60	-8.12	36.96	4.74
INTERNET (%)	440	31.67	0.10	98.20	25.04
TELEPHONE (%)	440	17.99	0.00	65.72	15.87
CORRUPTION INDEX (%)	440	60.88	2.88	99.51	21.48

⁵ Initially, the time period was supposed to be between 2000 and 2015 since before 2000 there was almost no data collected for small states and after 2015 there was no data updated yet. Nonetheless, after collecting all the data, it was possible to conclude that between 2000 and 2004 there were several gaps in some variables in many countries. Even so, there were a few missing values that were completed through the average of the values of the two closest years or through the calculation of the underlying formula (for the degree of openness, profit tax and tourist arrivals).

With regard to the dependent variable, FDI stocks as a percentage of GDP, it is possible to observe a great dispersion of the data, proved by the high standard deviation. The minimum value for this variable (0.22%) was registered by Guinea Bissau in 2006, which means that in 2006 in Guinea Bissau, the FDI stocks represented only 0.22 percent of the GDP standing out as the lower performance between 2005 and 2015 for the group of small states included in the sample. On the other hand, the maximum value was achieved by Malta in 2013 (1817.35%) which means that in that year the FDI stocks were more than eighteen times higher than the GDP. As it is possible to verify, the mean for FDI as a percentage of GDP is 115.37% which means that, on average, in the countries on the sample, the FDI stocks represent more than 100% of the GDP.

Regarding the availability of natural resources, the proxy fuel exports has several missing values. Brunei Darussalam, Gabon and Qatar possess crude oil reserves (OPEC data in 2016) which helps explain the high values of fuel exports (% of merchandise exports). In fact, the highest value belongs to Brunei Darussalam in 2008, but Qatar is soon to follow with 93% in 2011. What concerns the minimum values, several countries registered zero percent of fuel exports at a certain time between 2005 and 2015 which is the case, for example, of Antigua and Barbuda, Cape Verde, Maldives and Timor-Leste. On the other hand, it is possible to verify that for the proxy tourist arrivals there are 440 observations with an average of 774160.2 international tourists. The small state with the minimum value of tourist arrivals was Kiribati in 2008, 2009 and 2015 (3900 tourists) and Bahrain stands out for the highest value in 2010 (almost twelve million tourists). It is also possible to look to this determinant using the proxy tourism receipts and it is possible to verify that, on average, tourism receipts in small states represent almost 30% of the total exports. Swaziland reached the minimum value in 2013 in which the tourism receipts represented only 0.21% of the total exports. On the other hand, Maldives in 2005 had the maximum value of 170.48%.

When analyzing the GDP growth rate, the average annual GDP growth rate for small states between 2005 and 2015 was 4.21%. The lower performance was from Timor-lest in 2006 which registered a negative growth rate of 5.86%, while the highest performance belongs to Qatar in the exactly same year (26.17%)

What concerns profit tax, the mean is 18.81% which means that, on average, firms operating in small states pay 18.81% of their profit in taxes. Nevertheless, five small states have a profit

tax equal to zero (Bahama, Bahrain, Qatar and Vanuatu between 2005 and 2015 and Maldives between 2005 and 2011). On the other hand, Saint Kitts and Nevis in 2009 has the highest profit tax (40.10%).

With regard to the degree of openness, it is possible to see that exports and imports of small states represent, on average, 104.74% of GDP, in the period analyzed. Thus, small states seem to be, on average, relatively open which is not surprising since they are not self-sufficient due to its reduced size and constraints. Nonetheless, their openness and dependence of external markets also translates into their sensitivity to the oscillations of the world economy. The highest value belongs to Malta in 2012 in which exports and imports accounted for 322.486% of GDP. In contrast, Timor Lest reached the lowest value (13.122%) in 2005.

What concerns population, measuring market size, Saint Kitts and Nevis stands out for the minimum value since it recorded, in 2005, only 48611 inhabitants. On the other hand, Jamaica had the higher level of population with almost three millions inhabitants in 2015. Once again, the high dispersion of data is notorious and proved by the high values of standard deviation. As for the GDP, the alternative proxy for market size, the higher value was from Qatar in 2014 while the lowest value belongs to Kiribati in 2006.

What concerns the years of schooling, the mean is 7.77 years. The minimum value of 2.3 years was reached by Bhutan in 2010 and 2011 and by Guinea-Bissau in 2005 and 2007. On the other hand, Estonia and Iceland stand out for the maximum values (more than 12 years of schooling).

Concerning the inflation rate, measuring economic instability (measured by the consumer price index), it is possible to see that the average is 4.60%. Nevertheless, Comoros in 2015 registered an inflation rate of -8.12%. On the other hand, Seychelles in 2008 registered an abnormal and exceptional value of 36.96%, which represents a substantial increase in the cost to the average consumer of acquiring a basket of goods and services in that year.

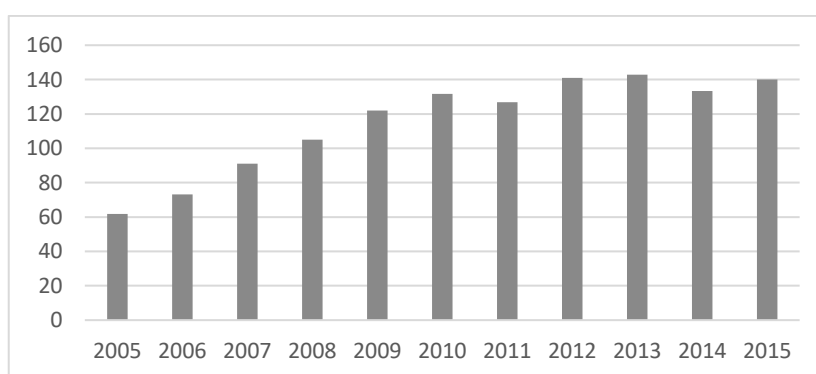
When analyzing the availability of infrastructures, it is possible to see that, on average, 31.58% of the population in small states has access to the internet while the average for fixed-telephone subscription per 100 inhabitants is 17.99. In Timor-Leste in 2005 only 0.10% of the population had access to the internet, while in 2015 in Iceland 98.2% of the population

had digital access. Regarding telephone subscriptions, Guinea-Bissau had 0 telephone subscriptions between 2010 and 2015⁶ while Iceland had 70.01 per 100 inhabitants in 2000.

Finally, regarding the control of corruption, Iceland registered the highest values in 2005 and 2008 (99.51) which means it was the small state with the lowest level of corruption of the countries under analysis. On the other hand, Guinea-Bissau registered the lowest value of the index (2.88) in 2014 and 2015.

After an initial global analysis of the data, it is of value to discuss how the variables evolved over time. Starting with the dependent variable, Figure 1 presents its evolution over the period under analysis. FDI stocks as a percentage of GDP has risen drastically from 2005 to 2013. In fact, the weight of FDI in GDP more than double in the period under analysis. In 2005, it reached the minimum value of the period with FDI representing 61.80% of the GDP and, on the other hand, the maximum was 142.94% in 2013. Thereafter, FDI as a percentage of GDP is having minor fluctuations over time.

Figure 1 - Evolution of FDI stocks (% of GDP) between 2005 and 2015



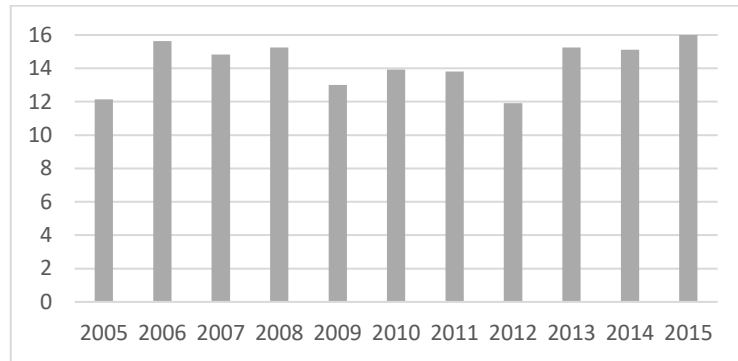
Regarding the explanatory variables, the first presented below are the variables related to the hypothesis mentioned in chapter 2 (section 2.4), followed by the control variables.

Concerning the availability of natural resources, measured by the fuel exports, arrival of tourists and tourist receipts, it is possible to observe that there are no major fluctuations in in the period under analysis (Figure 2, 3 and 4, respectively). Regarding fuel exports, there are some fluctuations although they seem not significant, which may be related to the

⁶ Although the value seems odd, it has been confirmed in more than one database and it is justified by the replacement by other means of communication such as mobile phones.

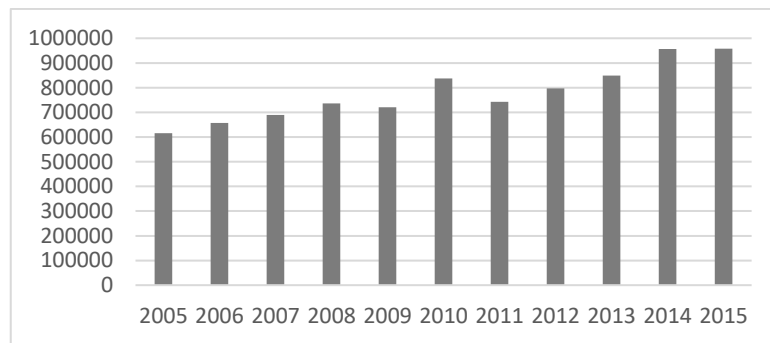
evolution of the oil price. The fuel exports reached the maximum value in small states in the more recent year, 2015 (16.06% of the merchandise exports).

Figure 2 - Evolution of fuel exports (% of merchandise exports) between 2005 and 2015



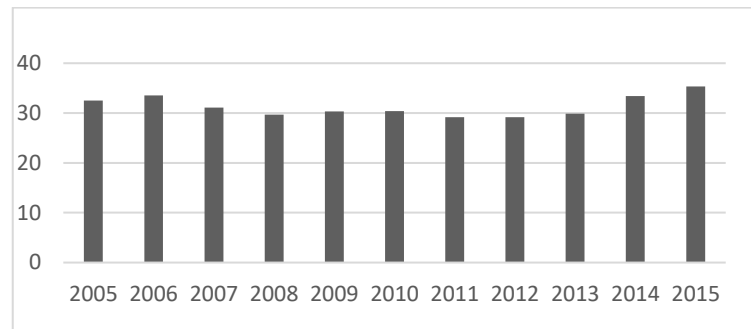
The variable arrival of tourists seems to be slightly increasing between 2005 and 2015 (see Figure 3) with its maximum in 2015 (an average of 958471.80 tourists for the group of small states under analysis).

Figure 3 - Evolution of the arrival of tourists between 2005 and 2015



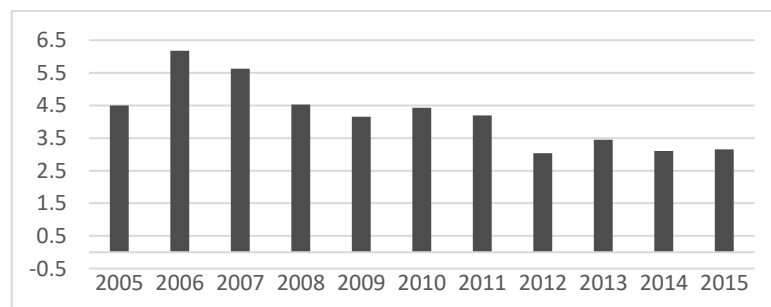
As for the variable tourism receipts, variations are also not high, and the maximum value has also been reached in the more recent year (2015) with an average of 35.32% of tourism receipts (see Figure 4).

Figure 4 - Evolution of tourism receipts (% of exports) between 2005 and 2015



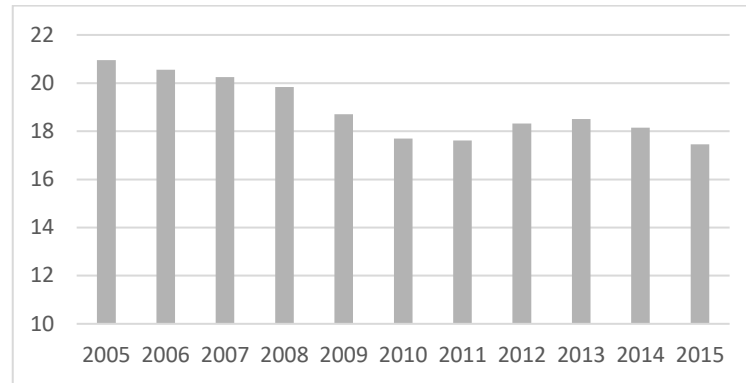
In relation to the evolution of the GDP growth rate, it appears to be slightly stagnant with decreasing values since 2008 (see Figure 5) which is not surprising due to the global financial crisis. In fact, the maximum value was reached in 2006, with a mean of 6.17% of growth rate, until it started to decrease to lower values (3.03% in 2012 and 3.15% in 2015).

Figure 5 - Evolution of the GDP growth rate (%) between 2005 and 2015



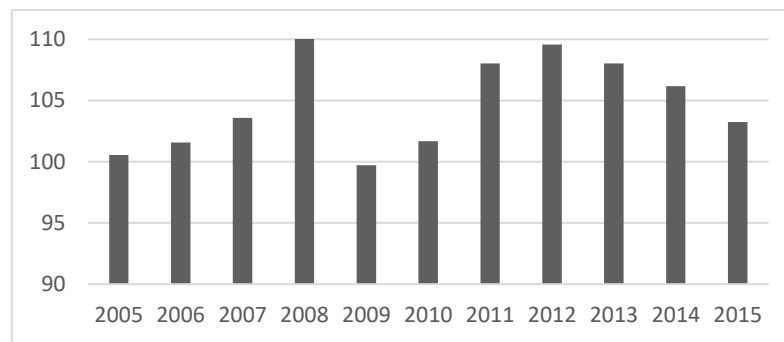
The variable profit tax is, in general, decreasing overtime (see Figure 6). In 2005, the profit tax to be paid by the firms operating in the group of small states under analysis were, on average, 20.96%. In 2015, the value remained only at 17.45%.

Figure 6 - Evolution of the corporate tax (% of profit) between 2005 and 2015



Regarding the variable degree of openness, it seems to be unpredictable overtime with high fluctuations between 2005 and 2015 (see Figure 7). The higher and the lower value of the degree of openness are in consecutive years with an average degree of openness of 110.03% in 2008 and of 99.71% in 2009. In fact, in every single year, the average for the degree of openness for the group of small states under analysis is above 100%, except in 2009, which may be explained by the global financial crisis.

Figure 7 - Evolution of the degree of openness (%) between 2005 and 2015



What concerns the remaining control variables, and starting with the market size, measured by population and GDP, it seems to be increasing overtime (see Figure A2 and A3 in Annexes). As for the mean years of schooling (measuring the degree of human capital development), they are increasing overtime while the development of societies is also increasing (see Figure A4 in Annexes). The maximum value was reached in 2015 with a mean year of schooling of 8.16. As for the values of telephone subscriptions and digital access (both measuring the availability of infrastructures), the former is decreasing overtime while the latter is increasing drastically (see Figure A5 and A6 in Annexes). In 2015, the telephone

subscriptions reached its minimum value with an average of 16.16 subscription per 100 inhabitants while the access to the internet reached its maximum value with an average of 47.03% of the population using the internet. As for the inflation rate (measuring economic instability), it is reaching lower values in more recent years (an average of 1.19% in 2015) and the maximum value was reached in 2008 with an average of 10.34% (see Figure A7 in Annexes). Finally, to finish, the control of corruption index has no major fluctuations overtime and it reached its minimum value in 2005 (59.38%) and its maximum value in 2011 (62.07%) (see Figure A8 in Annexes).

4. Model estimation

This chapter consists of the estimation of the model presented in the former chapter. It presents the econometric results of the model introduced in the chapter 3 and potential explanations of the empirical results obtained. The main goal is to test which variables are likely to be drivers of FDI in small states. This chapter is divided in three sections in which the first section (4.1.) consists of an explanation of some initial consideration, the second (4.2.) section aims at presenting the results of the model estimation and the third (4.3.) consists of a discussion of the results obtained.

4.1. Initial considerations

In order to test the impact of the potential determinants of FDI, an unbalanced panel of relevant data was used. The main benefit of using panel data is that the combination of time series with cross-sections observations improve the quality and quantity of data and minimize the bias of aggregating individuals or countries into broad categories (Gujarati, 2003). Panel data allows to analyze the information through two dimensions, spatial and temporal. The spatial dimension (cross-section) consists of 40 small states and the temporal dimension (time series) consists of a period of eleven years (from 2005 to 2015). By combining these two dimensions, panel data gives “more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency” (Baltagi, 2008, p. 7).

In order to start studying the data, the first step was to examine the correlation matrix since it is important to analyze the correlations among the variables of the model. The correlation matrix can be seen in table 6. It is important to state that the explanatory variables are not highly correlated, suggesting the absence of multicollinearity. Despite the existence of few correlations between these variables, it is important to justify that even though they are significant the coefficients are not very high. Moreover, some of the variables with high correlation coefficients (e.g. fuel exports, tourists and tourism receipts, population and GDP and telephone subscriptions and digital access) are alternative measures for the same determinant which makes it not problematic.

Thereafter, the next step was to perform a variable selection method in order to find the set of predictor variables which give the best fit and predicts the dependent variable the best

possible. To do so, it was used the backward selection method in which each model starts with all predictors mentioned previously and deletes non-explanatory variables (Derksen & Keselman, 1992). The main goal was to understand if there were any variable that should be disregarded taking into account all the different proxies. Additionally, due to the volatility of small states to the shocks of the world economy, one could think that it could be of value to introduce a dummy variable for the years of the crisis. Thereafter, it was tested four different dummies for the possible intervals of years of crisis (dummy1: 2008-2010, dummy2: 2007-2010, dummy3: 2008-2011 and dummy4: 2008-2009) that assumed the value 1 in the years of crisis and the value 0 otherwise. As so, it was expected that this variable had a negative coefficient, which means that in years of crisis it is expected a negative impact on the FDI. The conclusion of those analysis was that the inflation should be removed from the analysis and that any of the dummies for the years of crisis should be considered.⁷

⁷ The backward selection method was applied to 60 different models since there were two different proxies for market size, three different proxies for the availability of natural resources, two different proxies for the availability of infrastructures and four different dummy variables for the years of crisis. Almost every time that it was introduced the dummy variable for the years of crisis it was rejected by the models, so the final decision was not to use them. Additionally, the variable inflation was excluded by 42 of the 60 models and by 9 of the 12 models if one does not consider the models that tried to introduce the crisis variable. As so, the final decision was to exclude this variable from the analysis.

Table 6 - Correlation matrix

	FDI/GDP	POP	GDP	INFLATION	GROWTH	FEXPORTS	TOURISM_REC	TOURISTS	OPENNESS	TAX	SCHOOL	TELEPHONE	INTERNET	CORRUPTION
FDI/GDP	1.0000													
POP	-0.2700 0.0000	1.0000												
GDP	0.1089 0.0223	0.5467 0.0000	1.0000											
INFLATION	-0.1580 0.0010	0.1516 0.0016	-0.0310 0.5223	1.0000										
GROWTH	-0.1604 0.0007	0.0114 0.8119	0.1297 0.0064	0.1559 0.0012	1.0000									
FEXPORTS	-0.1693 0.0018	0.3394 0.0000	0.5288 0.0000	-0.0547 0.3210	0.1824 0.0008	1.0000								
TOURISM_REC	0.2150 0.0000	-0.4517 0.0000	-0.3550 0.0000	-0.0964 0.0460	-0.0298 0.5325	-0.2695 0.0000	1.0000							
TOURISTS	0.1522 0.0014	0.4415 0.0000	0.5602 0.0000	-0.0773 0.1097	0.0360 0.4514	0.3705 0.0000	0.0855 0.0732	1.0000						
OPENNESS	0.4717 0.0000	-0.0964 0.0432	0.2026 0.0000	0.0014 0.9773	0.0755 0.1138	0.0748 0.1705	-0.1038 0.0295	0.2081 0.0000	1.0000					
TAX	0.0537 0.2641	-0.1926 0.0001	-0.4128 0.0000	0.1084 0.0258	-0.1702 0.0004	-0.2170 0.0001	-0.0309 0.5204	-0.4122 0.0000	0.0002 0.9966	1.0000				
SCHOOL	0.4583 0.0000	-0.2188 0.0000	0.4640 0.0000	-0.1583 0.0011	-0.1631 0.0006	0.2191 0.0001	-0.0698 0.1463	0.3018 0.0000	0.3217 0.0000	-0.0896 0.0636	1.0000			
TELEPHONE	0.5831 0.0000	-0.3298 0.0000	0.3859 0.0000	-0.1452 0.0026	-0.0914 0.0554	-0.0111 0.8389	-0.0217 0.6502	0.1916 0.0001	0.3403 0.0000	-0.0360 0.4538	0.6560 0.0000	1.0000		
INTERNET	0.4898 0.0000	-0.2214 0.0000	0.5166 0.0000	-0.2276 0.0000	-0.1204 0.0115	0.2974 0.0000	-0.0039 0.9343	0.3820 0.0000	0.2963 0.0000	-0.1975 0.0000	0.6511 0.0000	0.7493 0.0000	1.0000	
CORRUPTION	0.3833 0.0000	-0.2256 0.0000	0.3696 0.0000	-0.1032 0.0326	0.0049 0.9175	0.0489 0.3707	0.0030 0.9500	0.2044 0.0000	0.2338 0.0000	-0.0955 0.0469	0.5714 0.0000	0.6434 0.0000	0.5963 0.0000	1.0000

4.2. Estimation results

To test the influence of the potential determinants (availability of natural resources, market growth, corporate tax, degree of openness, market size, degree of human capital development, availability of infrastructures and control of corruption) it was used a panel data set. Regarding this type of data, the usual methods to take into account the heterogeneity of the data include random or fixed effects models to estimate the equation (Torres-Reyna, 2007). Thus, it was necessary to perform a diagnostic test to understand which model best fits the data.

In order to validate which model to apply, it was performed the Hausman test for all the possible models with all the alternatives measures and the results can be seen in table 7. The null hypothesis is that the random effect model is appropriate (difference in coefficients not systematic) and it was rejected in all models which means that fixed effects model is appropriate. By using the fixed effects model, it is possible to take into account the heterogeneity of the countries and the advantages that panel data offers in order to assess the effect of the predictors on the independent variable and the results can be seen in table 7.

Table 7 – Estimation outputs – fixed effect model

Determinant	Proxy	Model IA	Model IB	Model IC	Model IIA	Model IIB	Model IIC
Availability of natural resources	Tourists			-0.0002** (0.0001)			-0.0002*** (0.0001)
	Fuel exports		0.0022 (0.0032)			0.0021 (0.0033)	
	Tourism receipts	-0.0017 (0.0027)			-0.0015 (0.0027)		
Market growth	Growth	0.0084 (0.0072)	0.0034 (0.0075)	0.0072 (0.0071)	0.0073 (0.0071)	0.0057 (0.0074)	0.0056 (0.0070)
Level of corporate tax	Tax	-0.0171*** (0.0058)	-0.0010 (0.0060)	-0.0159*** (0.0058)	-0.0179*** (0.0058)	-0.0014 (0.0061)	-0.0169*** (0.0057)
Degree of openness	Openness	0.0048*** (0.0016)	0.0030* (0.0016)	0.0050*** (0.0016)	0.0046*** (0.0017)	0.0032** (0.0016)	0.0046*** (0.0016)
Market size	Population	0.0002 (0.0002)	-0.0004** (0.0002)	0.0004 (0.0002)			
	GDP				0.4329** (0.1991)	-0.3869* (0.2298)	0.5374*** (0.2020)
Degree of human capital development	School	0.2837*** (0.0616)	0.1127* (0.0584)	0.2997*** (0.0608)	0.2433*** (0.0634)	0.1585*** (0.0592)	0.2455*** (0.0623)
Availability of infrastructures	Internet	0.0038 (0.0026)	0.0113*** (0.0024)	0.0043* (0.0026)	0.0027 (0.0025)	0.0107*** (0.0023)	0.0037 (0.0025)
Corruption	Control of corruption	0.0031 (0.0038)	0.0081** (0.0040)	0.0030 (0.0038)	0.0032 (0.0038)	0.0076* (0.0040)	0.0031 (0.0038)
	Hausman test	0.0112	0.0491	0.0578	0.0036	0.0853	0.0215
	Prob>chi2						
	Obs	429	326	429	429	326	429
	Adjusted R-sq	0.2293	0.2501	0.2396	0.2371	0.2455	0.2484

FDI/GDP was logarithmized following standard practices (Read, 2008);

GDP was logarithmized since it was expressed in monetary values (Nonnenberg & Mendonça, 2004);

Legend: * p<.1; ** p<.05; *** p<.01.

There are 12 different models due to the different proxies for each variable, in which six are presented in the table 7. Models identified with the roman numeral I use population as the measure for market size while models identified with II use GDP instead. As for models identified with the letters A, B and C, the former are the models that use tourism receipts as a proxy for the availability of natural resources, letter B stands out for the use of fuel exports and C for the use of arrival of tourists. All these six models use internet as the proxy for the availability of infrastructures since the variable telephone subscriptions was non-significant whenever it was tested (the result of these remaining six models, Model IA', IB', IC', IIA', IIB' and IIC', can be seen in table A2 in Annexes).

The results are consistent since the variables that turned out to be explanatory tend to be significant in almost every model and with similar coefficients. In fact, out of the 8 determinants, 6 turned out to be significant with the expected sign, in at least one of the models. There is a prevalence of two determinants that are always significant which are the impact of degree of openness and of the degree of human capital development on the attraction of FDI that are significant in all models with the expected sign. On the other hand, the impact of market growth is non-significant in all models tested. Notwithstanding, there are some surprising and unexpected results regarding the arrival of tourists and the market size in two of the models.

Model IC, for instance, proves that, as expected, the lower the profit tax to be paid by the firms operating in small states, the higher the degree of openness, the higher the degree of human capital development and the higher the availability of infrastructures, the higher the FDI into small states. Nevertheless, contrarily to what was expected, the results of this model show a negative relation between the arrival of tourists and the FDI. This might be because small states, given their size, are not able to host and sustain a high flow of tourism, even if this industry is central to these countries. In fact, a large number of tourists may suggest to investors that there are no longer investment opportunities, discouraging FDI.

To sum up, empirical evidence highlights the importance of the human capital development on the attraction of foreign investors in small states, as well as the importance of the degree of openness. As it was discussed above, small states compensate for their small size with their high level of openness to the outside and it seems to be valued by foreign investors. Moreover, the level of corporate taxation is also a good predictor of FDI as it was anticipated,

and the digital access was proved to positively influence foreign investors. (see table 8).

Table 8 - Synthesis of results

Determinants of FDI		Models											
		IA	IB	IC	IIA	IIB	IIC	IA'	IB'	IC'	IIA'	IIB'	IIC'
Availability of natural resources	Tourists			--			---			--			--
	Fuel exports		0			0			0			0	
	T. Receipts	0			0			0			0		
Market growth	Growth rate	0	0	0	0	0	0	0	0	0	0	0	0
Level of corporate taxation	Profit tax	---	0	---	---	0	---	---	0	---	---	0	---
Degree of openness to trade	Openness	+++	+	+++	+++	++	+++	+++	0	+++	++	0	+++
Market size	Population	0	--	0				+	0	++			
	GDP				++	-	+++				+++	0	+++
Degree of human capital	School	+++	+	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++
Availability of infrastructures	Telephone							0	0	0	0	0	0
	Internet	0	+++	+	0	+++	0						
Corruption	Control of corruption	0	++	0	0	+	0	0	0	0	0	0	0

Legend:

+++ : positive relation, $p < .01$; ++ : positive relation, $p < 0.05$; + : positive relation, $p < .1$;

--- : negative relation, $p < .01$; -- : negative relation, $p < .05$; - : negative relation, $p < .1$;

0 : non-significant.

4.3. Discussion of results

Availability of natural resources (H1)

As discussed earlier, the availability of natural resources is related with resource seeking FDI and, therefore, it seems to be a potential FDI driver. The availability of natural resources was expected to have a positive relation with FDI since a large part of small states possess natural resources that can offer potential for tourism and/or have privileged access to some valuable raw materials. In fact, empirical literature showed that the availability of natural resources is a potential driver of FDI in some cases (Rjoub et al., 2017), nevertheless it was proved to be a non-significant determinant in other cases (Okafor et al., 2017). Moreover, literature failed to prove the positive impact of tourist arrivals in small states on the attraction of FDI (Singh et al., 2008). The estimation results of the present work using tourism receipts and fuel exports show that although in a few models this variable has the expected sign, the results are not significant. Therefore, the first hypothesis was not confirmed by the models under analysis. Most of the countries in the sample are indeed endowed with natural resources (both natural resources with potential for tourism activities and/or the possession of valuable raw materials) which means that they are quite homogeneous in what regards the availability of natural resources and, therefore, this might explain that the investors are not influenced in their choice by this factor. Perhaps a comparative analysis taking into account other type of countries would highlight this characteristic as a strong determinant of FDI in small states. In fact, contrarily of what was expected, the arrivals of tourists were proved to be negatively related with FDI what might be explained by an apparent over-supply given the restricted size of countries. This variable can be likely to discourage foreign investors if they think that the increase of tourists is filling up the chances of investment suggesting that there are no longer opportunities due to the reduced size of the small states.

Market growth rate (H2)

Market growth rate was the second hypothesis to be tested since it was expected that the higher the growth rate of small states, the higher the FDI. This variable is related with efficiency and market seeking FDI and small states, contrary to what one might think, do not have lower growth rates than other larger economies because of their openness to trade.

Empirical literature reviewed on sections 2.3 and 2.4. shows the importance of this determinant and proves its positive relation with FDI every time it was taken into account. Despite of that, when analysing the empirical results of the present work, although almost all models suggested a positive relation it is non-significant in all of the models, thus not confirming the second hypothesis. In fact, although small states do not have lower growth rates than other large economies, small states are strongly dependent and strongly influenced by the world economy. This may lead to vulnerability to external shocks and high dependence on external trade to maintain their growth which is likely to negatively influence investors decision.

Corporate tax (H3)

As it was explained above, many small states are tax heavens and offer attractive fiscal conditions which might drive foreign investors that are interested in improving their net return, motivated by efficiency seeking FDI. Profit tax was expected to be negatively related with FDI, and, in fact, 8 out of the 12 models prove that there is a significant and negative relation between these variables which is consistent with the empirical literature reviewed in the present work (Root & Ahmed, 1978 and Rjoub et al., 2017). This means that the lower the level of corporate taxation, the higher the FDI, thus confirming the third hypothesis. An initial analysis of the data supports the empirical finding since Bahrain and Qatar, for instance, have a profit tax to be paid by the firms equal to zero and they are two of the four small states that have received more FDI between 2005 and 2015. Empirical literature has been confirming this relation since the early stages to recent years (Root & Ahmed, 1978 and Rjoub et al., 2017) as foreign investors seem to respond significantly to the tax rate of the host country. In fact, firms, and multinationals in particular, aim at minimizing taxes and optimizing their corporate structures through cross-border investment and they do so “in the most tax-efficient manner possible” (UNCTAD, 2015, p.188). FDI is thus influenced by tax considerations and small states offer the fiscal conditions desired by many firms.

Degree of openness to trade (H4)

Finally, the fourth hypothesis was that the degree of openness of small states is positively related with FDI. This determinant is potentially related with efficiency seeking FDI and market seeking FDI due to the possibility of competing successfully in international markets.

This variable was expected to be one of the most important drivers since it seems to be the strongest advantage of small states that mitigate some of their constraints. The results of the empirical model confirm the fourth hypothesis in all of the 12 models tested, thus suggesting a positive and significant relation between the degree of openness and the attraction of FDI. This result is not surprising since the empirical studies reviewed have also proved this relation and it is considered to be, indeed, one of the biggest location advantage of small states (Nonnenberg & Mendonca, 2004, Read, 2008, Singh et al., 2008, Elfakhani & Mackie, 2015, Okafor et al., 2017 and Rjoub et al., 2017). The present work also proves that the higher the degree of openness of a small state the higher the attraction of FDI, with this variable being significant at levels lower than 1% in most models.

In short, empirical results of the present work have proven two of the four hypotheses under analysis. Empirical results confirm the importance of the fiscal policy of small states on the attraction of foreign investors and the importance of maintaining and increasing their openness to trade (see table 9).

Table 9 - Synthesis table

Hypotheses	Confirmation
H1: The availability of natural resources in small states is positively related with FDI	Not confirmed
H2: Market growth rate of small states is positively related with FDI	Not confirmed
H3: Corporate tax in small states is negatively related with FDI	Validated
H4: The degree of openness of small states is positively related with FDI	Validated

As for the control variables, market size (measured by population) has a non-significant relation with the dependent variable in some models which is coherent with the empirical studies of small states analysed on chapter 2 (Read, 2008 and Singh et al., 2008), although this variable turned out to be significant and positively related with FDI in other cases (Model IA' and IC'). Nevertheless, when measured by GDP, the relation between market size and FDI is positive in most models, with strong significance. The degree of human capital development was proved to be an important driver of FDI in small states since it has a positive and strong significant relation with FDI in all of the models tested. In fact, this result is consistent with empirical literature (Nonnenberg & Mendonça, 2004; Castiglione et al.,

2012 and Rjoub et al., 2017) which shows the importance of this variable that must be taken into consideration when talking about foreign investors' attraction. As for the availability of infrastructures, the digital access has the expected sign and it is significant in most of the models, although telephone subscriptions are non-significant. In fact, when analysing Figure A5 (in Annexes) telephone subscriptions have been fallen drastically and that might be due to the fact that telephones are being replaced by other means of communications turning their prices higher comparatively to others and their utility residual. These results are also consistent with other studies of FDI determinants of small states (Sing et al., 2008). Finally, and in line with the literature (Rjoub et al., 2017), the control of corruption that aims to measure the strength of the institutional framework seems to have a positive and significant relation with FDI in 2 of the models tested which means that the higher the control of corruption or the stronger the institutional framework, the higher the FDI.

5. Conclusion

FDI has been studied for the past decades and has been subject of greater attention in more recent times due to the increasingly openness of the world economy and to the impact that it has on the host economies. This is particularly true for small states that heavily depend on international finance and foreign investment to sustain their economic activity and social and economic development (World Bank, 2016). Thus, being successful in attracting FDI is crucial for the performance of small states' economies and for their sustainability. Although the positive impact that FDI has on these economies, it is not always easy for them to attract foreign investors. In fact, the specification and restrictions of small states, turn them less attractive to investors, at first sight. Nonetheless, small states might have some particular features that compensate for their small size and for their restrictions related to market limitations and remoteness.

This study sought to perform an analysis of the potential drivers of FDI in small states. In order to achieve the goal of the investigation, it was employed a panel data of 40 small states over the 2005-2015 period. A backward selection method of the variable was performed, and the study was summarized in the analysis of the availability of natural resources, market growth, level of corporate taxation, degree of openness to trade, market size, degree of human capital development, availability of infrastructures and control of corruption as potential determinants of FDI in small states, with the first four determinants being the principal hypotheses under analysis. Using a fixed effects model (following the results of the Hausman test), twelve models were estimated taking into account the existence of several proxies for some potential determinants.

The empirical results showed that the level of the corporate taxation, the degree of openness and the degree of human capital development were important drivers of FDI in small states but with different impacts. It was proved that the lower the level of the profit tax rate applied by the small states, the higher the level of FDI into that country. In fact, it is true that several small states are pure tax heavens (Hampton & Christensen, 2002) which attract foreign investors who sought to minimize their costs. Nonetheless, reflecting on this result one may further investigate if this is a sustainable measure. The world policy is trying to fight tax heavens and failures in the tax system and OECD moves to increase pressures on countries that fail to comply with laws on tax heavens requiring standards on transparency and

information exchange (OECD, 2017). United Nations also highlight the attention of policymakers in tackling tax avoidance focusing on tax rules and transparency principles (UNCTAD, 2015). The World Bank, on the other hand, states that the tax base for most small states is small and inadequate to meet the cost of public administration and services. (World Bank, 2016). Thus, everything points to the fact that the fiscal policies of the small states need to be improved to optimize a source of revenue and to cooperate with international politics. Nevertheless, the true effect of these policies is unknown, and the effects can be ambiguous. On one hand, improving fiscal policies will benefit small states since it will improve a source of income and, on the other hand, higher levels of corporate taxation will push foreign investors away. Nonetheless, due to pressures from international entities such as OECD and UNCTAD, foreign investors may set back in the willingness of taking advantage of these tax benefits. Hence, small states must leverage their comparative advantages in other types of measures and seek other advantages to attract FDI. One can discuss the political strategy of small states that can be leveraged by policies on human capital development and openness to the world economy instead of low levels of corporate tax.

The level of human capital development and the degree of openness to trade were found to be the most important drivers of FDI in small states. It was proved that the higher the degree of openness to trade, the higher the attraction of FDI. Small states are known by their openness to the world trade which stands out as an important political determinant of FDI in small states. Thus, the result of the present study points to the importance of the countries' openness in order to attract more investment. Nonetheless, it is important to have in mind that the more open a country is, the more susceptible it is to the shocks of the world economy. This is true specially for small states that highly depend on international finance and face more exposure to those shocks that will affect income, employment and expenditure. Higher level of openness might attract foreign investors but only to a certain extent since high volatility to changes in the world economy might discourage FDI. Further investigation is needed to understand the positive and negative effects of the openness. It was also proved that the higher the level of human capital development, the higher the FDI. This seems to be a measure that small states can rely on to improve their attractiveness which, on the long run, will allow to sustain their development and stability.

Additionally, a significant relation between the availability of natural resources and the market growth with FDI was not proved although there are reasons to believe that they might

be potential drivers of FDI. Small states have access to natural resources that can potentiate tourism activities and they also have privileged access to some valuable raw material and abundant renewable natural marine resources. Nonetheless, small states' governments might not have the required knowledge and resources to best manage these advantages. Thus, these location advantages might not be well explored and do not contribute for the attraction of foreign investors. Contrarily to what was expected, the arrival of tourists was proved to have a negative relation with FDI in some models that might be explained by a possible over-supply that discourage the investment because of the perception of the scarcity of opportunities given the restricted size of the countries. On the other hand, small states have typically high market growth rates which might implies some homogeneity that do not influence foreign investors.

The present work also proved that market size, availability of infrastructures and control of corruption measures might be significant drivers of FDI. In some models, market size was proved to be positively related with FDI and the digital access was proved to positively affect FDI. Control of corruption also seems to be a feature that foreign investors might value since in two of the models, holding everything else constant, an improvement on the control of corruption improves FDI.

The results of this study were mostly consistent with the empirical studies carried out, particularly the scarce FDI literature on small states. Nonetheless, the present work has some limitations. There are few data available about small states since they are rarely study and sometimes the data available is of low quality and seems non-reliable. One could question whether the proxies used were the most appropriated and suitable ones. The arrival of tourists, for instance, is a proxy rarely used to measure natural resources since it is not directly related to the endowment of resources but with the indirect effects that natural resources can attract to the country. Additionally, the present work does not have in consideration some specific features of each small states. It could be of value, for instance, to analyse if there are significant differences in the analysis between small states that are or are not islands (26 of the 40 small states under analysis are islands which might have impact on the FDI attraction) or between small states located in Latin America and Caribbean, Middle East and North Africa, South Asia, East Asia Pacific, Europe and Central Asia or Africa.

Further investigation might explore the drivers of FDI in small states using primary data

trying to understand the process, the “how” and “why” multinationals invest in those countries. Perhaps a qualitative approach would explain and understand multinationals’ investments in small states and trigger new information that would help to better understand these countries with such unique characteristics. Furthermore, small states have little impact on the world economy because of their reduced size, nonetheless, the behaviour of the world economy and investment has a huge impact on the sustainability of small states and it could be of value to study the impact of FDI in small states, both in its social and economic development and in the improvement on its financial sustainability and economic growth.

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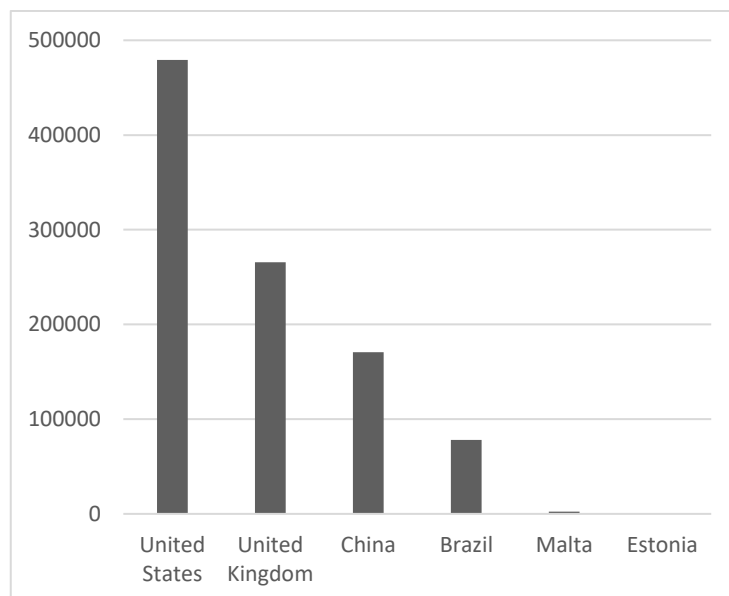
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Annexes

Figure A1 – FDI in the USA, UK, China, Brazil, Malta and Estonia



US\$ (thousand)
Source: The World Bank Data, 2016

Table A1 – Small states analyzed in the present work

Small states (code) World Bank list in http://pubdocs.worldbank.org/en/922761504726183951/COUNTRY-LINK-Small-States.pdf	Region	Excluded of the analysis No data available (x)
Antigua and Barbuda (ATG)	Latin America and Caribbean	
Bahamas, The (BHS)	Latin America and Caribbean	
Bahrain (BHR)	Middle East and North Africa	
Barbados (BRB)	Latin America and Caribbean	
Belize (BLZ)	Latin America and Caribbean	
Bhutan (BTN)	South Asia	
Botswana (BWA)	Africa	
Brunei Darussalam (BRN)	East Asia Pacific	
Cape Verde (CPV)	Africa	
Comoros (COM)	Africa	

Cyprus (CYP)	Europe and Central Asia	
Djibouti (DJI)	Middle East and North Africa	
Dominica (DMA)	Latin America and Caribbean	
Equatorial Guinea (GNQ)	Africa	X
Estonia (EST)	Europe and Central Asia	
Fiji (FJI)	East Asia Pacific	
Gabon (GAB)	Africa	X
Gambia, The (GMB)	Africa	
Grenada (GRD)	Latin America and Caribbean	X
Guinea-Bissau (GNB)	Africa	
Guyana (GUY)	Latin America and Caribbean	
Iceland (ISL)	Europe and Central Asia	
Jamaica (JAM)	Latin America and Caribbean	
Kiribati (KIR)	East Asia Pacific	
Lesotho (LSO)	Africa	
Maldives (MDV)	South Asia	
Malta (MLT)	Europe and Central Asia	
Marshal Islands (MHL)	East Asia Pacific	X
Mauritius (MUS)	Africa	
Micronesia, Fed. Sts. (FSM)	East Asia Pacific	X
Montenegro (MNE)	Europe and Central Asia	X
Namibia (NAM)	Africa	
Nauru (NRU)	East Asia Pacific	X
Palau (PLW)	East Asia Pacific	X
Qatar (QAT)	Middle East and North Africa	
Samoa (WSM)	East Asia Pacific	
San Marino (SMR)	Europe and Central Asia	X
Sao Tome and Principe (STP)	Africa	
Seychelles (SYC)	Africa	
Solomon Islands (SLB)	East Asia Pacific	
St. Kitts and Nevis (KNA)	Latin America and Caribbean	
St. Lucia (LCA)	Latin America and Caribbean	
St. Vincent and The Grenadines (VCT)	Latin America and Caribbean	
Suriname (SUR)	Latin America and Caribbean	
Swaziland (SWZ)	Africa	
Timor-Leste (TLS)	East Asia Pacific	

Tonga (TON)	East Asia Pacific	
Trinidad and Tobago (TTO)	Latin America and Caribbean	
Tuvalu (TUV)	East Asia Pacific	X
Vanuatu (VUT)	East Asia Pacific	

Figure A2 – Evolution of the population between 2005 and 2015

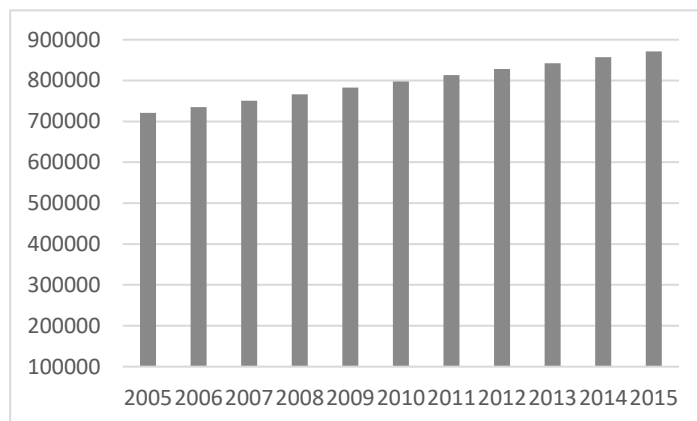


Figure A3 – Evolution of the GDP between 2005 and 2015 (millions USD)

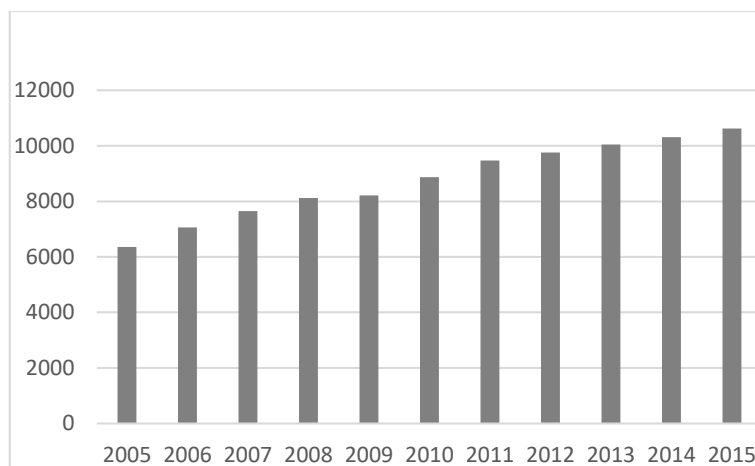


Figure A4 – Evolution of the mean years of schooling in small states between 2005 and 2015

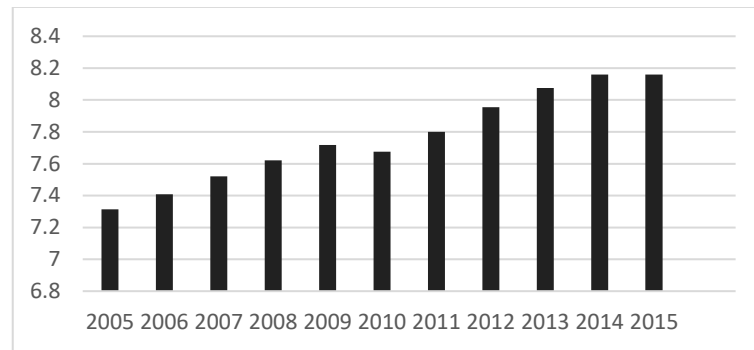


Figure A5 – Evolution of the telephone subscriptions (per 100 inhabitants) between 2005 and 2015

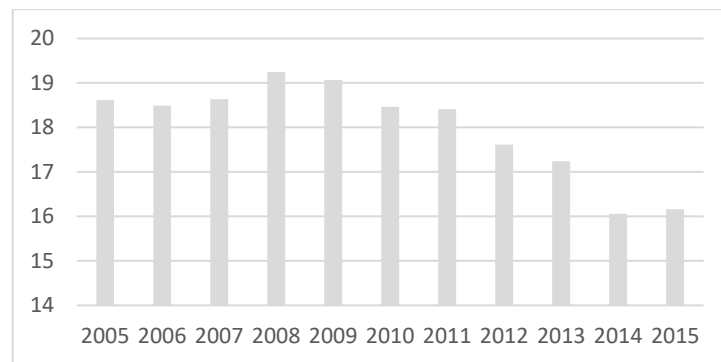


Figure A6 – Evolution of the digital access (% of population) between 2005 and 2015

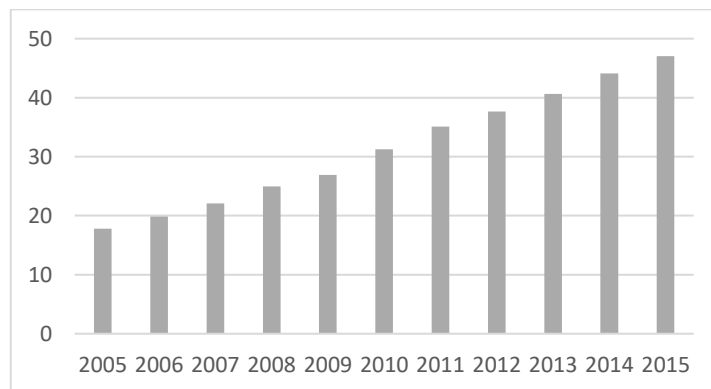


Figure A7 – Evolution of the inflation rate (%) between 2005 and 2015

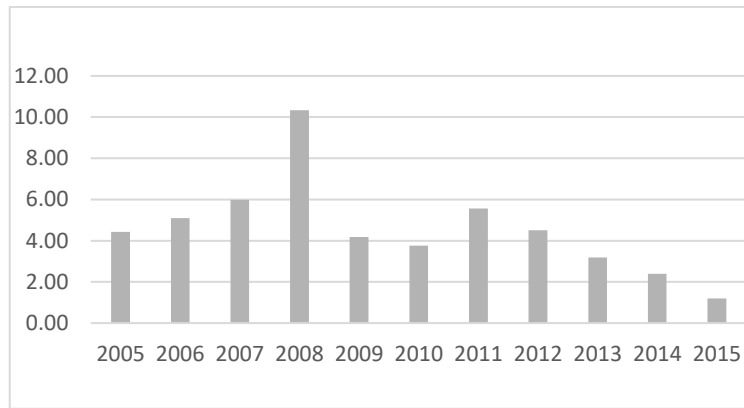


Figure A8 – Evolution of control of corruption index (%) between 2005 and 2015

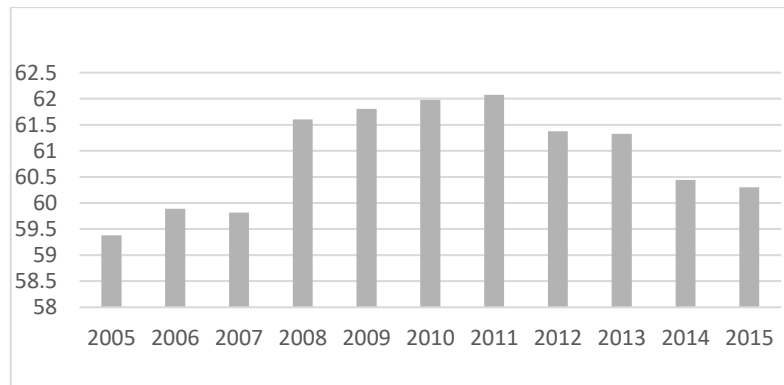


Table A2 – Estimation outputs: alternative models

Determinant	Proxy	Model IA'	Model IB'	Model IC'	Model IIA'	Model IIB'	Model IIC'
Availability of natural resources	TOURISTS			-0.0001** (0.0001)			-0.0001** (0.0001)
	FUEL_EXP		0.0012 (0.0034)			0.0013 (0.0034)	
	TOURISM_REC	-0.0014 (0.0027)			-0.0010 (0.0027)		
Market growth	GROWTH	0.0053 (0.0070)	-0.0043 (0.0076)	0.0042 (0.0069)	0.0045 (0.0068)	-0.0044 (0.0074)	0.0024 (0.0068)
Corporate tax	TAX	-0.0189*** (0.0058)	-0.0092 (0.0061)	-0.0180*** (0.0057)	-0.0194*** (0.0057)	-0.0092 (0.0061)	-0.0188*** (0.0057)
Degree of openness	OPENNESS	0.0044*** (0.0017)	0.0024 (0.0016)	0.0045*** (0.0016)	0.0043** (0.0017)	0.0023 (0.0016)	0.0042*** (0.0016)
Market size	POP	0.0003* (0.0002)	0.0001 (0.0002)	0.0005** (0.0002)			
	GDP				0.5085*** (0.1839)	0.1071 (0.2064)	0.6253*** (0.1910)
Availability of infrastructures	SCHOOL	0.3538*** (0.0512)	0.3023*** (0.0496)	0.3719*** (0.0509)	0.2904*** (0.0582)	0.2891*** (0.0577)	0.2981*** (0.0575)
	TELEPHONE	0.0086 (0.0076)	0.0100 (0.0070)	0.0074 (0.0076)	0.0077 (0.0076)	0.0098 (0.0070)	0.0062 (0.0075)
Corruption	CONTROL OF CORRUPTION	0.0021 (0.0039)	0.0051 (0.0041)	0.0020 (0.0038)	0.0023 (0.0038)	0.0052 (0.0041)	0.0023 (0.0038)
	Hausman test	0.0000	0.0055	0.0005	0.0000	0.0101	0.0000
	Prob>chi2						
	Obs	429	326	429	429	326	429
	Adjusted R-sq	0.2274	0.1969	0.2360	0.2369	0.1974	0.2456

FDI/GDP was logarithmized following standard practices (Read, 2008);

GDP was logarithmized since it was expressed in monetary values (Nonnenberg & Mendonça, 2004);

Legend: * p<.1; ** p<.05; *** p<.01.